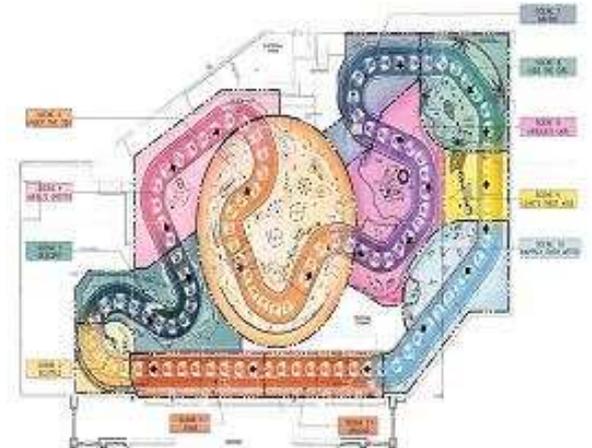
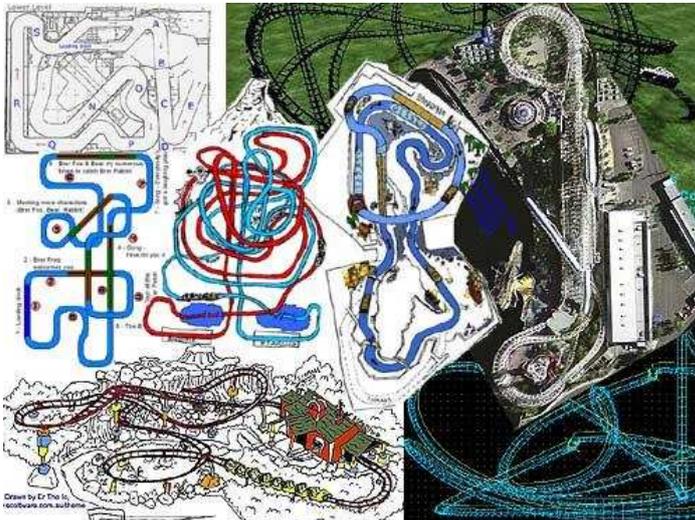
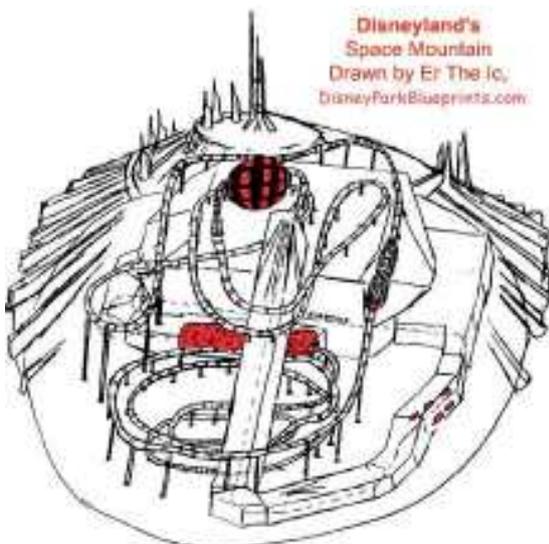


# Imagineering Classrooms

P.B.L. and S.T.E.M. Lessons



## Unofficial Training Guide for "Disney Imagineering Educators"



**Howie DiBlasi, Ph.D.**

**UPDATED and Revised: Version 2.11**

Concept sketch-provided by DisneyPark Blueprints

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## Dedication:

A hundred years from now it will not matter what my bank account was, the sort of house I lived in, or the kind of car I drove...but the world may be different because I was important in the life of my children, Mark, Jennifer, my Grand Children: Christian, Jonathan, Brock, Ava, Luca and Ben.

## Foreword

To make this project happen, teachers are given the resources to create a standards-based curriculum that speaks to the hearts, minds, and hands of students. This curriculum engages students with a real world design and creativity/innovation issues and encourages teachers and students to work together as a team in researching, managing and solving this issue. Over the course of this long-term project, students have the opportunity to develop problem-solving and decision-making skills, as well as skills necessary for teamwork, cooperation and community engagement. The students further build confidence and self-esteem, while also improving their local environments, themselves and the world around them.

This e-Book was developed after two years of "Field Testing" at schools Technology Conferences, hands-on professional workshops with teachers and administrators and students.

## Special Thank You

I would like to thank two individuals that have encouraged me and provided invaluable guidance and resources of the past two years. Steve Alcorn and Jeff Dixon were always available to answer my question and provide resources. "Thank you for your fabulous insight and coaching. Whether or not anything happens with the publication, this has been *a great growth experience for me.*"

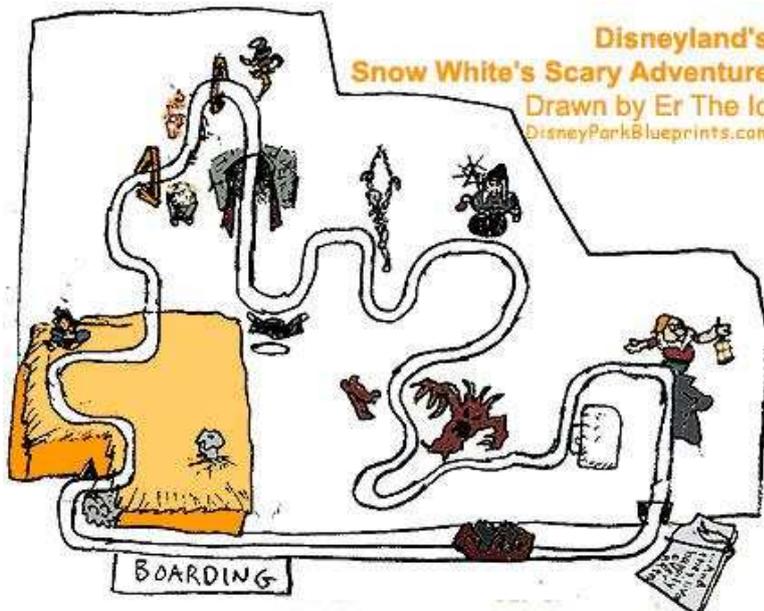
# P.B.L. Disney Imagineering Projects



## Unofficial Training Guide for Disney\* Imagineering Educators

### “Real World Project” P.B.L. and S.T.E.M. Lessons

"We make the magic." That's our motto at Walt Disney Imagineering, and it's a belief that permeates everything we do. From castles, mountains and mansions to fireworks spectacles, Imagineers are the creative force behind the iconic Disney attractions and experiences that our guests have come to know and love. We combine our rich storytelling legacy with the latest technology to breathe life into beloved Disney stories and characters in our theme parks, resorts, cruise ships and other Walt Disney Parks. © WED Imagineering



1. All images this page - Re-The LC, WDW info. WDW images. www.wdwinfo.com/ JPEG file

## Comments from the conference sessions and workshops:



Very engaging!! Students would love this; teachers need to take some risks and try things like this. Very engaging!! I wish teachers could see that pbl doesn't take "extra" time but makes better use of the time they have. GT

Made everyone get beyond their own comfort with their coworkers...just like kids are asked of in class DE

This activity was completely engaging. Everyone in the group participated. This project really meets Chris Tovani's definition of "rigor." JA

<sup>3</sup>. Allears. WDW images. [www.allears.net/](http://www.allears.net/) JPEG file

Highly engaged, fully participatory, plays on individual strengths, focuses on technology supports, aligns with multiple curricular areas JE

This was an interesting experience creating a new ride for one of the Disney Parks. This could really get students involved in areas all across curr. SH

Highly engaging, rigorous work. WOW! RZ

I like this mode of instruction for at risk students. VB

Very creative, wish we'd had more time FL

I liked the creativity piece and could see how a group of kids would have a blast collaborating on this project. CH

Awesome activity: BL

It was fun to work with a wide variety of people. This variety allowed for creative ideas and rich conversations. TO

The knowledge of the presenter. I really love all the resources Dr. Howie gave us. Thanks so much!! JT

Getting some learning on at AETA with @hdibiasi. He makes missing the beach worthwhile! PK

Settling in to hear the best of the best @hdibiasi do his thing. Can listen to this guy all day. #AETA CR

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## Preface

In 1959, Walt Disney Productions began looking for land for a second park to supplement Disneyland, which opened in Anaheim, California, in 1955. Market surveys revealed that only 5% of Disneyland's visitors came from east of the Mississippi River, where 75% of the population of the United States lived. Walt Disney wanted control of a much larger area of land for the new project.

Walt Disney flew over the Orlando-area site (one of many) in November 1963. Seeing the well-developed network of roads, including the planned Interstate 4 and Florida's Turnpike, with McCoy Air Force Base (later Orlando International Airport) to the east, Disney selected a centrally located site near Bay Lake.

I had just graduated from F.S.U. (Florida State University) and was completing my first year teaching in Ft. Lauderdale Florida. My best friend from college and I, decided we would do a road trip of best the places to visit for two single guys. As we traveled the summer of 1965, we heard many rumors of someone buying large parcels of land in central Florida. In the late 50's, I had visited Disneyland and was a "HUGE" Walt Disney fan. I read everything about the park and the innovation behind the early technology.

It turned out that Disney used various dummy corporations to acquire 27,443 acres ( 42 sq miles) of land. In May 1965, some of these major land transactions were recorded a few miles southwest of Orlando in Osceola County. Also, two large tracts totaling \$1.5 million were sold, and smaller tracts of flatlands and cattle pastures were purchased by exotic-sounding companies such as the Latin-American Development and Management Corporation and the Reedy Creek Ranch Corporation (Some of these names are now memorialized on a window above Main Street, U.S.A. in the Magic Kingdom).

Most owners were happy to get rid of the land, which was mostly swamp.

After most of the land had been bought, the truth of the property's owner was leaked to the Orlando Sentinel newspaper on October 20, 1965. A press conference was organized for November 15, 1965, when Walt Disney explained the plans for the site.

For the next 45 years, I would make over 99 trips to Disneyland, Walt Disney World and the four parks. Over the past 7 years I would write blogs, articles, create web pages and sites, help friends with tips on what to do there and teach graduate classes on "Project Based Learning" and S.T.E.M. integration into the schools curriculum.

This e-book is the culmination of the passion and dedication to a man who left a legacy of "Storytelling and Innovation", that is carried on today around the world as *Walt Disney Imagineering*.

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## Background Information

### 10 Amazing But Overlooked Innovations By Walt Disney

<http://listverse.com/2013/05/31/10-amazing-but-overlooked-innovations-by-walt-disney/>

Thank you to "LISTVERSE" for permission to reprint this article.

#### Ross Yaylaian

Most remembered for the theme parks that bear his name, Walter Disney's imagination was truly stunning. Though his beginnings as a cartoonist were fairly humble, he soon revolutionized the animation industry, contributing far more than just a familiar happy-go-lucky mouse. He went on to influence countless fields throughout his life including robotics and transportation. In a true culmination of all his talents, Walt even managed to design a fully functional "city of the future" before his death in 1966.

#### 10-Switch-Back/Interactive Lines



Disney often displayed his innovations at the annual New York World's Fair. His attractions drew record crowds that spilled out from the waiting areas inside the pavilions and onto the fairgrounds. The implementation of switch-back lines (lines that fold in on themselves instead of remaining straight) allowed more people to be condensed into a smaller area in an efficient and organized fashion. Switch-back lines today can be seen in banks, airports, and of course, Disney theme parks. Disney later took the

"waiting in line" concept to an entirely new level with the introduction of interactive lines. These are lines that actually become part of the ride itself. For example, Disney attractions like the Haunted Mansion, Tower of Terror, and Midway Mania (pictured above) all feature unique interactive lines.

#### 9-Shopping Malls



Disney was responsible for many hugely influential innovations in his lifetime, some of them even unintentionally. Main Street, USA in Disneyland is widely recognized as the world's first indoor shopping mall. Shops on either side of the street have openings which allow you to walk from one shop to the next, all under cover, from one end of the street to the other. The design may not have been done with malls in mind, but businesses have certainly taken the idea and run with it.

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## 8-Transportation/Monorails



Moving [large groups of people](#) quickly and efficiently were some of the main tenets of Epcot (back in the days when Epcot was going to be a model city of the future). Disney pioneered the use of the all-electric PeopleMover system, which was planned to shuttle residents around Epcot. Also on the drawing board was the use of monorails for mass transportation of residents to and from the urban section of the city. Both systems are still in

use today. The PeopleMover is located in the Magic Kingdom and actually passes through Space Mountain where a portion of the model of Epcot can be seen. The monorail is located in and around both the Magic Kingdom and Epcot. Disney's monorail was America's first daily-operating Monorail system.

## 7-Merchandise



Disney was a trailblazer in [merchandising](#). He understood early on that the right merchandise could become an effective tool to promote Disney movies and TV shows. As soon as [Mickey Mouse](#) became popular, Disney manufacturers flooded him with ideas to cash in on the phenomenon. Disney only wanted the best products to bear Mickey's name and image however. The studio negotiated a 2.5-5 percent royalty on all items, and at the depth of the Great

Depression consumers bought hundreds of thousands of items from toys and ice cream cones to the famous Mickey Mouse watches. In the early 50's the Disneyland television program aired the show Davy Crockett. A trade embargo with China led to surpluses of raccoon skins and inspired Disney to negotiate a deal for coonskin hats like the one worn by Crockett on the show. Demand exceeded expectations and the hats sold by the millions. Composer George Burns put together a song titled "The Ballad of Davy Crockett" for the show. The track quickly became a hit, selling ten million copies and spending a month at #1. Even though we take merchandising for granted these days, in Disney's time these fresh innovations helped change American entertainment.



## 6-Television

Long before a television sat in every living room, Disney understood their power. During the early stages of planning Disneyland, Walt and his brother Roy knew they needed money to help fund such an ambitious project. Roy traveled to New York to meet with network executives to discuss TV's ability to finance and promote the park. ABC agreed to a weekly Disney series. The series debuted in 1954 with major success. The studio used the series to hype the

theme park and promote Disney films. Walt insisted on filming as many segments as possible in color, even though most televisions still used black and white, because

he believed color would become the new standard. A few years later, he moved his show to NBC, where the entire program was broadcast in color and retitled "[Walt Disney's Wonderful World of Color](#)." With this 1961 television series, Disney Studios became the first ever to provide regular color programming for television. Disney clearly saw the value of the then infantile medium of television. He was aware of the power of promotion through TV and he used it to connect with the public in an entirely new way.

### 5-Dark Rides-Fully Enclosed Attractions



The 1965 [New York World's Fair](#) saw Disney successfully introduce a number of never-before-seen ride innovations. Traditionally, theme park attractions included outdoor rides and perhaps a fun house / haunted house walkthrough. Disney radically changed this model, creating the standard for what we now consider "theme park rides." When Disney was working on the "It's a Small World" attraction, it was planned to be a walk-through attraction.

Disney realized however, that he couldn't handle enough people using a walk-through format. So, the attraction became a boat ride, where flat-bottomed boats were gently pushed along by underwater jets. The ride system was so successful that the [Pirates of the Caribbean](#), originally meant to be a walk-through, was changed to a more realistic boat ride. Rides like Matterhorn Mountain, the world's first enclosed steel roller coaster, and "Soarin" in Epcot, also fall into the parameters of "fitting into the theme of the show." The Omni-mover ride system, where ride vehicles glide along on a continuously moving track, was developed for the World's Fair and was used on the Ford Magic Skyway attraction. Rides like the Haunted Mansion in the Magic Kingdom (the fabled doom buggies) and Spaceship Earth in Epcot still employ the system.

### 4-Family Theme Parks



Walt Disney dreamed of creating the first entertainment enterprise where children and parents could have fun together. While we may take such a concept for granted today, the idea was truly novel back in the mid-20th century. Traditionally, amusement parks only catered to children, leaving tag along parents with nothing to do. Walt envisioned a place where [parents and children](#) could share fun

experiences with each other. Disneyland, which opened on July 17, 1955, was that place. Disney also surrounded his innovative park with an earthen barrier to insulate his guests from the intrusions of the outside world and place them in a reassuring atmosphere. Disney emphasized that the parks are about reassurance, that the world can be OK, that you can talk to a stranger in a public place, and that a public place can be clean.

<sup>45</sup>. Images this page: Credit to <http://listverse.com> JPEG image file

### 3-Audio-Animatronics



Hastened by Disney's participation in the [World's Fair](#), audio-animatronics became one of the most significant breakthroughs in the history of theme park entertainment. Attractions like The Carousel of Progress, Ford's Magic Skyway, and Great Moments with Mr. Lincoln all featured Disney's never-before-seen robots. The audio-animatronic figures moved and talked, grunted and gesticulated like real, live beings. It was a new toy for Disney's creative staff, and a new way to tell

stories in three-dimensional fashion. While the Carousel of Progress and the Magic Skyway featured rather anonymous characters, the Lincoln figure recreated the famed US president in jaw dropping fashion. It turned out, in hindsight, to be a radical machine; the first time the world was ever going to see a really believable animated figure. The latest and most sophisticated audio-animatronic figures continue to play prominent roles throughout the Disney entertainment world.

### 2-Animation and Film



It is hard to imagine any aspect of animation that was not influenced by Walt. He created the first cartoon to successfully synchronize sound and picture (Steamboat Willie, 1928). He was responsible for the first feature length animated film (Snow White and the Seven Dwarfs, 1937). He pioneered the use of the Circle Vision filming technique, which allowed him to shoot and present movies in 360 degrees, surrounding the audience. He was even the first to develop an optical printer that could combine live-action and animation together

(The Three Caballeros, 1945). And as if this wasn't enough, perhaps his largest contribution to the world of animation was his invention of the multi-plane camera, pictured above (Patent No. 2,201,689). The [multi-plane camera](#) is a special [motion picture camera](#) which allowed Disney to transform flat, one-dimensional animation into layered shots with depth and movement. Various parts of the artwork layers are left transparent, to allow other layers to be seen behind them. The movements are calculated and photographed frame-by-frame, with the result being an illusion of depth by having several layers of artwork moving at different speeds. It transformed animation in much the same way that computer graphics did years later.

<sup>45</sup>. Images this page: Credit to <http://listverse.com> JPEG image file

## 1-City of the Future



EPCOT stands for “Experimental Prototype Community of Tomorrow.” No one can say just when the idea of creating a model city of the future occurred to Walt Disney, but as early as 1964, operating in secrecy, Disney began planning a true city of the future; a development combining the latest technologies and materials with time-tested concepts about livable communities. [Epcot’s radial design](#) surrounded a high-density urban core with low-density

neighborhoods; at its center was a 50-acre downtown area housing hotels, apartments, convention centers and offices, and shopping and entertainment venues. Towering above was the spire of a cosmopolitan 30-story hotel, providing guests with a panoramic view of Walt’s sleek metropolis.

Transportation was important to Walt’s Epcot; the layout of the city was designed to discourage car use. Facilities could be accessed via PeopleMover, or, for those who did drive, an intricate system of roads allowed motorists to travel around the city without gridlock or even stoplights. An enclosed downtown Transportation Lobby enabled transfers between the city’s PeopleMover system and monorails linking to other parts of the planned Disney World development. Walt said Epcot would constantly be updated to



project a vision of “optimum patterns of urban living” 25 years in the future, and was designed to be a dynamic environment that would “always be introducing and testing and demonstrating new materials and new systems.” Sadly, Walt Disney died in 1966, before Epcot could be realized. Walt’s brother Roy decided to suspend master planning in favor of focusing all efforts on finishing the Magic Kingdom. The vision of Epcot still lives on today however, as one of four theme parks in Walt Disney World.

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# Chapter 1.

## Program Details and PBL

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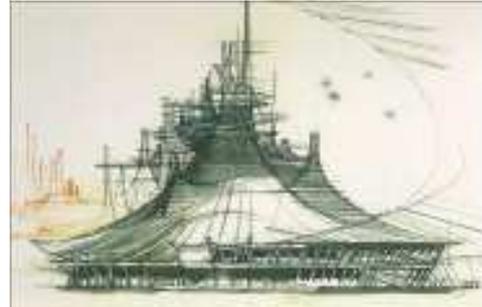
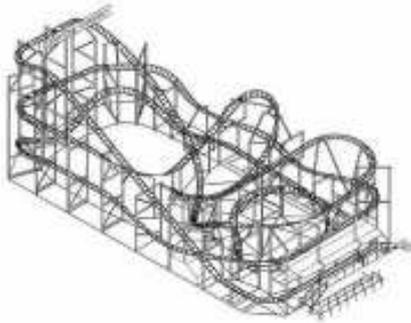
Expanding knowledge of Disney theme park attractions, rides and coaster design from investigations. Students explore the type of attractions, and investigate each for the four Disney parks and the rides and attractions. Students develop research skills in curriculum content area, learn about technical reading and writing, creating the story, explore storyboards, utilize Web 2 tools, and conduct experiments presenting and rehearsing the "Pitch".

Credit to *Buck Institute for Education* [www.bie.org](http://www.bie.org)- for use of the PBL Steps -

<sup>45</sup>. Images this page: Credit to *Buck Institute for Education* [www.bie.org](http://www.bie.org) file image JPEG file

# Project Based Learning:

Design & Build a Theme Park attraction at a Disney World Resort Park



## Objectives

- Students identify and design a Disney World attraction to be developed for family entertainment at one of the Walt Disney World Theme Parks.
- Students will design and create a solution that they manage and document from start to finish.
- Students will understand , utilize and incorporate Science, Technology, Engineering, Art and Math (STEAM) Skills as they think about key skills needed in today's workplace: problem solving, analytical thinking, and the ability to work independently.
- Students and teachers will utilize and incorporate ten of the I.S.T.E. N.E.T.S. (National Educational Technology Standards)
  - Creativity and Innovation
  - Communication/Collaboration
  - Critical Thinking/Problem Solving/Decision Making
  - Facilitate/Inspire Student Learning and Creativity
  - Research and Information Fluency
  - Technology Operations/Concepts
  - Develop Digital-Age Learning Experiences and Assessments
  - Model Digital-Age Work and Learning
  - Model Digital Citizenship and Responsibility
  - Productivity and Professional Practice
- Students will use "soft" skills on the projects as much as they use math and science. These soft skills include:
  - Communication and cooperation skills to listen to customer needs or interact with project partners.
  - Creative abilities to solve problems and develop new ideas.
  - Leadership skills to lead projects or help customers.
  - Organization skills to keep track research, data and significant information.

How do I increase both the rigor and relevance of the project. The Essential PBL Elements are:

- Significant Content
- 21st-Century Skills
- In-Depth Inquiry
- Driving Question
- Need to Know
- Student Voice & Choice
- Reflection & Revision
- Public Audience

- Each participating class team **develops a portfolio for evaluation**. Projects are evaluated by a panel of experts on Disney Imagineering, theme park-relevance, student learning, changes in practices and attitudes, community involvement, lasting benefits to students, school and/or community, and originality. A rubric has been developed to measure all projects evenly and fairly.
- 
- **Involve a public audience**. Students present their work to other people, beyond their classmates and teacher – in person or online. This “ups the stakes,” increasing students’ motivation to do high-quality work, and adds to the authenticity of the project.

## Program Information

### CURRICULUM INTEGRATION:

With lessons tailored to state standards, PBL can be used to either enhance or replace a teacher’s mandated curriculum. All subjects can be explored: science (environmental studies), language arts (reading while researching), writing/editing (grant, letter and journal writing), oral language skills (presentations, plays, conferences), social studies (historical impacts of issue on local land and native people), math (fund-raising, graphs and data analysis), and visual and performing arts (artwork, plays and informational displays).

### PROJECT-BASED LEARNING (PBL):

The principles of PBL include strong academic themes, student-centered work, hands-on learning, and cooperation all combined into a multi-disciplinary curriculum. Through this teaching methodology, students do not only learn information, but they also learn the skills necessary for ongoing and individualized learning. In other words, they learn the skills needed for research practices, skills that lead to the development of unique answers and aid with a life-long pursuit of knowledge.

## What is PBL ? [http://www.bie.org/about/what\\_is\\_pbl](http://www.bie.org/about/what_is_pbl)

- Students go through an extended process of inquiry in response to a complex question, problem, or challenge.
- 
- Student "voice and choice," rigorous projects are carefully planned, managed, and assessed to help students learn key academic content.
- 
- Practice 21st Century Skills (such as collaboration, communication & critical thinking)
- 
- Create high-quality, authentic products & presentations.

## PBL Eight Stages: Essential PBL Elements

- Significant Content
- 21st-Century Skills
- In-Depth Inquiry
- Driving Question
- Need to Know
- Student Voice & Choice
- Reflection & Revision
- Public Audience



## [PBL: Project "Balanced" Learning](http://www.cfmediaview.com/lp1.aspx?v=6_1615814200_72284_20)

[http://www.cfmediaview.com/lp1.aspx?v=6\\_1615814200\\_72284\\_20](http://www.cfmediaview.com/lp1.aspx?v=6_1615814200_72284_20)

By [Kami Thordarson](#)

Essential Question. Essential Questions are about big ideas. They spark conversation and create more questions. Through a well facilitated discussion leading from the Essential Question, you can often guide students to co-creating a [Driving Question](#) in the direction you want them to go, allowing students to own the learning. The Driving Question gives them the ending destination, but there could be many different routes that will get them there. A good PBL unit will have a well thought out Essential and Driving Question to get students started in the correct direction, but allow for student voice and choice to pave the trail. Developing guideposts along the way, such as check-ins to update their need to knows and timelines, will help keep students moving towards their destination and keep them from getting lost in the weeds.

### **Balance of Skills:**

A teacher becomes a master conductor of a learning orchestra during a project. Each student has their own unique talents and instruments that they bring to the concert. Taking the time to blend those talents in a productive way is critical to each group's success. Starting out with teacher selected teams can help with balance. You can build in some self-selected group or whole group activities to help relieve any team tensions and allow students to gather new insights and perspectives as they move throughout the project. Since collaboration and communication are important skills in PBL, students need opportunities to recognize each other's talents and know where their own strengths and abilities can benefit their team.

As you are designing the project, also look to see that your scope is large enough to offer students a variety of work options. Think about how the project will integrate tasks for those linear thinkers as well as offer challenges for those divergent thinkers. While students need practice and exposure to new skills to build their creative confidence, it's also important that they have places where they can stretch and expand their natural

talents. We may want to play every instrument, but there is usually one that draws us in and makes us shine. It's designing a delicate balance between those solo moments and blending all of the voices that creates a successful performance at the end.

### **Balance of Time:**

Time is usually the critical factor when planning a PBL unit. Instructional time already feels overcrowded with various curriculum demands and although PBL is an integration of subject areas, most classrooms are set up to teach subjects in isolation. In the planning phase, look for those skill based lessons that are needed to support the project and how those lessons can be integrated into those isolated subject lessons. Perhaps students will need to strengthen their nonfiction reading skills and need some different strategies for curating information. Spending time on focused skills before starting the project will help students make better use of their collaboration time. Gathering continual feedback through visual thinking strategies and quick formative assessments will help point out surprise areas where students may need more support or direct instruction. Projects nearly always take longer than you think so providing yourself a time cushion will lessen stress.

### **Balance of Group and Individual Work:**

Finally, a good project should balance group and individual work. Whenever I would introduce an assignment or project in my classroom, I would hear the same two questions: "Can we work with someone?" and "Do we have to work with someone?" Because PBL is focused on collaboration, group work is expected and often times students are set up in team units. However, in order to honor all working styles, it's important to include individual accountability as well as team accountability. Also, having a protocol in place for students to follow when needing adult help to problem solve group conflicts is also helpful. Students need to feel valued as team members but also feel that their individual efforts are being recognized.

Project Based Learning can feel like tight-rope walking. But with careful planning and practice, the well-orchestrated chaos can seem more like a walk in the park.

*Kami Thordarson is a graduate of the 2011 MERIT program through the Krause Center for Innovation and has led classes on project-based learning, digital storytelling, and design thinking. She is the Innovative Strategies Coach for the Los Altos School District. Read more at [Innovate, Create, Educate](#).*

## **PBL Curriculum Framing Questions**

### **General Question**

How does design contribute to creating things in our world?

What is the value of research in a design project?

When and how are mathematical formulas used to add value to a design project?

How do you contribute to a group process in a meaningful way and create synergy?

What information helps to persuade others?

## Project-Focused Question

Can you design a "Disney Theme Park Attraction", that will increase attendance and increase revenue?

Can you design a roller coaster that that is exciting and safe?

How does research influence your "Disney Theme Park Design"?

How does research influence your roller coaster design?

How do math calculations help to evaluate your roller coaster design?

How do job roles impact your ability to get the "Disney Theme Park Design"? project finished?

Can you convince a committee that your "Theme Park Design" will increase attendance at the Disney Theme Park?

## STEPS OF PBL IMPLEMENTATION

by [Mohamed Elhassan Abdalla](#)

### Credit to:

[http://www.academia.edu/1215059/THE\\_SEVEN\\_STEPS\\_OF\\_PBL\\_IMPLEMENTATION\\_TUTORS\\_MANUAL](http://www.academia.edu/1215059/THE_SEVEN_STEPS_OF_PBL_IMPLEMENTATION_TUTORS_MANUAL)

(CC):The Seven Steps of PBL Implementation: Tutor's Manual by Mohammed Elhassan Abdalla and Abdelrahim Mutwake Gaffar is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License](#)

## Steps to Planning a PBL Project

Step 1: Develop a compelling topic that covers state standards, has an authentic connection to the local community, and provides opportunities for every student to do meaningful, independent research.

Step 2: Develop or design a comprehensive final product that each student will have a role in creating, and could be used by local residents or professionals in the field.

Step 3: Involve professional organizations and professionals from the community to connect the academic study with the real world, and have students assume these professional roles during the expedition so they get a sense of what it would mean to be professionally engaged in meaningful work.

Step 4: Identify and organize the major learning resources for the expedition, and make sure they're available. (This one is critical and is often left out by schools).

Step 5: Coordinate calendars. (This may be the hardest piece of all.) Expeditions are interdisciplinary and require a lot of planning to ensure that each piece flows smoothly from one to the next. They require enough time for each component to be done well, for

students to get time in the field, for experts to come in at the appropriate place, and for the final product to be high quality.

Step 6: Plan a final experience or culminating event. Showcase student work to the public or outside of school.

## Factors determine the successful functioning of PBL

Many factors are needed in order to achieve a successful PBL that leads to achievement of acquisition of retrieval knowledge.

Those factors are:

- 1) Prior knowledge: the amount of prior knowledge and activation of the prior knowledge in the discussion is very important determinant of the achievement and increasing the interest in the subject matter. The prior knowledge is one of the elements in the constructivism theory of learning
- 2) Quality of the problem: The well constructed problem will trigger and stimulate discussion and will increase the time spent in the tutorial group and in self study.
- 3) Tutor Behavior: The tutor that maintains the discussion to the context of the problem will increase the quality of the problem.
- 4) Student centeredness: Motivation of the students is increased when the learning is his/her responsibility. This will lead to application of the self determination for learning.
- 5) Team work: the well functioning team will lead collaboratively to efficiency in all steps of PBL process.
- 6) Group Dynamics: Group dynamic will ensure that every one is participating efficiently and effectively, this will lead to improve the team work.
- 7) Ground Rules: Organization is one of the principles of learning, ground rules are very important in maintaining the organization of the tutorial group and maintain group dynamic.

## Know the Difference Between PBL and Projects

[Andrew Miller](#) Educational Consultant and Online Educator (Thank you for permission to re-print

- This is the big one! I can't stress this enough!
- 
- With PBL, [the project itself is the learning](#), not the "dessert" at the end.
- 
- If you are doing projects in the classroom, you may or may not be doing PBL. In fact, many teachers think they are doing PBL, but are actually doing projects.

- 
- PBL-you are teaching through the project, not teaching and then doing the project.
- 
- Want a quick way to see if you're meeting the essential elements of PBL....Check the Buck Institute for Education's [PBL Project Checklist](http://www.bie.org/tools/freebies/project_essentials_checklist).
- [http://www.bie.org/tools/freebies/project\\_essentials\\_checklist](http://www.bie.org/tools/freebies/project_essentials_checklist)
- 
- Make sure that you are focusing on aspects such as inquiry, voice and choice, and significant content.

<http://www.edutopia.org/blog/project-based-learning-getting-started-basics-andrew-miller>

## Does the PBL Project . . . ?

- FOCUS ON SIGNIFICANT CONTENT
- DEVELOP 21st CENTURY SKILLS
- ENGAGE STUDENTS IN IN-DEPTH INQUIRY
- ORGANIZE TASKS AROUND A DRIVING QUESTION
- ESTABLISH A NEED TO KNOW
- ENCOURAGE VOICE AND CHOICE
- INCORPORATE REVISION AND REFLECTION
- INCLUDE A PUBLIC AUDIENCE

## A Simple Project-Based Learning Process

- 1. Brainstorm: This is where the students brainstorm problems, ways to solve those problems, and the logistics and limits of any solutions. And if the project isn't challenge-based—e.g., it is primarily creative in nature—brainstorming is still necessary to understand the problems, establish any goals, and identify audience, purpose, and available tools and platforms.
- 
- 2. Plan: The next step is to create a plan based on the above often . A second effect is a streamlining of things; whereas brainstorming is often messy and a bit chaotic (if it's honest), planning allows for prioritizing to occur, and separation for more and less important elements of the project.
- 
- 3. Collaborate: Though collaboration is possible during brainstorming and planning, it really comes into focus here, when the project comes to life. This can

also be thought of as the “Drafting” stage of the project where students research, write, design, create, revise, and fine-tune any products of the project, or the process of the project itself.

- 
- 4. Publish: Among technology’s greatest talents is the ability to make the classroom wall’s transparent. All project-based learning that features products of any sort have the potential—if not the right—to leave the school building and “perform” in the real world, creating a more authentic need-to-know in the students, and making thinking and learning “public” in the process.
- 
- <http://www.teachthought.com/learning/project-based-learning/15-tools-for-better-project-based-learning/>

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# Essential Elements of Project-Based Learning

<http://seonggoo.wordpress.com/2012/12/05/eight-essential-elements-of-project-based-learning/>

Article by Dayna Laur, who has been a high school social studies teacher for 14 years. She is a National Faculty Member for the Buck Institute for Education and an educational consultant and writer. This article originally appeared in TechEdge, a quarterly magazine published by Naylor LLC for Texas Computer Education Association members.

**You've asked yourself how to increase both the rigor and relevance of the project.**

## >>>> PBL - Driving Question-The driving question

The driving question of a project must be open-ended, engaging, and crafted so that the inquiry process is initiated. In today's world, if students can Google an answer, what's the point in building a project around it? Additionally, if a question posed sounds like an essay question on a test, it isn't going to prompt students to engage in inquiry.

### **I've had teachers ask:**

"What is the difference between essential questions (à la Understanding By Design) and driving questions?"

In my opinion, essential questions, when created to their utmost potential are driving questions.

**Driving questions are just essential questions that are high on caffeine.**

They demand authenticity and rigorous problem-solving, which essential questions *can* do, but don't always.

In addition, essential questions are often created to be more like enduring understands or learning targets.

Just because a question sounds interesting to you, it may not be to a student. Driving questions *must be accessible to the students and engage them*. I'm a big nerd, and so love learning. Enduring understandings and questions that mirror them appeal to me, but to the reluctant and marginalized students we are trying to reach, they are not. So remember, it's all about the students. Try testing out the driving question you have created on a student and see how they react. Will every student jump up and down about it? No, but we can at least have students say, "I guess that sounds cool."

# Effective Driving Questions

Driving questions are also called essential questions, project questions, and umbrella questions. **Effective** driving questions include the following features:

1. **Are open-ended.** Driving questions lead to debate and discussion, and therefore, are motivating to students
2. **Are objective.** Driving questions do not imply whether something is good or bad, better or worse.
3. **Focus and drive the project.** Students use the question as a springboard to formulate their own questions. All learning and research in the project are geared toward answering the driving question.
4. **Focus on key understandings.** Generally each project will have about five overarching ideas; the driving question subsumes all of them.
5. **Are answerable.** With diligence and dedication, students are able to answer the driving question. While it should not be an easy process, it should be manageable.
6. **Require research, investigation, and reflection.** Driving questions may have yes-or-no answers; however, your students need to support their answers with the research and knowledge they have acquired throughout the project.
7. **Call on a student's previous knowledge** and help students apply their learning to new situations.
8. **Link basic skills and concepts to students' lives and the real world.** Students are more motivated and involved when the topic they are studying is relevant to their lives and to the real world.
9. **Integrate standards from a variety of disciplines.** Interdisciplinary lesson plans promote teamwork among colleagues and encourage students to make connections between disciplines.
10. **Encourage multiple approaches to problem solving.** Driving questions allow for more than one way to solve a problem and express the solution.

## Are the examples below good driving questions?

- \_\_\_ How has immigration affected the United States?
- \_\_\_ How does the design of a rocket influence its speed and maneuverability?
- \_\_\_ How can we help our community understand the health risks of overeating?
- \_\_\_ How is geometry used in the real world?
- \_\_\_ How can we impact the environmental issues that affect our community?
- \_\_\_ How does reading affect our lives?
- \_\_\_ What responsibility do we have to the overall health or our environment?
- \_\_\_ Are all living things connected?
- \_\_\_ How do changes in the environment affect animals and plants?
- \_\_\_ Who are we and how do we affect our home and class/school community?
- \_\_\_ What role does math play in our daily lives?
- \_\_\_ Why should we care about what we eat?

## Rewriting Poorly Written Driving Questions

- ***What is epic poetry?***

Can be rewritten as:

*How do I write an epic poem about an important episode in my life?*

You will notice that the project will be more relevant and challenging. Yes, they will learn epic poetry, but in order to write about themselves.

- ***How have native peoples been impacted by changes in the world?***

Can be rewritten as :

*How do we create new policies to honor the culture of the Snoqualmie tribe while allowing for casinos?* Here the question is local. It also demands innovation for a complex task.

- ***How does probability relate to games?***

Can be rewritten as:

*How do we create a new gambling game to cheat people out of their money without them noticing?* Here the question is a bit subversive and quite engaging. Content about probability will be learned for an authentic purpose. A quick note, this question may not be culturally responsive, as it demands behavior that may be contrary to certain cultures. In that case, you might make the question, *How do we create a chance game to engage elementary students?*

- ***Why is science important and how can it help save people?***

Can be rewritten as:

*Should we allow for genetic engineering to prevent diseases and illnesses?*

Here the question is contentious and debatable, and it is focused on specific topics so that the scope isn't too large.

## **Craft a driving question for the project we will be working on.**

**Product-Oriented:** How do we create \_\_\_\_\_ to \_\_\_\_\_?

**Examples:** How do we as architects, design an outdoor classroom for our school?

**How do I as a scientist, design an experiment to debunk and common scientific myth?**

**The driving question is: (sample- good-bad-need work?)**

**How do we, as new "Disney Imagineers" design a safe, exciting, themed attraction with an interactive "Queue" to increase attendance and "Theme Park" revenue.**

## **S.T.E.A.M./S.T.E.M.**

Technically speaking, S.T.E.M. stands for Science, Technology, Engineering and Math. That definition doesn't even begin to do it justice. Those of us who live S.T.E.M., have realized that the vision conjured up by those words are nowhere near indicative of the excitement those subjects invoke. Unofficially, S.T.E.M. is the declaration that we, as a population, need to bring creativity, passion and art to our academics. The STEM movement is a progression toward blended learning and teaching students how to integrate the scientific method into their everyday lives. It's the passionate manifesto that computational thinking needs to begin right along side shapes and phonics. STEM is the realization that math is embedded into the beauty of a daisy and the functionality of the placement of its leaves.

STEM education creates critical thinkers, increases science literacy, and enables the next generation of innovators. Innovation leads to new products and processes that sustain our economy. This innovation and science literacy depends on a solid knowledge base in the STEM areas. It is clear that most jobs of the future will require a basic understanding of math and science—10-year employment projections by the U.S. Department of Labor show that of the 20 fastest growing occupations projected for 2014, 15 of them require significant mathematics or science preparation.

President Barack Obama has declared we need to increase student achievement in mathematics and science and expand STEM education and career opportunities to underrepresented groups, including women. In a speech at the National Academies of Science last April, Obama said, "Reaffirming and strengthening America's role as the world's engine of scientific discovery and technological innovation is essential to meeting the challenges of this century.

## Resources - Projects - Collaborative - P.B.L.

- <http://www.internet4classrooms.com/project.htm>

Websites offer free project based learning examples, lesson plans, design guidance, ideas, and templates.

### **PBL lessons for math, science, language arts, and social studies into lists.**

(Live links below)

[PBL Language Arts Projects by grade level](#)

[PBL Science Lesson Ideas by topic](#)

[PBL Math Project Ideas by topic](#)

[PBL Social Studies Project Ideas by grade level](#)

## Roller Coaster Physics

In this *Teaching Channel* video, join STEM teacher Donna Migdol as she teaches her students problem-solving skills using a real-life roller coaster design challenge.

<http://www.pbslearningmedia.org/resource/tch12.sci.phys.stem.rollcoast/roller-coaster-physics/>

## **STEM Resources to Inspire Girls**

- [Engineer Girl](#) - National Academy of Engineering (NAE)- designed to bring national attention to females in engineering-prospect of a career in the field. Information on engineering-related competitions, contests, and scholarships; advice from successful female engineers on “how to get there”; and links to a variety of other relevant resources.
- [STEM Equity Pipeline](#) - National Alliance for Partnerships in Equity Education Foundation- attracting more females to S.T.E.M. fields – as well as attracting boys and men to traditionally female careers (such as healthcare and teaching). Particularly helpful are their:
  - [Links to publications and other resources focusing on promising practices](#);
  - 
  - [Archived webinars on a variety of topics](#).
  - 
  - [National Girls Collaborative Project](#)

Organizations throughout the U.S. that are committed to informing and encouraging girls to pursue careers in STEM. The NGCP page on [Engaging Girls in STEM](#) -links to a variety of valuable projects, reports and webinars

## 29 Games Kids Can Play to Try Engineering

- <http://www.tryengineering.org/>
- [Try Engineering](#)
- Site that hosts lesson plans and games
- Designed to get students interested in engineering.
- [Lesson plans](#) -114 in all
- Arranged according age and engineering topic. Can be downloaded as PDFs.

### Educator Building Blocks-Building Foundational Knowledge



#### Watch THIS Video

: GREAT STEM DEMO

<sup>16</sup>. PBS LearningMedia™ Video Image.  
MP4 file

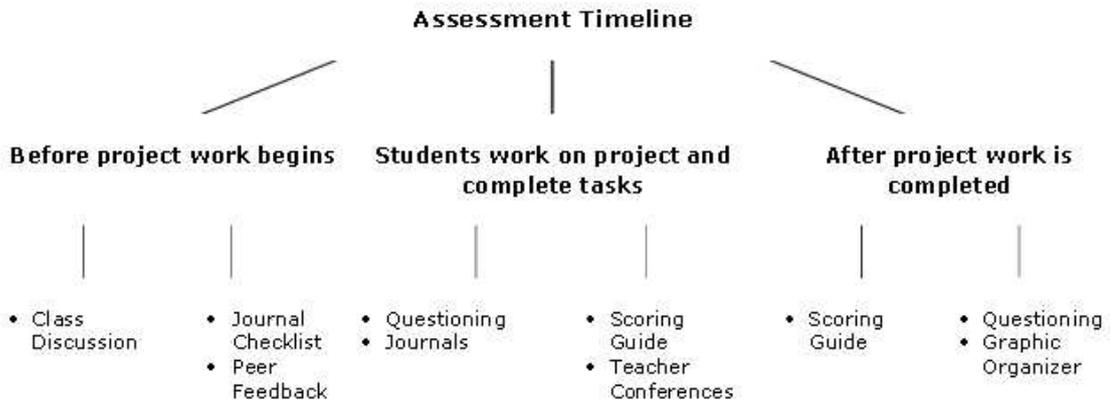
<http://www.pbslearningmedia.org/resource/tch12.sci.phys.stem.rollcoast/roller-coaster-physics/>

#### Discussion Questions:

- How does Ms. Migdol integrate real world challenges like computer modeling and budgeting into the design challenge?
- 
- How does having students apply their physics knowledge to an engineering problem help to create better overall problem solvers?
- 
- What aspects of the design challenge helped Ms. Migdol assess her students? Can you think of additional creative opportunities to assess how students are doing in your own classroom?

# Assessment Process (Sample from Flat Stanley Project)

## Flat Stanley Assessment Plan



Students use the scoring guide to help guide their learning, stay on track, and self-assess their progress. This scoring guide is also used by the teacher to assess student work. Questioning and conferences are used throughout the unit to help students develop their higher-order thinking skills and process content. A journal checklist is used during peer conferences to help guide feedback on journal entries and use for future entries. A final graphic organizer is used to assess learning.

## Project Based Learning Rubric and Checklist Links

- <http://pblchecklist.4teachers.org/index.shtml>

**#1: PROBLEM SOLVING RUBRIC**

Student	1 Limited	2 Developing	3 Proficient	4 Advanced	5 Exemplary	Self	Team
Identifies Relevant Facts ("What do we know?")	Cannot identify facts, or mixes facts with opinions.		Identifies most relevant facts.		Helps distinguish facts from opinions/inferences.		
Asks Relevant Questions ("What more do we want to know?")	Asks no questions or ones unrelated to script.		Asks basic kinds of "who, what, where, when" questions.		Asks higher-level questions which reflect depth of thought.		
Organizes Questions for Research	Is unable to organize questions into categories.		Organizes questions into appropriate categories.		Identifies questions that fit into multiple categories.		
Selects Useful Information from Appropriate Sources	Cannot locate information to answer research questions.		Obtains relevant information from key sources provided.		Obtains reliable and wide-ranging information from sources beyond those provided.		
Organizes and Presents Information Effectively	Does not organize information to clearly present answers to research question(s).		Organizes information to clearly present answers to research question(s).		Summarizes information from many sources; presentation is concise, accurate, and insightful.		
Identifies Major Problem(s) and Stakeholders	Cannot state a major problem or identify important stakeholders.		Identifies major problem and major stakeholders.		Distinguishes between major & minor problems; identifies direct & indirect stakeholders.		
Develops Multiple Solutions to Major Problem(s)	States only one (obvious) course of action to major problem.		Develops two or more solutions to the major problem(s).		Develops multiple solutions based on pros/cons and stakeholder perspectives.		
Chooses a Course of Action and Supports Choice	Cannot select or support a course of action.		Selects and supports a course of action based on ethics or risks/benefits to one stakeholder.		Selects a solution based both ethics and risks/benefits to multiple stakeholders.		

- <http://www.tcet.unt.edu/START/assess/rubrics.htm>
- <http://www.idecorp.com/assessrubric.pdf>
- <http://rubistar.4teachers.org/index.php> RubiStar is a free tool to help a teacher make quality rubrics.
- <http://www.rubrics4teachers.com/> Samples of a variety of rubrics
- [http://www.bie.org/pbl/pblhandbook/BIE\\_PBLrubrics.pdf](http://www.bie.org/pbl/pblhandbook/BIE_PBLrubrics.pdf) Creating Rubrics for assessing projects and information literacy

>>> The above information will introduce you to the project. Read over the information on the next page and discuss with your students.

Students will be forming teams in Chapter 3 to complete the following components of the project. Each one will choose a specific job. It is the students responsibility to complete the task for that job, making sure it supports the other job roles.

Each team member contributes to the final presentation given to a committee from the "Disney Imagineers Team".

About the Author-Max Beaudry is a theme park aficionado with a special love for Disney parks. He is a contributing author for the [Walt Disney World Blog, Monorail Musings](#), at the ParkGopher.com website. ParkGopher.com provides info and reviews for theme parks including Universal, Busch Gardens, and Disney, including [Walt Disney World hints and tips](#).

Article Source: <http://www.articlesbase.com/travel-articles/what-is-the-difference-between-a-theme-park-and-an-amusement-park-4381743.html>

# Requirements of the PBL Project:

## Disney Theme Park Attraction Design Team Tasks

**1. Organizing a Team** - select your team members based on their skills. You need: 5-6 members that can: Direct and manage the group; Disney expert; Researcher - Google/search expert; Mind Mapper/Brainstorming; Computer-skills expert/Presentation; Art Designer; Story Teller; Engineer; Model Builder- Sketchup; Audio-Music editor; Recorder-note taker

**2. Blue Sky** - the name that Imagineers give to the theoretical planning process--the bouncing around of ideas about how to design, why to design and what to design. The idea board stage of Imagineering. Group will brainstorm ideas for theme park attractions-always keeping in mind the story line for the attraction. Sketch the overall attraction and then the individual segment. Queue - Interactivity -Type of ride-Story-Music/Audio- Surprise element- "Weinie" etc. Evidence of vision-what would happen if....Could we...Maybe we could.. or how about? What park will the attraction best fit in?

**3. Storytelling** - Evidence of Inspiration, creativity, creative space, Story Weaving, Development, Exposition Plan (what your story is about), Goals and Story Mechanics. Moves on to the storytelling phase--unlike most theme parks, Disney prides itself on telling stories throughout its entire enterprise. This can also encompass or lead into a research and development phase.

**4. Research** - Evidence of research and writing skills, search for knowledge, any systematic investigation to establish facts. Know how to Define the task, Locate information, Select resources, Organize notes and present the ideas. Discover who the individuals are that design, build and operate the Disney Theme Parks by researching, checking patent ideas, what has worked in the past-What's NEW today. What music might work-locate audio file and mp3 audio.

**5. Design - Architect - Models** - Design is the most lengthy, because it involves exceptionally detailed and technical planning. Evidence of descriptive writing, -sketches, drawing, rendition, topography, location of ride design of track and car, slope and model building. This is where the "engineer" part of "Imagineering" starts to come into play. Computer and 3D models are constructed to make the ride move from idea to reality.

**6. Testing** - Laying the Groundwork. Students engage in preparation activities that set the stage for the learning ahead. Expanding Knowledge. Mini-experiences in each of job roles Mini-Engineer Experience-Students test design ideas using online simulations and then create Marquette's (small model of an intended work) , or 3-D models of a theme park attraction, ride or coaster design.

**7. Engineering** -Evidence of technical writing skills, model building, construction, design, audio, video and multimedia. The team then takes the models and story and makes it all into a physical reality, building the ride. All of the following come into play: Creative People; Technical People; Systems Engineers; Project Engineers; Mechanical Engineers; Architectural Engineers; Structural and Civil Engineers; Ride Control Engineers; Show Control Engineers; Audio/Video Engineers; Lighting Designers; Special Effects Designers; Finance

**8. Effects** -How will the theme, story, design , music, lighting, sound and special effects all fit into the attraction?

**9. Closeout** - The ride is extensively tested and checked from every point, angle, location and experience. Once the testing is satisfied, it's time for closeout, where everything is finalized and the Imagineers move on to their next project. Evidence of project management, attention to details, checklists, quality assurance and report writing.

**10. Summative Assessments/Public Relations**-Evidence of persuasive writing skills, Presentation skills , Multimedia presentation software. Each person in the group MUST provide a section of the final presentation.

# MLA Works Cited: Electronic Sources (Web Publications)

As you students discover the data make sure you reference on how to site Web address when reporting statistics and information

## MLA lists electronic sources as Web Publications.

Thus, when including the medium of publication for electronic sources, list the medium as Web.

It is always a good idea to maintain personal copies of electronic information, when possible. It is good practice to print or save Web pages or, better, using a program like Adobe Acrobat, to keep your own copies for future reference. Most Web browsers will include URL/electronic address information when you print, which makes later reference easy. Also, you might use the Bookmark function in your Web browser in order to return to documents more easily.

## Internet Search Engines.

For instructors or editors who still wish to require the use of URLs, MLA suggests that the URL appear in angle brackets after the date of access. Break URLs only after slashes.

Aristotle. *Poetics*. Trans. S. H. Butcher. The Internet Classics Archive. Web Atomic and Massachusetts Institute of Technology, 13 Sept. 2007. Web. 4 Nov. 2008. <<http://classics.mit.edu/>>.

## Basic Style for Citations of Electronic Sources (Including Online Databases)

Here are some common features you should try and find before citing electronic sources in MLA style. Not every Web page will provide all of the following information. However, collect as much of the following information as possible both for your citations and for your research notes: Author and/or editor names (if available) Article name in quotation marks (if applicable)

## Title of the Website, project, or book in italics.

(Remember that some Print publications have Web publications with slightly different names. They may, for example, include the additional information or otherwise modified information, like domain names [e.g. .com or .net].)

Any version numbers available, including revisions, posting dates, volumes, or issue numbers.

Publisher information, including the publisher name and publishing date.

Take note of any page numbers (if available).

Medium of publication. Date you accessed the material.

URL (if required, or for your own personal reference; MLA does not require a URL).

## Citing an Entire Web Site

It is necessary to list your date of access because web postings are often updated, and information available on one date may no longer be available later. If a URL is required or you chose to include one, be sure to include the complete address for the site. (Note: The following examples do not include a URL because MLA no longer requires a URL to be included.)

Remember to use n.p. if no publisher name is available and n.d. if no publishing date is given.

Editor, author, or compiler name (if available). Name of Site. Version number. Name of institution/organization affiliated with the site (sponsor or publisher), date of resource creation (if available). Medium of publication. Date of access.

The Purdue OWL Family of Sites. The Writing Lab and OWL at Purdue and Purdue U, 2008. Web. 23 Apr. 2008.

Felluga, Dino. Guide to Literary and Critical Theory. Purdue U, 28 Nov. 2003. Web. 10 May 2006.

## A Page on a Web Site

For an individual page on a Web site, list the author or alias if known, followed by the information covered above for entire Web sites.

Remember to use n.p. if no publisher name is available and n.d. if no publishing date is given.

"How to Make Vegetarian Chili." eHow. Demand Media, n.d. Web. 24 Feb. 2009.

An Image (Including a Painting, Sculpture, or Photograph)

Provide the artist's name, the work of art italicized, the date of creation, the institution and city where the work is housed. Follow this initial entry with the name of the Website in italics, the medium of publication, and the date of access.

Goya, Francisco. *The Family of Charles IV*. 1800. Museo Nacional del Prado, Madrid. Museo Nacional del Prado. Web. 22 May 2006.

Klee, Paul. *Twittering Machine*. 1922. Museum of Modern Art, New York. The Archive. Web. 22 May 2006.

If the work is cited on the web only, then provide the name of the artist, the title of the work, the medium of the work, and then follow the citation format for a website. If the work is posted via a username, use that username for the author.

brandychloe. "Great Horned Owl Family." Photograph. Webshots. American Greetings, 22 May 2006. Web. 5 Nov. 2009.

## An Article in a Web Magazine

Provide the author name, article name in quotation marks, title of the Web magazine in italics, publisher name, publication date, medium of publication, and the date of access. Remember to use n.p. if no publisher name is available and n.d. if no publishing date is given. Bernstein, Mark. "10 Tips on Writing the Living Web." *A List Apart: For People Who Make Websites*. A List Apart Mag., 16 Aug. 2002. Web. 4 May 2009.

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# Chapter 3: Project Overview & Pre-Assessment

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## **Request for Proposals** (R.F.P.)

The owners of Walt Disney World Theme Parks are seeking proposals for a new "Theme Park Attraction". This "Theme Park Attraction", must thrill riders young and old with unique design features that incorporate the best in safety and engineering while providing an unforgettable experience and story.

It's no secret that the Walt Disney World has experienced a decline in attendance and revenue over the past 18 months. We are in desperate need of a new high-interest "Theme Park Attraction" that will increase attendance and revenue for the parks.

Our goal is to attract families that will attend our new "Theme Park Attraction" and tell a "NEW Backstory " about an exciting and engaging attraction, that will include an "Interactive Queue".

The future of the "Disney Theme Parks" depends on your creativity, ingenuity, and innovation.

We will accept proposals in five weeks. Complete proposal criteria available upon request — serious inquiries only.

**The Management, Walt Disney World Theme Parks**  
-----

# Successful Project Design

At the conferences that I provide workshops to, I connect with many teachers who “do projects,” When they describe their “PBL Design” ,I discover that not all projects lead to learning.

My goal in the workshop is to make sure they leave with methods and design to use “Project Based Learning”, effectively with their students (rather than simply “do projects”)

In the “Design a Disney World Theme Park Attraction” workshop I make sure that:

1. Projects meet today’s standards for accountability.
2. I teach students the academic content and the 21st century skills they need for life success.
3. I apply Science, Technology, Engineering and Math to the concepts.



## TEACHER BENEFITS

- Bonds the classroom through teamwork
- 
- Keeps students focused
- 
- Empowers students, motivating them and instilling a sense of self-direction
- 
- Reduces lecture time, allowing increased hands-on learning
- 
- Provides time for individualized instruction

<sup>12</sup> Disney World. Personal photograph by Howie DiBlasi. 4-28-2012

## Five stages of "Disney Dreaming" -Attraction/Thrill Ride

\*Following was provided by Intel® Education and has been modified to reflect the project in the "Disney" modified form.

### Stage 1: Accessing prior knowledge about Disney theme park attractions, rides and coasters.



The unit begins with a short class introduction to inform students about the project and get them excited about what's ahead. Following the class introduction students will explore building blocks, to determine what they know and what they do not know about Disney Theme Parks. Information will be explored on why to pre-assess and the various types of assessment for the PBL project. Individuals will build their knowledge base and begin project-related work in each subject area class that draws upon what they already know or have experienced related to Disney Theme Park Attractions, other parks and coasters. The session concludes on how Walt Disney World creates new attraction/rides.



**Stage 2: Investigating to build foundation knowledge about Disney theme park attractions, rides and coasters.** Students engage in mini architect (math), engineer (science), public relations (language arts), and researcher (social studies) tasks that prepare them for the group design challenge in Phase Five. In addition the students will build foundation knowledge and understanding about Disney theme park attractions, rides and coaster design during the time allotted to

view seven videos on theme park design and development by Disney Imagineers. Brainstorming and collaboration tools will be explored. The design team will be created to include: Director; Disney expert; Researcher; Mind Mapper; Computer-skills expert; Art Designer; Story Teller; Engineer; Model Builder; Audio-Music editor; Recorder-note taker; Public Relations.



**Stage 3: Expanding knowledge of Disney theme park attractions, rides and coaster design from investigations.** Students explore the type of attractions, and investigate each for the four Disney parks and the rides and attractions. Students develop research skills in curriculum content area, learn about technical reading and writing, creating the story, explore storyboards, utilize Web 2 tools, and conduct experiments presenting and rehearsing the "Pitch".

**Stage 4: Applying knowledge to the design and construction of Disney theme park attractions, rides and coaster models using their mini architect and engineer experience.** Students will create 3D design, sketches and build models of their "Theme Park Attraction and Story". Students experience and connect their new understanding about Disney theme park attractions, rides and coaster design during a virtual field trip via video conference with a "Disney" Imagineer.



**Stage 5: Contributing knowledge to a group about Disney theme park attractions rides and coasters.** Student teams prepare a Disney theme park attraction, ride and coasters design proposal to an authentic audience. Regular schedules and classes are abandoned as students take on one of twelve jobs on the design team: Director; Disney expert; Researcher; Mind Mapper; Computer-skills expert; Art Designer; Story Teller; Engineer; Model Builder; Audio-Music editor; Recorder-note taker; Public Relations.

<sup>13</sup>. All images this page-Walt Disney Company. <http://thewaltdisneycompany.com/> JPEG file

# Activities For Educators: Assessment Credit to (<http://teach.fcps.net/>)

## 1. ) Why Pre-assess?

Pre-assessment plays a critical role in your ability to differentiate instruction. You administer pre-assessments before you begin the instruction in a curricular unit in order to gain an understanding of what your students know, understand, and are able to do. Without pre-assessment, you do not know the preparedness of your students for new learning, the specific learning differences amongst your students, or where to begin devising new curriculum goals (Heacox, 2009). It is a way to determine what students know about a topic before it is taught. It should be used regularly in all curricular areas

- To make instructional decisions about student strengths and needs
- To determine flexible grouping patterns
- To determine which students are ready for advance instruction

<http://www.fcpsteach.org/docs/pre-assessment.pdf>

## 2.) Purposes for Pre-assessment:

- Differentiate Instruction
- Guide whole-group instruction
- Plan learning activities that address varying levels of readiness
- Determine which students have/have not achieved mastery of specific objectives
- Identify problems that might cause students difficulty with mastery of an objective
- Form flexible groups
- Determine master level of individuals or small groups

<http://www.fcpsteach.org/docs/pre-assessment.pdf>

## Strategies for Pre-assessment

### Formal Pre-assessment Strategies

- Publisher-developed paper/pencil, software, or online formats
- Teacher-developed paper/pencil or online formats
- Journal prompts
- Written responses
- Structured observations
- Student demonstrations
- Student interviews

### Informal Pre-assessment Strategies

- Observations
- Conversations
- Directed questions
- Pre-assessment webs
- Walkabouts
- Knowledge bar graphs

- Check-in slips
- Visual organizers
- KWI
- Pre-assessment carousel
- Teacher email or text messages

This is a great website with differentiating ideas and pre-made assessments

<http://daretodifferentiate.wikispaces.com/Pre-Assessment>

## **What is Formative Assessment?**

Formative Assessment is assessment FOR learning. Formative assessment is part of the instructional process. When incorporated into classroom practice, it provides the information needed to adjust teaching and learning while they are happening. It relies on constant feedback. Learning is enhanced when feedback is given based on product, process, and progress (Fluckiger, 2010). By involving students with feedback and formative assessments, it allows students to be a part of the learning environment and to develop self-assessment strategies that will help with their own metacognition.

## **Strategies for Formative Assessment**

Formal

Quizzes

Daily work

Demonstrations

Work samples

Portfolio reviews

Sketches, drawings, diagrams

Logs, records, journals

Drafts

Graphic organizers

Exit slips

Preview/Review

### **Informal**

Directed questions

Systematic observation

Discussion reflections

Homework scans

Grade scans

“thumbs” assessment

Card signals

White board demonstrations

Critical reflection stems

Student self-evaluation with rubrics/checklists

These websites have additional assessment strategies, along with explanations on how to implement the

strategies: <http://www.scribd.com/doc/11583669/Formative-Assessment-Ideas>

<http://www.lincoln.k12.or.us/Files/Formative%20Assessment%20Strategies.pdf>

Contributions to <http://totallytremendousteachers.wikispaces.com/> are licensed under a [Creative Commons Attribution Share-Alike 3.0](https://creativecommons.org/licenses/by-sa/4.0/)

# Activities For Students:

**Pre Assessment:** What Do I Know and Not Know About **Disney Theme Parks**

**Activities:** Prior to watching a series of video about the top 8 Disney Theme Park Attractions, students are asked to think about their past experiences and understanding of Disney Theme Park Attractions.

**Accessing prior knowledge about Disney theme park attractions, rides and attractions**

**Q: Where are Disney parks located -**

Name the Six Disney Parks and their locations around the WORLD

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

## Disney Parks

- 2.1 Disneyland Resort
- 
- 2.2 Walt Disney World Resort
- 
- 2.3 Tokyo Disney Resort
- 
- 2.4 Disneyland Paris
- 
- 2.5 Hong Kong Disneyland Resort
- 
- 2.6 Shanghai Disney Resort

## **Accessing prior knowledge about Disney theme park attractions, rides and attractions**

### **Knowing what I know and what I don't know: ( PLAY 26 questions**

1. Define the term 'Amusement Park'
2. Define the term 'Theme Park'
3. The difference between a theme park and an amusement park is \_\_\_\_\_
4. Describe the difference between Walt Disney World and Disneyland
5. Name the Theme parks at Walt Disney World
6. Name the lands at "Disneyland"
7. Name ten type of attractions/rides (an example would be a rail or gravity ride )
8. What is a Disney "Imagineer"?
9. What does a Disney "Imagineer" do?
10. Why is " Storytelling " a big part of a "Themed" attraction?
11. What is a "Backstory"
12. Name an attraction and tell about the "Backstory"
13. What is the "Queue"
14. What is an "Interactive Queue?"
15. What does it mean to "PLUS" the attraction?
16. What is a "Wenie" in Disney terms?
17. Describe what "Animatronics" is
18. What role does "Animatronics" play in attractions ?
19. Give an example of a "Animatronics" figure and the attraction it is in
20. Describe what "Audio-Animatronics" is
21. Give an example of a: " Audio-Animatronics" figure and the attraction it is in
22. Give an example of a: "DARK RIDE" at a Disney Park
23. Give an example of a: "BOAT RIDE" at a Disney Park
24. Give an example of a: "GRAVITY RIDE" at a Disney Park
25. Give an example of a: "SIMULATOR RIDE" at a Disney Park
26. What is Blue Sky?

## **Knowing what I know and what I don't know**

### **Interactive Queue-What are interactive queues?**

Interactive queuing system is one that will keep guests entertained while they wait for one of the park's attractions.

#### **Information and background**

### **Walt Disney World - A Reason to Wait in Line**

by Denise Preskitt

For many guests, waiting in line for attractions at [Walt Disney World](#) is a necessary evil. Disney's FASTPASS allows guests to bypass some of the long lines, but Disney is now adding interactive queue elements that many may find to be nearly as much fun as the attractions themselves! Interactive queues are not new to Disney - but they aren't common either.

Disneyland has the immersive Indiana Jones Adventure ride, and I'm happy to stand in it's painstakingly themed queue which includes interactive elements that run through it. The queue truly feels like an extension of the ride.

A few months ago, Walt Disney World opened a fully immersive queue at the Many Adventures of Winnie the Pooh. The tree that was formerly the centerpiece of the Pooh playground (which closed to allow for the Fantasyland expansion) is now sitting in front of the attraction, and young guests can still enjoy the small play area inside. The queue consists of many features, including Gophers that shoot out from their holes when you step on the corresponding animal print on the ground!

Haunted Mansion : The best reason to walk through the entire queue? Hunny walls! create music, and books that slide in and out from a library wall. There is a pipe organ that can be played by touching the keys, with the song "Grim Grinning Ghosts" emanating from it. Tombstones that used to be in the graveyard to the left of the Haunted Mansion entrance are now scattered throughout - some are close enough to touch. Master Gracey's tombstone is given a place of honor near the Sea Captain, with a little patch of grass that even has it's own sprinkler! It's a worthy addition to a classic ride.

### **What are Themed queues?**

Themed queues are the lines that have lots of details worth paying attention to.

We like to view [queues] as the first scene in the story, whatever the story of that particular attraction is," said Joe Garlington, creative vice president of Interactives at Walt Disney Imagineering, which develops [Disney](#) parks and resorts.

The line to one popular attraction at Epcot features cameras and large interactive screens that allow visitors to see themselves and play games, such as trying to burst virtual water balloons to reveal a hidden image, Garlington said.

People waiting in line for a comedy show at Walt Disney World are asked to text message jokes that may be used during the main event.

"It works as our warm-up act essentially for the show, but it also takes time while people are working through that and so it keeps them entertained while they're waiting," Garlington said.

"We do study the psychology, try to understand what our guests are thinking and make sure that we're keeping them happy as they move through the lines."

Disney employs more than 75 industrial engineers who help the company with queue management at its parks around the world, said Marilyn Waters, director of media relations at Walt Disney Imagineering.

>>>>>> Allow 30-45 min for the following activity

**Interactive Assignment** ( Allow one class period for four small group discussions and one large group reports

### **WHAT CAN WE LEARN FROM THE PAST, TO HELP INFORM THE FUTURE?**

(Following Information/data provided courtesy of Steve Alcorn web site and his 2 books)

## **Epcot: Walt Disney World - October 1, 1982**

EPCOT Center was constructed for an estimated \$800 million to \$1.4 billion and took three years to build (at the time the largest construction project on Earth). Covering an area of 300 acres (120 ha), it is more than twice the size of the Magic Kingdom. The parking lot serving the park is 141 acres (57 ha) (including bus area) and can accommodate 11,211 vehicles.

### **Issues at opening day:**

**8:00 AM-** Card Walker gives opening dedication speech to 250 "first family", special invited guests, press and media. Due to space limitations, only press, special guests, and a hand- selected "first family" had been allowed inside the park to witness the dedication ceremony.

At the same time, fireworks were starting to brew about 100 yards away.

2,000 guests wait outside in 89-degree heat and humidity. Some guests booed through the front gate because they could not participate in the opening dedication.

The thousands of real guests were left in the sweltering parking lot.

Many complained. They thought that Disney should at least have set up a big television screen and loudspeakers.

Ninety minutes after the gates opened, a wheel in one of the cars on Spaceship Earth missed a cam and shut the attraction down.

About 200 guests were evacuated and the vehicle had to be "jogged back into the system" before the ride could restart. The park's signature attraction was closed for two hours, and then broke down again a few hours later.

Later in the morning, about 2,000 people were emptied from the Universe of Energy when a car suddenly stopped. The car was repaired, but the show halted again moment later when one of the attraction's twelve movie projectors broke down.

- Shortly afterward, the Circle Vision movie in Canada also went down.
- Then came the "lunch rush."
- Crowds swarmed every eatery.
- Several restaurants ran out of food - Lines grew to 30 minutes.
- Ale at the English pub ran out
- 45 minutes for a pastry at the French bakery.
- The sit-down restaurants filled up so fast, they stopped taking reservations.

### **Into the afternoon, the problems mounted.**

- The down escalator quit working at the Imagination pavilion.
- In the World of Motion, the cars kept stopping and restarting. -The sound equipment

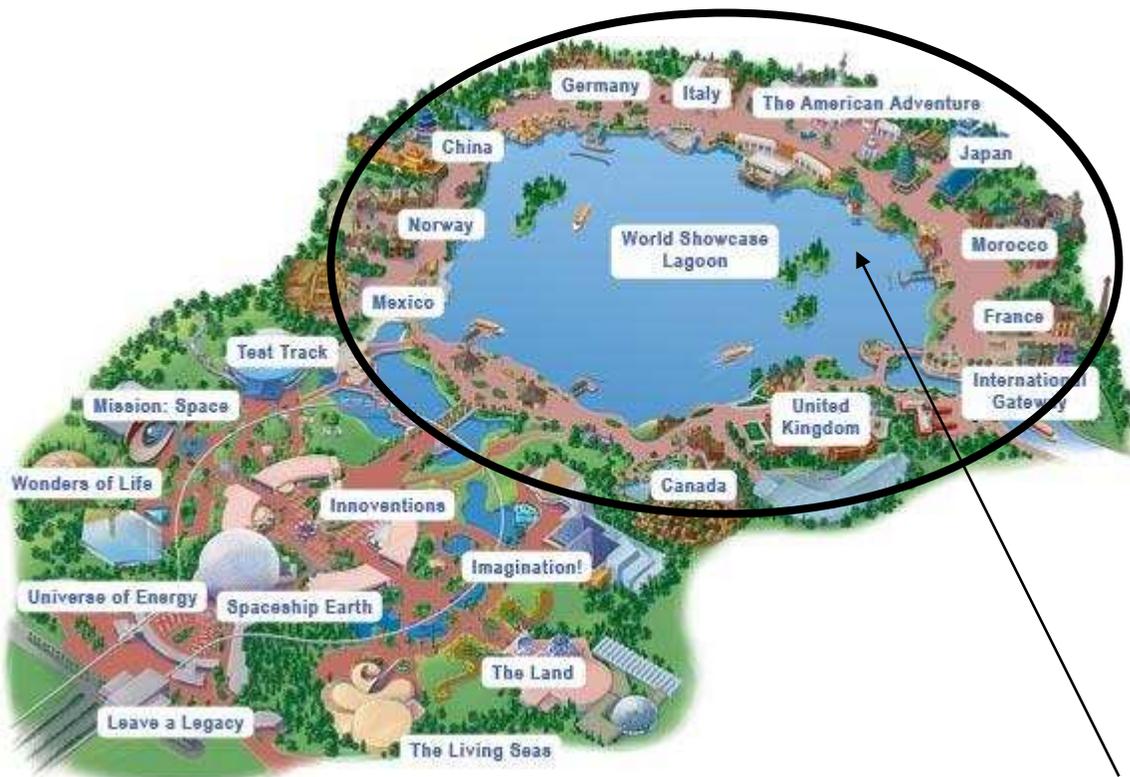
performed just as poorly. Sometimes, the narration was garbled; other times it played too fast or was totally inaudible.

By this time, cast members were permanently positioned in front of the Energy pavilion to inform guests that the ride would reopen in two hours.

Every performance at the American Adventure was different, because its computer system was not yet fully integrated; forcing Imagineers to stand under the stage and physically operate parts of the show.

The Mexico boat ride, which was not expected to even be completed by opening day because it required so much electrical work, was one of the few attractions that didn't break down.

<sup>12</sup>. Disney World Map. Personal photograph by Howie DiBlasi. 4-28-2012



Guests were also physically exhausted: A stroll just around the lake was over a mile long.

As the afternoon sun grew hotter, so did the guests. Visitors could be overheard grumbling about the constant breakdowns, the long lines, and boycotting EPCOT" to get their \$15 admission refunded.

They thought it was outrageous that they had to, pay a cover charge to spend the day doing nothing but standing in endless lines.

EPCOT Center had a fraction of the attractions of the Magic Kingdom yet twice the acreage, and therefore required an inordinate amount of walking.

Disney didn't release official attendance figures, but the outside estimate was upwards of 25,000 - nearly twice the number of expected guests.

## **Solutions and Statements:**

List the main problems:

Group the problems- i.e. Food, PR, Ride etc.

Solution to the problems - list problem and solution

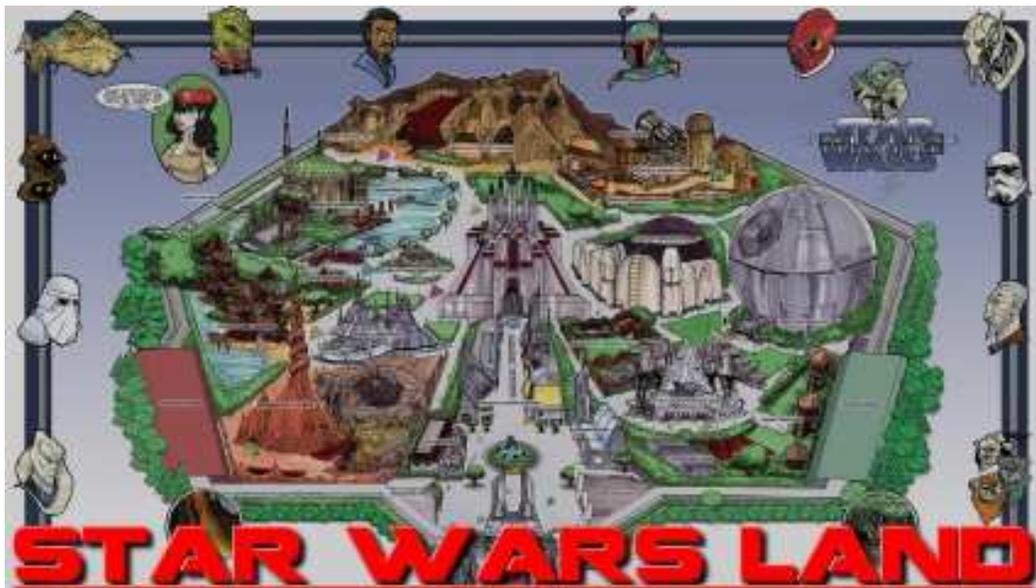
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# Chapter 4.

## Expanding knowledge

**Stage 3: Expanding knowledge** of Disney theme park attractions, rides and coaster design from investigations. Students explore the type of attractions, and investigate each for the four Disney parks and the rides and attractions. Students develop research skills in curriculum content area, learn about technical reading and writing, creating the story, explore storyboards, utilize Web 2 tools, and conduct experiments presenting and rehearsing the "Pitch".

Disney - Ultimate Attraction Guide - Example	pg 53
Program details - 10 Stages -Team Tasks	pg 54
Crafting our ideas-"Themed Attraction: BLUE SKY-Sample Ride/Attraction POV	pg 55
<b>Final Presentation must include the following:</b>	<b>A-pg 56</b>
Disney Theme Park Attraction "At-a-glance" (Content areas)	pg 57



# Disney - Ultimate Attraction Guide

©Disney. All rights reserved . All content and sample illustrations provided by WED Imagineering and Walt Disney Company. **NOTES:** The sample descriptions below are examples of a PR description to draw park attendees to your attraction. You will create this in [Chapter 6](#).

## Expedition Everest - Legend of the Forbidden Mountain®



Carren through the Himalayan mountains on a speeding train while avoiding the clutches of the mythic Abominable Snowman.

**Beware the Legend** - Folklore has it that a fierce guardian monster protects the Forbidden Mountain.

For years, the Royal Anandapur Tea Company shipped its tea by train through the Forbidden Mountain pass. After a series of mysterious accidents were blamed on the dreaded Yeti monster, the railroad closed. Today, the railway is operating again, thanks to a group of local entrepreneurs—Himalayan Escapes, Tours and Expeditions— who offer curious travelers transportation to the base camp on the scenic mountain.



Yet there are some who believe the legend to be true and that the Yeti will do everything in its power to protect the sacred realm of the Himalayas. Visitors beware.

**Climb the Mountain** - Embark on a thrilling expedition through the icy peaks of the Himalayas.

Venture inside a Tibetan-style stone structure at the foot of towering Mt. Everest and make your way past the booking office of Himalayan Escapes – Tours and Expeditions. Wander past a small temple and a cozy general store before exploring a museum dedicated to the study of the Yeti, the mysterious snow monster said to inhabit the Himalayas.



**The Adventure Begins** - Board a weather-beaten train and ascend a series of rolling hills overlooking a serene green forest. Climb a steep incline and navigate through a ceremonial stone tunnel before reaching the summit. Once at the “top of the world,” hold on tight as you pick up speed and race inside the dreaded mountain.

**An Unexpected Encounter** - Without warning, your train screeches to a halt: A broken and twisted track appears in front of you. Brace yourself as your train unpredictably begins to race

backward into the darkened mountain, furiously swooping up into a double-looping turn. Inside the windswept passage, the shadowy figure of a growling creature can be seen on a cavern wall. It is the Yeti—the legend is real.

Hurl 80 feet down the base of the cursed mountain and swoop in and out of murky caves and along jagged rocky ledges as you race to escape the dreaded monster before he catches up with you. Will you make it back to civilization safely?

**Or will the Yeti claim another victim?**

All images this page-5. Magical Getaway. WDW images. [www.magicalgetaway.com/](http://www.magicalgetaway.com/) JPEG file

# >>> Requirements of the PBL Project: Disney Theme Park Attraction Design Team Tasks

**1. Organizing a Team** - select you team members based on their skills. You need: 5-6 members that can: Direct and manage the group; Disney expert; Researcher - Google/search expert; Mind Mapper/Brainstorming; Computer-skills expert/Presentation; Art Designer; Story Teller; Engineer; Model Builder- Sketchup; Audio-Music editor; Recorder-note taker

**2. Blue Sky** - the name that Imagineers give to the theoretical planning process--the bouncing around of ideas about how to design, why to design and what to design. The idea board stage of Imagineering. Group will brainstorm ideas for theme park attractions--always keeping in mind the story line for the attraction. Sketch the overall attraction and then the individual segment. Queue - Interactivity -Type of ride-Story-Music/Audio- Surprise element- "Weinie" etc. Evidence of vision-what would happen if....Could we...Maybe we could.. or how about? What park will the attraction best fit in?

**3. Storytelling** - Evidence of Inspiration, creativity, creative space, Story Weaving, Development, Exposition Plan (what your story is about), Goals and Story Mechanics. Moves on to the storytelling phase--unlike most theme parks, Disney prides itself on telling stories throughout its entire enterprise. This can also encompass or lead into a research and development phase.

**4. Research** - Evidence of research and writing skills, search for knowledge, any systematic investigation to establish facts. Know how to Define the task, Locate information, Select resources, Organize notes and present the ideas. Discover who the individuals are that design, build and operate the Disney Theme Parks by researching, checking patent ideas, what has worked in the past-What's NEW today. What music might work-locate audio file and mp3 audio.

**5. Design - Architect - Models** - Design is the most lengthy, because it involves exceptionally detailed and technical planning. Evidence of descriptive writing, -sketches, drawing, rendition, topography, location of ride design of track and car, slope and model building. This is where the "engineer" part of "Imagineering" starts to come into play. Computer and 3D models are constructed to make the ride move from idea to reality.

**6. Testing** - Laying the Groundwork. Students engage in preparation activities that set the stage for the learning ahead. Expanding Knowledge. Mini-experiences in each of job roles Mini-Engineer Experience-Students test design ideas using online simulations and then create Marquette's (small model of an intended work) , or 3-D models of a theme park attraction, ride or coaster design.

**7. Engineering** -Evidence of technical writing skills, model building, construction, design, audio, video and multimedia. The team then takes the models and story and makes it all into a physical reality, building the ride. All of the following come into play: Creative People; Technical People; Systems Engineers; Project Engineers; Mechanical Engineers; Architectural Engineers; Structural and Civil Engineers; Ride Control Engineers; Show Control Engineers; Audio/Video Engineers; Lighting Designers; Special Effects Designers; Finance

**8. Effects** -How will the theme, story, design , music, lighting, sound and special effects all fit into the attraction?

**9. Closeout** - The ride is extensively tested and checked from every point, angle, location and experience. Once the testing is satisfied, it's time for closeout, where everything is finalized and the Imagineers move on to their next project. Evidence of project management, attention to details, checklists, quality assurance and report writing.

**10. Summative Assessments/Public Relations**-Evidence of persuasive writing skills, Presentation skills , Multimedia presentation software. Each person in the group MUST provide a section of the final presentation.

The above information will introduce you to the project. Read over the information on the next page and discuss with your students.

Students will be forming teams in Chapter 5 to complete the following components of the project. Each one will choose a specific job. It is the students responsibility to complete the task for that job, making sure it supports the other job roles. Each team member contributes to the final presentation given to a committee from the "Disney Imagineers Team".

## Crafting our ideas for the "Themed Attraction

The following is an example of the parts that you must include in your "Blue Sky" description

### BLUE SKY – Sample - Ride/Attraction POV

WONDERLAND

by [Eva](#) - Sunday, June 30, 2013 (Credit to Steve Alcorn )

This ride dives into the rich, imaginative world of Lewis Carroll's Wonderland and the nonsensical characters that inhabit it.

#### 1. BACKSTORY

The eccentric, yet earnest Seeker has found what he believes to be the journal of Lewis Carroll, and has been dissecting it word by word ever since. To the logical, untrained eye the journal reads mostly as nonsensical scribbling. But the Seeker knows in his heart there is truth behind the madness. He is determined to find the 'Wonderland' Carroll describes and prove its existence to the world!

#### 2. QUEUE

The Seekers is looking for a team to find wonderland with him. In the queue, the guests will be introduced to the backstory and all the while leading up to the Seeker's laboratory. Once the guests arrive at the pre-show, they meet the Seeker where he congratulates as being specially selected for this mission! He has spent years developing [an invention](#) that will take you deep into Wonderland itself, the only trouble is he needs the right team to pilot the machine while he monitors the controls remotely. The guests are the only people mad enough to be trusted for such an important quest! With no time to delay, he urges the guests to board the machine so he can finally set it on its magical course.

#### 3. RIDE

The ride itself will be a combination of classic dark ride storytelling and modern thrill ride elements. The ride vehicle will be a fast moving, gravity fed, dark ride. It will included sharp turns and level changes, but not as extreme as a gravity and iron ride so the story can be appreciated and understood.. The ride story will be geared more towards the elements of the Tim Burton film than the classic tale experienced in the current Alice in Wonderland dark ride. Additional this ride will not feature Alice as the main character but rather focus on Wonderland itself, from Lewis Carroll's perspective. By doing this, the hope is to attract a wider audience base, specifically more mature guests.

## The FINAL presentation will include the following:

Team Name - members names on the team

Name of the attraction

Story and "Theme"

One 8 x 10 Graphic Flyer - used to attract the guests to your NEW attraction- PR/magazine that will market your attraction/ride to the general public.

- must include 3-D drawing of the attraction
- one sentence open line in the attraction & one sentence closing line in the attraction guide
- four paragraphs that describe the attraction in detail

Audience - Age Group or who is the attraction for

Persuasive techniques that "sell" your design to the committee/authentic audience.

Back story of the attraction

How do the guests enter the attraction?

Interactive queue

Story behind the queue

Type of attraction

How did you "PLUS" the attraction?

What role does the "Animatronics" figure play in the attraction?

A technical report highlighting specific features of the ride

Research on the patent that applies

Audio/Music for the presentation

An artistic rendition of the ride or Sketches / Drawings / Model renderings

3-D Drawing of the attraction

What is your "Weenie"?

Your Weenie" Walt Disney said: " *What you need is a weenie, which says to people 'come this way.'* People won't go down a long corridor unless there's something promising at the end. You have to have something the beckons them to 'walk this way.'"

**Optional:** (Depending on time frame used) A blueprint and Marquette (a small [model](#) ) three dimensions for either a sculptural or an architectural project. (to scale) of your group's attraction and design

Assignment presentation for each member of the team

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

## Disney Theme Park Attraction "At-a-glance"

*Suggestions on involving several content areas*

<b>Project Phase</b>	<b>Science</b>	<b>Math</b>	<b>Language Arts</b>	<b>Social Studies</b>
<b>1. Accessing Prior Knowledge</b>  <i>Team Assembly</i>	Theme park attractions/ride/coaster videos, discussion	Theme park attractions/ride/coaster statistics, graph matching	Sensory writing with video clips	Internet scavenger hunt for Theme park attractions/ride/coaster sites
<b>2. Investigating to Build Foundation Knowledge</b>	Newton's Law experiments	Formulas, slope, linear equations	Technical reading, descriptive writing	3D history time-line of recreation and leisure in America
<b>3. Expanding Knowledge</b>	Mini-engineer experience  Theme park attractions/ride/coaster experiments	Mini-architect experience  Probeware labs	Mini-public relations manager experience  Business letter and career jigsaw	Mini-researcher experience  Theme park attractions/ride/coaster database
<b>4. Applying Knowledge</b>  <i>Disney Park Virtual Field Trip</i>	At-home Theme park attractions/ride/coaster project	At-home Theme park attractions/ride/coaster project	Continue with Phase Three	Continue with Phase Three
<b>5. Contributing Knowledge</b>  <i>Group Design Task</i>	Engineer formulas, safety report, car design	Architect blue print and artistic rendition	Public relations multimedia presentation, group planning time	Magazine cover and stories, thesis statement for presentations

# Chapter 5.

## Organizing a Team

Activating prior knowledge - Investigating to build foundation knowledge

Individual Job Responsibilities	12 Job descriptions	pg 59
<b>Getting started - Group Questions -Selecting the leaders</b>		<b>A-pg 61</b>
<b>Skills Database- Selling my skills to contribute to the team objective</b>		<b>A-pg 64</b>
<b>Taking Walt to Walt Disney World -Where-Which Park- Land-Why</b>		<b>A-pg 65</b>
Photo Gallery		pg 65



<sup>8</sup>. Destination360. Above image. [www.destination360.com](http://www.destination360.com) JPEG file

Investigating to build foundation knowledge about Disney theme park attractions, rides and coasters. Students engage in mini architect (math), engineer (science), public relations (language arts), and researcher (social studies) tasks that prepare them for the group design challenge in Phase Five. In addition the students will build foundation knowledge and understanding about Disney theme park attractions, rides and coaster design during the time allotted to view seven videos on theme park design and development by Disney Imagineers. Brainstorming and collaboration tools will be explored. The design team will be created to include: Director; Disney expert; Researcher; Mind Mapper; Computer-skills expert; Art Designer; Story Teller; Engineer; Model Builder; Audio-Music editor; Recorder-note taker; Public Relations.

**Organizing a Team** - select you team members based on their skills. You need: 5-6 members that can: Direct and manage the group; Disney expert; Researcher - Google/search expert; Mind Mapper/Brainstorming; Computer-skills expert/Presentation; Art Designer; Story Teller; Engineer; Model Builder- Sketchup; Audio-Music editor; Recorder-note taker

**Who does what, where, when, why**

Disney hires a team that includes a cross section of wildly different disciplines in order to handle the construction of a new ride. These people are called "**Imagineers**," a word that combines "engineers" and "imagination."

**Individual Job Responsibilities**

You will be assigned a grade based on work at your chosen job. Although this is a group project, you will receive a grade for your work only. You may also earn bonus points based on how well your piece fits together with the other members of the group and how well you work together in your group.

<p><b>Director</b></p> <p>Responsible for ensuring that the Project Team completes the project. communication, including status reporting, risk management, escalation of issues that cannot be resolved in the team, and, in general, making sure the project is delivered in budget, on schedule, and within scope. Oversee journals of each job.</p>	<p><b>Disney Expert</b></p> <p>If possible this should be an individual that has been to Disney World at least 3 time and is familiar with the 4 parks. They will provide resources and background information for the team members.</p>
<p><b>Researcher</b> - Google/search expert</p> <p><i>Evidence of research and writing skills</i>          Journal entries          -sketches, pictures, and a daily log          Internet research documentation          Use of Publisher program to create magazine cover          -thesis statement portrayed on cover          -three articles to support a thesis          Use of a data base          -Search Web for "Patent Data"</p>	<p><b>Mind Mapper</b> - Brainstorming</p> <p><b>Brainstorming</b> is a group or individual creativity technique by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its member(s).          Desired qualities are:          Defer judgment,          Reach for quantity</p>
<p><b>Computer-Skills expert/Presentations</b></p> <p>Knowledge of MAC/PC software          Knowledge of Presentation software and telling the story to make a "Persuasive Presentation"          Editing software skills</p>	<p><b>Art Designer</b></p> <p>-create/develop specific parts of an art piece or scene          -overall visual appearance and how it communicates visually          -stimulates moods, features, appeals to a target audience          -translate desired moods, messages, concepts, and underdeveloped ideas into imagery.          -imagining what the finished piece or scene</p>

	might look like
<p><b>Story Teller</b></p> <p>Know your audience Wear your guest's shoes Organize the flow of people and ideas Create a weenie Communicate with visual literacy Avoid overload For every ounce of treatment , provide a ton of fun</p>	<p><b>Engineer's Responsibilities</b></p> <p><i>Evidence of technical writing skills</i> -sketches, pictures, and a daily log Technical report to include: -track design description ;research on design elements &amp; on materials; mathematical configurations ;safety measures ;forces Correspondence with an expert via: interview, email, or online (optional)</p>
<p><b>Architect's/ Model Builder</b></p> <p><i>Evidence of descriptive writing</i> Journal entries -sketches or pictures, and a daily log Scaled continuous side and top view -correct labels for speed, distance, time, and forces Realistic rendition of attraction including: -outside environment-theme-topography -design of track and car Slope of first drop and angle of decent - Create model to scale</p>	<p><b>Audio-Music editor</b></p> <p>Locate audio file on the Web Create background music for the themed attraction &amp; final presentation. Knowledge of audio editing software <b>Records audio</b> data from various devices; Sound editing functions include <b>cut, copy, paste, delete, insert, silence, trim</b> and more; Audio effects include, <b>amplify, normalize, equalizer, envelope, reverb, echo, reverse, sample rate conversion</b> and much more; Capable of using <b>CD ripper/Burner</b>;</p>
<p><b>PR Director/Presentation Responsibilities</b></p> <p><i>Evidence of persuasive writing skills</i> Journal entries -sketches, pictures, and a daily log Presentation for the group -multimedia presentation Presentation should include: -safety measures -unique features -highlight materials used -highlight coaster specs &amp; car design -some information from each of the other jobs</p>	<p><b>Recorder-Note taker</b></p> <p>Transcribe conversations as meeting take place recording information captured from another source.</p> <p>Familiar with several apps for MAC or PC to assist in the note taking/recording process</p> <p>Organizational and be able to process main ideas</p>

## Selecting the leaders:

**Group questions to ask and answer** ( all students in the class participate in the exercise:

Ask the questions below and find 4 individuals (if you have 24 students) that meet the following criteria:

\_\_\_ I have been to Walt Disney World/Disneyland 5+ times- Number of students that meet this criteria \_\_\_\_\_

\_\_\_ I have been to Walt Disney World/Disneyland 3+ times- Number of students that meet this criteria \_\_\_\_\_

\_\_\_ I have been to Walt Disney World/Disneyland 2+ times- Number of students that meet this criteria \_\_\_\_\_

Instructor selects 6 individuals from the class that meet the above criteria.

Ask the 3 question below to the 6 individuals-**student need to listen as they will vote**

\_\_\_ What is you favorite attraction at Walt Disney World and WHY?

\_\_\_ What is you favorite themed attraction at Walt Disney World and WHY?

\_\_\_ I have experience in leadership and can delegate jobs to individuals and solve problems

### **Select 4 individuals that will head up the 4 groups**

Pass out 3 x 5 index cards - students vote on who should lead the FOUR (4) groups

### **You now have 4 groups with a leader for each group**

**Group A** \_\_\_\_\_ **Name of leader**

**Group B** \_\_\_\_\_ **Name of leader**

**Group C** \_\_\_\_\_ **Name of leader**

**Group D** \_\_\_\_\_ **Name of leader**

### **ALL Others:**

Pass out the SKILLS forms (page 103) papers and let the remainder of the class fill out and answer the questions -- allow 4-8 min

## GOAL:

Leaders will determine [who would be a good fit in their group](#).

It is up to you how much direction you want to give the leaders in each group.

The desired outcome is to have the leaders take notes and decide who they want in their group.

The leader in each group will need to decide on the most important skills their group will need.

1. Provide note paper to each of the leaders
2. After the remaining individuals have had time to fill in the blanks - collect the papers.
3. EACH of the leaders will have time to review the forms
  - Allow the leaders 15 min to review the paper forms.
  - Divide the forms into 4 groups and hand one set to each group leader.
  - The 2 group leaders have 3 min to look at each set of the forms.
  - At the end of 3 min tell them to pass the pack of forms to the right.

Repeat until each group has had the opportunity to see all the forms.

4. When completed pass the forms back to the individuals that filled in the forms.

## Materials needed:

Color pencils  
Color markers  
8 x 11 paper (card stock or heavy paper works best)  
String  
Scissors  
Tape - Clear or masking or double sided

**Assignment: 15 min exercise**

Students design and create a billboard to wear  
Emphasize their skills they have indicated on the Skills database  
Each student decides how to advertise themselves

**Job Interview:**

Leaders will have 10 min to select the member that will join their team  
It is up to the students to SELL their SKILLS to the leaders.

There are no instructions here on how to do this. This is your first test to observe the decision capabilities and how the different teams ask questions to decide who will be on their team.

**FYI** - Watch for the creative and innovative ways that students sell their skills. It is fun to watch how innovative some students are.

Select the team members.

**There are only 10-15 min allowed for the job interview exercise-**

**GOAL:** Determine who would be a good fit in my group.

**Skills Database:**

-I have the following skills:

**Name** \_\_\_\_\_

You need to hire me because.....

- \_\_\_ I have experience in WRITING - Stories; Visual Literacy; Blogs
- \_\_\_ I can create and build things from cardboard
- \_\_\_ Give me paint, cardboard, sticks and pipe cleaners and I will CREATE a \_\_\_\_\_
- \_\_\_ I have experience in creating Digital Stories and in Visual Literacy
- \_\_\_ I have experience in creating Animation/Videos
- \_\_\_ I have experience in creating STOP-Motion Videos & Apps/Tools
- \_\_\_ I have experience in creating videos that tell a story
- \_\_\_ I know how to create a slide show in an application -OTHER than PowerPoint
- \_\_\_ I know how to EDIT and RECORD with Audacity
- \_\_\_ I know how to search with 3 DIFFERENT search engines to find IMAGES
- \_\_\_ I know how to SEARCH and Locate-specific You Tube videos
- \_\_\_ I know how to SEARCH and Locate-specific Disney songs on the Web
- \_\_\_ I am an "Artist"-I can use Google SketchUp;/TinkerCAD/AutoCAD/3D Draw
- \_\_\_ I have experience in building "Scale Models"
- \_\_\_ I know how to and like to "tinker" with things
- \_\_\_ I understand "High Tech stuff"
- \_\_\_ I play a musical instrument
- \_\_\_ I have over 150 songs and music on my iPod
- \_\_\_ I am an expert in \_\_\_\_\_

**My top skill is:** \_\_\_\_\_

**My second best skill is** \_\_\_\_\_

**My third best skill is** \_\_\_\_\_

**You should select me to be on YOUR team because**

---

**TEAM Members:**

1. Director
2. Disney expert
3. Researcher - Google/search expert

4. Mind Mapper - Brainstorming Software
5. Computer -skills expert (Presentation (PowerPoint-Keynote))
6. Art Designer
7. Story Teller
8. Engineer
9. Model Builder - Sketchup
10. Audio-Music editor
11. Recorder-note taker

**Taking Walt to Walt Disney World** ( Individual groups discuss and then present their main discussion points to the class.

Walt Disney was never able to see his vision for Walt Disney World realized, and we often speculate on what he would think of the parks and resorts today.

Imagine taking Walt to Walt Disney World.

If we could spend a day with Walt, what would WE want to show him at Walt Disney World... and why?

**Park:**

**Land:**

**Attractions:**

**Why:**

## Roller Coaster Photo Gallery

Students pose proudly with their roller coaster creations.



32. All images this page-INTEL. Intel [Education: It's a Wild Ride](http://www.intel.com/content/www/us/en/education/k12/wild-ride.html). JPEG file  
<http://www.intel.com/content/www/us/en/education/k12/wild-ride.html>

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# Chapter 6.

## Getting to know Disney Theme Parks

### "Walt Disney World"- "Disneyland"

#### Investigating to build foundation knowledge

Getting to know "Walt Disney World"- "Disneyland" Theme Parks

**Assignment- Explore Parks and Maps At A Glance**

**A-pg 69**

Investigating to build foundation knowledge - Type of Attractions

pg 70

**Assignment- I think we should .....**

**A-pg 74**



**Accessing prior knowledge** about Disney theme park attractions, rides and coasters.

The unit begins with a short class introduction to inform students about the project and get them excited about what's ahead. Following the class introduction students will explore building blocks, to determine what they know and what they do not know about Disney Theme Parks. Information will be explored on why to pre-assess and the various types of assessment for the PBL project. Individuals will build their knowledge base and begin project-related work in each subject area class that draws upon what they already know or have experienced related to Disney Theme Park Attractions, other parks and coasters. The session concludes on how Walt Disney World creates new attraction/rides.

**Investigating to build foundation knowledge about Disney theme park attractions, rides and coasters.**



Students engage in mini architect (math), engineer (science), public relations (language arts), and researcher (social studies) tasks that prepare them for the group design challenge in Phase Five. In addition the students will build foundation knowledge and understanding about Disney theme park attractions, rides and coaster design during the time allotted to view seven videos on theme park design and development by Disney Imagineers. Brainstorming and collaboration tools will be explored. The design team will be created to include: Director; Disney expert; Researcher; Mind Mapper; Computer-skills expert; Art Designer; Story Teller; Engineer; Model Builder; Audio-Music editor; Recorder-note taker; Public Relations.

# Getting to know "Walt Disney World"- "Disneyland" Theme Parks

>>> Assignment: Hand out the 4 park maps/brochures or the link to the Disney Park Maps.

( You can download the "Park Maps" On-Line here: <http://www.wdwinfo.com/maps/>

- Magic Kingdom
- Hollywood Studios
- Animal Kingdom
- EPCOT
- Disneyland
- California Adventure

1. Look over each park brochure and discuss the different Disney World attractions.
2. Discuss the different types of attractions- Share an example of each type if you can.
3. Review pages 81-85 on [the type of attractions/rides](#) - provide examples to your group if you have had experience on the attraction



**Stage 2: Investigating to build foundation knowledge** about Disney theme park attractions, rides and coasters. In addition the students will build foundation knowledge and understanding about 10 types of attractions. Research assignments will provide foundation knowledge and understanding about Disney Imagineers. Students develop research skills in curriculum content areas, learn about technical reading and writing, and conduct experiments in math and science that build understanding about force and the laws of motion.

# Investigating to build foundation knowledge - Type of Attractions

## A. Gravity rides



3.

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Images and drawings this page - Allears. WDW images. [www.allears.net/](http://www.allears.net/) JPEG file

## B. Boat rides



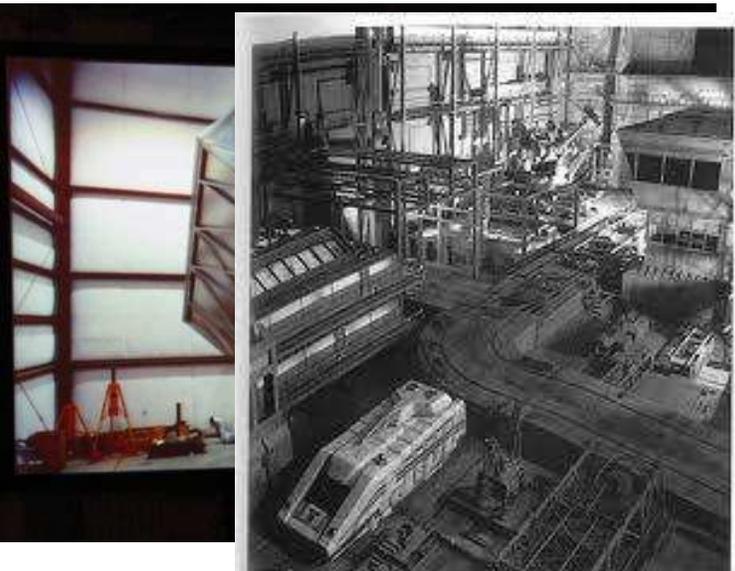


3. Allears. WDW images. [www.allears.net/](http://www.allears.net/) JPEG file

### C. Simulators



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How "Star Tours" became a reality- Making of Star Tours <http://bit.ly/16ECFG8>

19. All images above - lintercot. WDW images. [www.intercot.com](http://www.intercot.com) JPEG file

**D. Guide Rail / Track**



17. All Images this page- WDW info. WDW images. [www.wdwnfo.com/](http://www.wdwnfo.com/) JPEG file

**D. Guide Rail / Track ( Cont )**



12. Disney World. Personal photograph by Howie DiBlasi. 4-28-2012

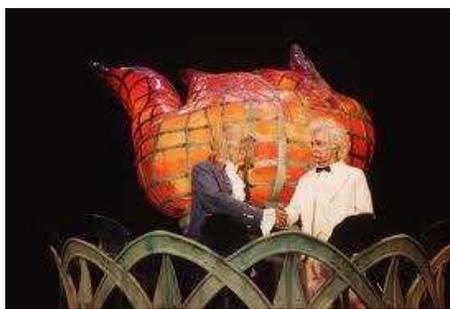
**E. Dark rides** ( some rides/attractions are combination of "Dark" & "Gravity"



**F. Carney rides**



**G. Walk through/Sit Down/Theatre**



## H. You drive



17. All Images this page- WDW info. WDW images. [www.wdwinfo.com/](http://www.wdwinfo.com/) JPEG file

## Assignment: I think we should...

Design a attraction that would.....

Because

Should be placed in the ..... park

Because

Should be in the ..... land/area

Because

They type of ride vehicle should be .....

Because

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# Chapter 7: Explore Disney Parks-Themes and Lands



Disneyland-California	pg 77
Magic Kingdom	pg 77
Disney California Adventure	pg 77
Walt Disney World - Orlando	pg 78
Magic Kingdom	pg 79
Hollywood Studios	pg 83
Animal Kingdom	pg 85
EPCOT	pg 88

The next 20 pages will assist you to familiarize you with the theme park and the type of attraction in each park.



Where are the parks?

- Location-Theme parks

Disneyland-Disneyland Park

- [Park layout](#)

### Lands of Disneyland

- [Main Street, U.S.A.](#)
- [Adventureland](#)
- [New Orleans Square](#)
- [Frontierland](#)
- [Critter Country](#)
- [Fantasyland](#)
- [Tomorrowland](#)

17. All Images page 53-68- WDW info. WDW images. [www.wdwinfo.com/](http://www.wdwinfo.com/) JPEG file

## **Disney California Adventure® Park**



- [Pacific Wharf](#)
- [Paradise Pier](#)

Where are the parks?

Location-Theme parks

- [Park layout](#)
- ["a bug's land"](#)
- [Buena Vista Street](#)
- [Cars Land](#)
- [Condor Flats](#)
- [Grizzly Peak](#)
- [Hollywood Land](#)

# Walt Disney World Resort

Features four theme parks. Each park is represented by an iconic structure.



## **Magic Kingdom** – Cinderella Castle

Lands of the Magic Kingdom

### Lands

- Main Street, U.S.A.
- Adventureland
- Frontierland
- Liberty Square
- Fantasyland
- Tomorrowland

Main article: Magic Kingdom attraction and entertainment history

Further information: List of attractions at the Walt Disney World Resort



## **Attractions**

Conquer mountains, cruise down an exotic jungle river and brave a ghostly mansion!



## **Astro Orbiter**

Magic Kingdom® Park, Tomorrowland®

[Astro Orbiter](#)



## **The Barnstormer**

Magic Kingdom® Park, Fantasyland®

[The Barnstormer](#)



### **Big Thunder Mountain Railroad®**

Magic Kingdom® Park, Frontierland®

[Big Thunder Mountain Railroad®](#)



### **Buzz Lightyear's Space Ranger Spin®**

Magic Kingdom® Park, Tomorrowland®

[Buzz Lightyear's Space Ranger Spin®](#)



### **Casey Jr. Splash 'N' Soak Station**

Magic Kingdom® Park, Fantasyland®

[Casey Jr. Splash 'N' Soak Station](#)



### **Cinderella Castle**

Magic Kingdom® Park, Fantasyland®

[Cinderella Castle](#)



### **Country Bear Jamboree**

Magic Kingdom® Park, Frontierland®

[Country Bear Jamboree](#)



### **Dumbo the Flying Elephant®**

Magic Kingdom® Park, Fantasyland®

[Dumbo the Flying Elephant®](#)



### **Enchanted Tales with Belle**

Magic Kingdom® Park, Fantasyland®

[Enchanted Tales with Belle](#)



### **Frontierland Shootin' Arcade**

Magic Kingdom® Park, Frontierland®  
[Frontierland Shootin' Arcade](#)



### **The Hall of Presidents**

Magic Kingdom® Park, Liberty Square  
[The Hall of Presidents](#)



### **Haunted Mansion®**

Magic Kingdom® Park, Liberty Square  
[Haunted Mansion®](#)



### **"It's a small world"®**

Magic Kingdom® Park, Fantasyland®  
["it's a small world"®](#)



### **Jungle Cruise®**

Magic Kingdom® Park, Adventureland®  
[Jungle Cruise®](#)



### **Liberty Square Riverboat**

Classics - Magic Kingdom® Park, Liberty Square  
[Liberty Square Riverboat](#)



### **Mad Tea Party**

Magic Kingdom® Park, Fantasyland®  
[Mad Tea Party](#)



### **The Magic Carpets of Aladdin**

Magic Kingdom® Park, Adventureland®  
[The Magic Carpets of Aladdin](#)



### **Main Street Vehicles**

Magic Kingdom® Park, Main Street, U.S.A.®

[Main Street Vehicles](#)



### **The Many Adventures of Winnie the Pooh**

Magic Kingdom® Park, Fantasyland®

[The Many Adventures of Winnie the Pooh](#)



### **Mickey's PhilharMagic®**

Magic Kingdom® Park, Fantasyland®

[Mickey's PhilharMagic®](#)



### **Monsters, Inc. Laugh Floor®**

Magic Kingdom® Park, Tomorrowland®

[Monsters, Inc. Laugh Floor®](#)



### **Peter Pan's Flight®**

Magic Kingdom® Park, Fantasyland®

[Peter Pan's Flight®](#)



### **Pirates of the Caribbean®**

Magic Kingdom® Park, Adventureland®

[Pirates of the Caribbean®](#)



### **Prince Charming Regal Carrousel**

Magic Kingdom® Park, Fantasyland®

[Prince Charming Regal Carrousel](#)



### **Space Mountain®**

Magic Kingdom® Park, Tomorrowland®

[Space Mountain®](#)



### **Splash Mountain®**

Magic Kingdom® Park, Frontierland®

[Splash Mountain®](#)



### **Stitch's Great Escape!**

Magic Kingdom® Park, Tomorrowland®

[Stitch's Great Escape!](#)



### **Swiss Family Treehouse**

Magic Kingdom® Park, Adventureland®

[Swiss Family Treehouse](#)



### **Tom Sawyer Island**

Magic Kingdom® Park, Frontierland®

[Tom Sawyer Island](#)



### **Tomorrowland Arcade**

Magic Kingdom® Park, Tomorrowland®

[Tomorrowland Arcade](#)



### **Tomorrowland Speedway**

Magic Kingdom® Park, Tomorrowland®

[Tomorrowland Speedway](#)



### **Tomorrowland Transit Authority PeopleMover**

Magic Kingdom® Park, Tomorrowland®

[Tomorrowland Transit Authority PeopleMover](#)



### **Under the Sea ~ Journey of The Little Mermaid**

Magic Kingdom® Park, Fantasyland®

[Under the Sea ~ Journey of The Little Mermaid](#)



## **Walt Disney World Railroad - Main Street, U.S.A.**

Magic Kingdom® Park, Main Street, U.S.A.®  
[Walt Disney World Railroad - Main Street, U.S.A.](#)



## **Walt Disney's Carousel of Progress**

Classics-Indoor-Magic Kingdom-Tomorrowland®  
[Walt Disney's Carousel of Progress](#)



## **Walt Disney's Enchanted Tiki Room**

Magic Kingdom® Park, Adventureland®

## **Disney's Hollywood Studios – The Sorcerer's Hat**



### Areas

- [Hollywood Boulevard](#)
- [Echo Lake](#)
- [Streets of America](#)
- [Animation Courtyard](#)
- [Pixar Place](#)
- [Sunset Boulevard](#)



### Attractions

[Experience intergalactic adventures, plummeting elevator rides, rollickin' roller coasters and more!](#)



### [Academy of Television Arts and Sciences Hall of Fame Plaza](#)

American Film Institute Showcase  
Disney's Hollywood Studios®, Streets of America  
[American Film Institute Showcase](#)



### The Great Movie Ride®

Disney's Hollywood Studios®, Hollywood Boulevard  
[The Great Movie Ride®](#)



The Legend of Captain Jack Sparrow  
 Disney's Hollywood Studios®, Mickey Avenue  
[The Legend of Captain Jack Sparrow](#)



The Magic of Disney Animation  
 Disney's Hollywood Studios®, Animation Courtyard  
[The Magic of Disney Animation](#)



Muppet\*Vision 3D  
 Disney's Hollywood Studios®, Streets of America  
[Muppet\\*Vision 3D](#)



Rock 'n' Roller Coaster® Starring Aerosmith  
 Disney's Hollywood Studios®, Sunset Boulevard  
[Rock 'n' Roller Coaster® Starring Aerosmith](#)



Star Tours® - The Adventures Continue  
 Disney's Hollywood Studios®, Echo Lake  
[Star Tours® - The Adventures Continue](#)



Disney's Hollywood Studios®, Streets of America  
[Studio Backlot Tour](#)



Toy Story Midway Mania!®  
 Disney's Hollywood Studios®, Pixar Place  
[Toy Story Midway Mania!®](#)



The Twilight Zone Tower of Terror™  
 Disney's Hollywood Studios®, Sunset Boulevard  
[The Twilight Zone Tower of Terror™](#)



Walt Disney: One Man's Dream  
Disney's Hollywood Studios®, Mickey Avenue

## Disney's Animal Kingdom

### - The Tree of Life

Areas

Oasis

Discovery Island

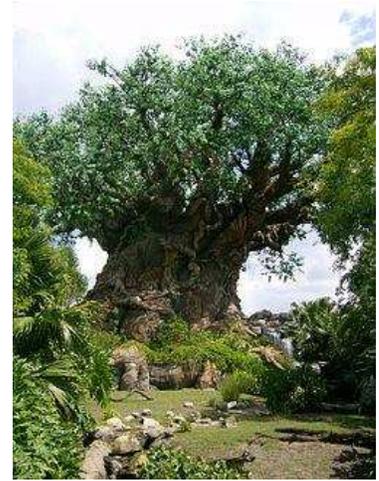
Camp Minnie-Mickey

Africa

Rafiki's Planet Watch

Asia

DinoLand U.S.A.



Affection Section  
Height: Any Height  
Animal Encounters, Interactive  
Disney's Animal Kingdom® Theme Park, Rafiki's Planet Watch®  
[Affection Section](#)



The Boneyard  
Disney's Animal Kingdom® Theme Park, DinoLand U.S.A.®  
[The Boneyard](#)



Conservation Station®  
Animal Encounters, Indoor, Interactive  
Disney's Animal Kingdom® Theme Park, Rafiki's Planet Watch®  
[Conservation Station®](#)



Dino-Sue  
[Dino-Sue](#)



DINOSAUR  
Height: 40in (102cm) or taller  
FASTPASS, Indoor

Disney's Animal Kingdom® Theme Park, DinoLand U.S.A.®

[DINOSAUR](#)



Discovery Island® Trails  
Animal Encounters  
Disney's Animal Kingdom® Theme Park, Discovery Island®  
[Discovery Island® Trails](#)



Expedition Everest - Legend of the Forbidden Mountain®  
Disney's Animal Kingdom® Theme Park, Asia®  
[Expedition Everest - Legend of the Forbidden Mountain®](#)



Fossil Fun Games  
Interactive  
[Fossil Fun Games](#)



Habitat Habit!  
Animal Encounters  
, Rafiki's Planet Watch®  
[Habitat Habit!](#)



It's Tough to be a Bug!®  
Disney's Animal Kingdom® Theme Park, Discovery Island®  
[It's Tough to be a Bug!®](#)



Kali River Rapids®  
Disney's Animal Kingdom® Theme Park, Asia®  
[Kali River Rapids®](#)



Kids' Discovery Clubs  
Interactive  
Disney's Animal Kingdom® Theme Park  
[Kids' Discovery Clubs](#)



Kilimanjaro Safaris®  
Animal Encounters  
Disney's Animal Kingdom® Theme Park, Africa  
[Kilimanjaro Safaris®](#)



Maharajah Jungle Trek®  
Animal Encounters  
Disney's Animal Kingdom® Theme Park, Asia®  
[Maharajah Jungle Trek®](#)



The Oasis Exhibits  
Animal Encounters  
Disney's Animal Kingdom® Theme Park, Oasis  
[The Oasis Exhibits](#)



Pangani Forest Exploration Trail®  
Animal Encounters  
Disney's Animal Kingdom® Theme Park, Africa



[Pangani Forest Exploration Trail®](#)  
Primeval Whirl®  
Disney's Animal Kingdom® Theme Park, DinoLand U.S.A.®  
[Primeval Whirl®](#)



Tree of Life®  
Discovery Island®  
[Tree of Life®](#)



TriceraTop Spin  
Theme Park, DinoLand U.S.A.®  
[TriceraTop Spin](#)



Wildlife Express Train  
Ride the rails on this rustic locomotive that travels behind-the-scenes from Harambe, Africa to Rafiki's Planet Watch.

# Epcot – Spaceship Earth



Park layout

[Areas](#)

[Future World](#)

[World Showcase](#)

[Epcot Character Spot](#)

Advanced Training Lab  
Indoor, Interactive, Play Areas  
Epcot®, Future World  
[Advanced Training Lab](#)



The American Adventure  
Classics, Indoor, Stage Shows  
Epcot®, World Showcase  
[The American Adventure](#)



American Heritage Gallery  
Indoor -Epcot®, World Showcase  
[American Heritage Gallery](#)



Bijutsu-kan Gallery  
Indoor  
Epcot®, World Showcase  
[Bijutsu-kan Gallery](#)



Captain EO  
FASTPASS, Indoor, Stage Shows  
Epcot®, Future World  
[Captain EO](#)



The Circle of Life  
Indoor  
Epcot®, Future World  
[The Circle of Life](#)



Disney Phineas & Ferb: Agent P's World Showcase Adventure  
Interactive, What's New  
Epcot®, World Showcase  
[Disney Phineas & Ferb: Agent P's World Showcase Adventure](#)



Ellen's Energy Adventure  
Indoor  
Epcot®, Future World  
[Ellen's Energy Adventure](#)



Gallery of Arts and History  
Indoor  
Epcot®, World Showcase  
[Gallery of Arts and History](#)



Grand Fiesta Tour Starring The Three Caballeros  
Height: Any Height  
Classics, Indoor  
Epcot®, World Showcase  
[Gran Fiesta Tour Starring The Three Caballeros](#)



ImageWorks - The "What If" Labs  
Indoor, Interactive  
Epcot®, Future World  
[ImageWorks - The "What If" Labs](#)



Impressions de France  
Disney Princesses, Indoor  
Epcot®, World Showcase  
[Impressions de France](#)



Innovations West  
Epcot®, Future World  
[Innovations West](#)



Journey Into Imagination With Figment  
Indoor  
Epcot®, Future World  
[Journey Into Imagination With Figment](#)



Kid cot Fun Stops  
Indoor, Interactive  
Epcot®, World Showcase  
[Kid cot Fun Stops](#)



Living with the Land  
Indoor  
Epcot®, Future World  
[Living with the Land](#)



Mexico Folk Art Gallery  
Indoor  
Epcot®, World Showcase  
[Mexico Folk Art Gallery](#)



Mission: SPACE®  
Indoor  
Epcot®, Future World  
[Mission: SPACE®](#)



O Canada!  
Indoor  
Epcot®, World Showcase  
[O Canada!](#)



Reflections of China  
Indoor  
Epcot®, World Showcase  
[Reflections of China](#)



Seabees  
Animal Encounters, Indoor, Interactive  
Epcot®, Future World  
[Seabees](#)



The Seas with Memo & Friends®  
Indoor  
Epcot®, Future World  
[The Seas with Memo & Friends®](#)



Soaring!®  
Indoor  
Epcot®, Future World  
[Soaring!®](#)



Spaceship Earth  
Classics, Indoor, Interactive  
Epcot®, Future World  
[Spaceship Earth](#)



The Spirit of Norway  
Indoor  
Epcot®, World Showcase  
[The Spirit of Norway](#)



Stave Church Gallery  
Indoor  
Epcot®, World Showcase  
[Stave Church Gallery](#)



Test Track® Presented by Chevrolet®  
What's New  
Epcot®, Future World  
[Test Track® Presented by Chevrolet®](#)



Turtle Talk With Crush  
Interactive  
Epcot®, Future World  
[Turtle Talk With Crush](#)

17. All Images above- page 53-68- WDW info. WDW images. [www.wdwinfo.com/](http://www.wdwinfo.com/) JPEG file

# Chapter 8.

## Backstory and Mythic Storytelling

Information: Backstory

pg 92

Information: Mythic Storytelling

pg 93

**Activity: How Does Walt Disney World Create New Rides? View Video**

A-pg 94

**Activity: Science of Disney Imagineering-Build A Coaster**

A-pg 96



**Accessing prior knowledge** about Disney theme park attractions, rides and coasters. The unit begins with a short class introduction to inform students about the project and get them excited about what's ahead. Following the class introduction students will **explore building blocks**, to determine **what they know and what they do not know** about Disney Theme Parks. Information will be explored on why to **pre-assess and the various types of assessment** for the PBL project. Individuals will build their knowledge base and begin project-related work in each subject area class that draws upon what they already know or have experienced related to Disney Theme Park Attractions, other parks and coasters. The session concludes on **how Walt Disney World creates new attraction/rides**.

<sup>9</sup>. Above image: [Disboards](http://disboards.com). WDW images. [www.disboards.com](http://www.disboards.com) JPEG file

## Research: Storytelling: Backstory (Explore the links below)

- [The Magic of \*Disney Parks Storytelling\*. Radiator Springs ...](#)
- [The Magic of \*Disney Parks Storytelling\*. Pirates of the ...](#)
- [The Magic of \*Disney Parks Storytelling\*. Splash Mountain at ...](#)
- [The Magic of \*Disney Parks Storytelling\*. Haunted Mansion at ...](#)



<sup>21</sup>.[AnimationWorld](#) So, Is This Where I'm Supposed to Laugh?. Web Image. [www.awn.com](http://www.awn.com) JPEG file

### Information and background

## Disney's Theme Parks and the Magic of Mythic Storytelling



Though you may not be aware of it, whenever you're playing in any of Disney's many theme parks, the Imagineers who designed those parks are busy playing with your head. **EVERY GUEST IS A HERO** reveals for the first time how the artists and technical wizards of Walt Disney Imagineering have harnessed the magic of mythic storytelling to press all sorts of psychological buttons you never knew you had, inspiring you and millions of your fellow visitors to return to the parks again and again.

- [The Magic of Disney Parks Storytelling: Big Thunder ...](#)

by [Tyler Slater, Public Relations Manager, Disney Destinations](#) (Thank you for permission to re-print

So, are you holdin' onto your hats and glasses? Ye-howdy, here we go!

According to legend, a supernatural force has dwelled deep within Big Thunder Mountain and would be angered by any trespassers. Many believed these ghostly tales were what largely kept the area uninhabited for many years. But when an old prospector found some gold nuggets along the mountain's slopes in the late 1860s, miners rushed to the town of Rainbow Ridge for their own chance to strike it rich.

For several years, Big Thunder Mountain Mining Company produced a large quantity of gold and the myths of a supernatural force remained simply legend. However, by 1883, the miners were forced to blast deeper and deeper into the mountain to continue producing profits. Shortly after the explosions began, strange things started happening: eerie noises echoed through the new shafts, cave-ins became frequent and equipment would mysteriously fail. As soon as the mine trains began rolling out of the station on their own, people started fleeing the area.

Today, the Big Thunder Mountain Mining Company welcomes guests to hop aboard a train, but beware – you just may experience the mountain's more supernatural forces and perhaps even stumble upon an explosive mine shaft.

Next time you hop on board Big Thunder Mountain Railroad, keep an eye out for the horseshoe at the entrance to the first mine shaft; you'll notice it hangs right-side-up to keep the luck inside. Nearing the end of the attraction, you'll enter another mine shaft with a "Keep Out" sign in front. There, you'll see another horseshoe, however this time, it is upside-down.

<http://disneyparks.disney.go.com/blog/2014/04/the-magic-of-disney-parks-storytelling-big-thunder-mountain-railroad-at-disneyland-park/>

**Activities:** Watching a series of videos about Disney Theme Park Attractions.

### **How Does Walt Disney World Create New Rides?**

-Research the article: "How Does Walt Disney World Create New Rides?"

Read more: [How Does Walt Disney World Create New Rides?](#)

#### **>> View this first :**

Get on a Soundtracker and strap on to discover how Disney Imagineers created this high speed, thrilling rock'n roll adventure, which lighting effects are unique to Walt Disney Studios Park.

#### **>>> Making Of Rock'n' Roller Coaster starring Aerosmith at Disneyland Paris**

<http://www.youtube.com/watch?v=SRwRdmzjOIQ> 5:48 min

**View this next:** (Amazing animation that Steamboat Productions produced.

## >> Expedition Everest: Legend of the Forbidden Mountain YouTube

<http://www.youtube.com/watch?v=WjnjfriAqW4> 9:51 min

After spending over three months working on this recreation, I have finally managed to finish Expedition Everest: Legend of the Forbidden Mountain! I tried to make everything as detailed and accurate as possible, but the complexity of this ride is so massive that I couldn't make everything 100% accurate. For example, the queue line has such weird angles that I had to sacrifice some details on the exterior of the gift shop and main entrance building. Also, the Yeti museum is so complex inside that I needed to rearrange it (those of you who know the attraction well enough will realize that there are some differences). Finally, the mountain itself is so structurally complicated that I had to sacrifice the way it looks on the exterior. Please realize that I did my absolute best to make this ride as accurate to the real thing as possible, so I hope that you will thoroughly enjoy it!

I know many of you are wondering how I made the ride go backwards and forwards. Although it is too difficult to explain the entire process, I will do my best to let you know how to make it happen. First, you need to read about how to overlap track pieces (see the link below). Once you read the information at that link, you will realize that my ride is actually made up of 3 (yes, THREE) roller coasters, not just one.

As always, enjoy! <http://www.steamboatproductions.com/>

To download the custom scenery used in this video, please go to <http://www.rct-theme-world.de/rct-lis...>  
To learn how to overlap track pieces, please go to <http://www.ataricomunity.com/forums/...>

[Imagineer0988 https://www.youtube.com/user/Imagineer0988/about](https://www.youtube.com/user/Imagineer0988/about)

## View the following videos:

### America's Thrillmakers - Walt Disney World Intro VIDEO

An in depth look into the very popular thrill attractions at the Walt Disney World Resort. Watch as America's Thrillmakers take 6 guests and test them on Disney's array of thrill rides. Learn Imagineer's secrets, guest reviews of attractions and, most importantly, what exactly makes a thrill ride. "Hang on to yer hats and glasses, cause this here's the wildest ride in the wilderness!"

### Making Of Crush's Coaster -Paris au Parc Walt Disney Studios

<http://www.youtube.com/watch?v=gdxJuaJA088>

>> **Class members will watch the following videos** (can assign this to view outside of class is desired)

### America's Thrillmakers - Walt Disney World -52 Min

<http://www.youtube.com/watch?v=xptHfFk0mfM>

OR - **break the series into smaller segments-Allow 2 class periods to view and discuss**

-As a group you will need to decide how to watch the videos listed below:

Part 1: [Building a Thrill Ride : Expedition Everest \(1/5\) - YouTube](#) Checked-OK

Part 2: [Building a Thrill Ride : Expedition Everest \(2/5\) - YouTube](#) Checked-OK

Part 3: [Building a Thrill Ride : Expedition Everest \(3/5\) - YouTube](#) Checked-OK

Part 4: [Building a Thrill Ride : Expedition Everest \(4/5\) - YouTube](#) Checked-OK

Part 5: [Building a Thrill Ride : Expedition Everest \(5/5\) - YouTube](#) Checked-OK

All parts 44 min <http://www.youtube.com/watch?v=2HOiVnUDcOc>

If you would like to demonstrate animations with Roller Coaster 3 see below examples.  
Theme Park Attractions

### Imagineer John's Crush's Coaster RCT3 3:44 min

<http://www.youtube.com/watch?v=2zLQjwsuBX0>

This is a recreation of Crush's Coaster in Walt Disney Studios Paris. I Created this in about 6 hours over the weekend. This also shows the new custom scenery set I have created as this was testing out the set in use. Well here you go keep watching till the end I added a little clip on the end which not many people know about that crush coaster does at night.  
Take into consideration: I have never been on this ride I went to DLRP earlier this year but I only saw the outside of studio 5 as it was still under construction.

Music- From the Crush Coaster Attraction in Disney Land Paris and Intro Theme by Thomas Newman.  
Music: Finding Nemo/ Disney Crush Coaster Attraction audio./Journey to the Island, Jurassic Park-Standard  
YouTube License

## >>> PLAY TIME-

### [The Science of Disney Imagineering: Roller Coaster Ride Builder](#)

2011 Disney - All Rights Reserved. [http://dep.disney.go.com/sodi\\_app/](http://dep.disney.go.com/sodi_app/)



# Chapter 9.

## Exploring Communication Collaboration - Creativity - Web Tools

### Expanding Knowledge

Building Blocks: Communication-Software exploration	pg 98
Building Blocks: Brainstorming-Software exploration	pg 99
Building Blocks: Collaboration-Software exploration-Whiteboards	pg 101
Activity-Building FOUNDATIONAL Knowledge - Brainstorming Exercise	<b>A-pg 104</b>
10 Sites To Make Free Photo Slideshow Online With Music	pg 105



<sup>2</sup> Above image: Walt Disney Company. <http://thewaltdisneycompany.com/> JPEG file

Expanding knowledge of Disney theme park attractions, rides and coaster design from investigations. Students explore the type of attractions, and investigate each for the four Disney parks and the rides and attractions. Students develop research skills in curriculum content area, learn about technical reading and writing, creating the story, explore storyboards, utilize Web 2 tools, and conduct experiments presenting and rehearsing the “Pitch”.

**Explore the following tools to quick start your next stage.**

**A.** Decide which brainstorming tool you will use. Assign one student to use the tool during your "BLUE SKY" discussion.

**B.** In order to decide what the attraction/ride will be, you need to understand the Disney Parks and the attractions that are in each.

## Software Exploration

In order to build you team you will need to explore software in three different areas.

1. Communication
2. Brainstorming
3. Collaboration

### >> 1. Communication

( Provided courtesy of: <http://www.boomwriter.com/home/Schools>

**Creativity-Communication - Boom Writer** - A unique site for students to collaboratively write online in a safe environment.

#### It's easy and it's free.

- The teacher selects or produces his or her own story start, and the students let their imagination and writing skills take over.
- One chapter at a time, the students write, read, and then vote on the submissions they like the most. The winning chapter is then added to the story and the process continues.
- The teacher determines the total number of chapters to be completed, and when the competition is over a new book is ready to be published.



**Wallwisher** [Wallwisher Is Now Padlet](http://wallwisher.com/) <http://wallwisher.com/>

( Provided courtesy of <http://wallwisher.com/>

Wallwisher is basically an online message board where you post "Sticky Notes." You can make one for yourself to help you remember important events and dates, or create one for your

class. You can even choose to approve each sticky note before it is created so that you can monitor what's being said.

## >> Brainstorming

How often have you used brainstorming to solve a problem? Chances are, you've used it at least once, even if you didn't realize it.

For decades, people have used brainstorming to generate ideas, and to come up with creative solutions to problems. However, you need to use brainstorming correctly for it to be fully effective.

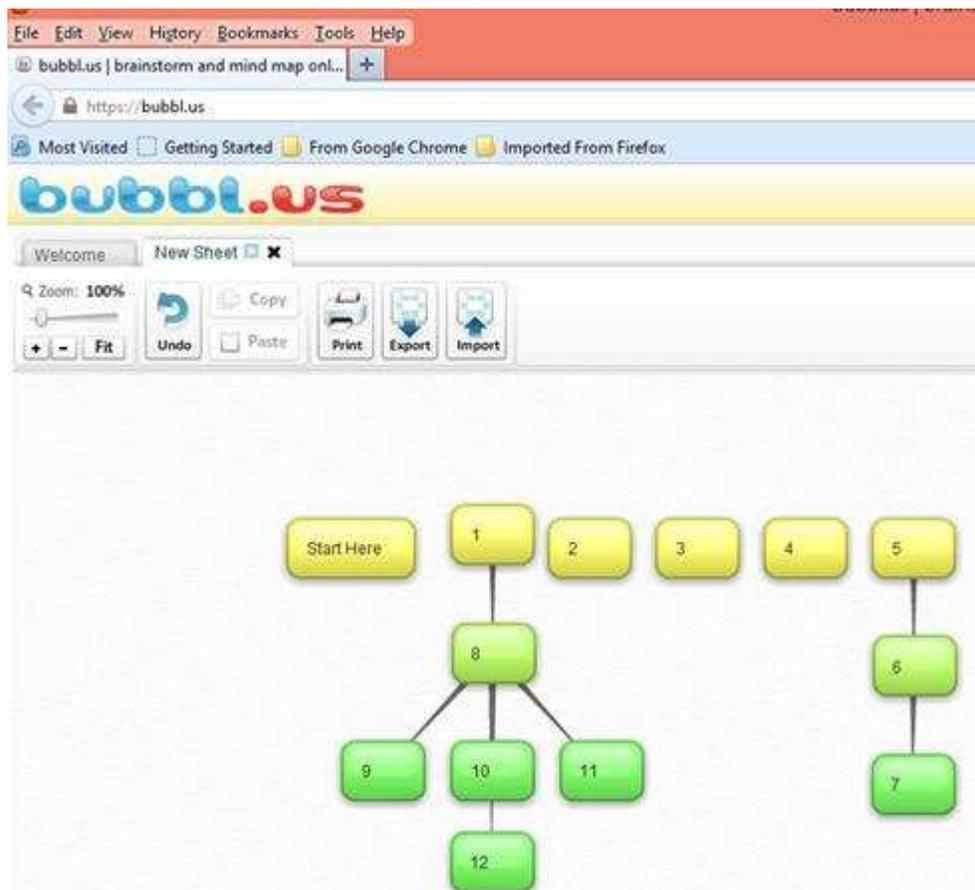
### What is Brainstorming?

Brainstorming combines a relaxed, informal approach to problem solving with lateral thinking. It encourages people to come up with thoughts and ideas that can, at first, seem a bit crazy. Some of these ideas can be crafted into original, creative solutions to a problem, while others can spark even more ideas. This helps to get people unstuck by "jolting" them out of their normal ways of thinking.

Therefore, during brainstorming sessions, people should avoid criticizing or rewarding ideas. You're trying to open up possibilities and break down incorrect assumptions about the problem's limits. Judgment and analysis at this stage stunts idea generation and limit creativity.

#### LINK HERE:

( Provided courtesy of: <https://bubbl.us/>



#### Free [Mind Mapping Web Services](https://bubbl.us/)

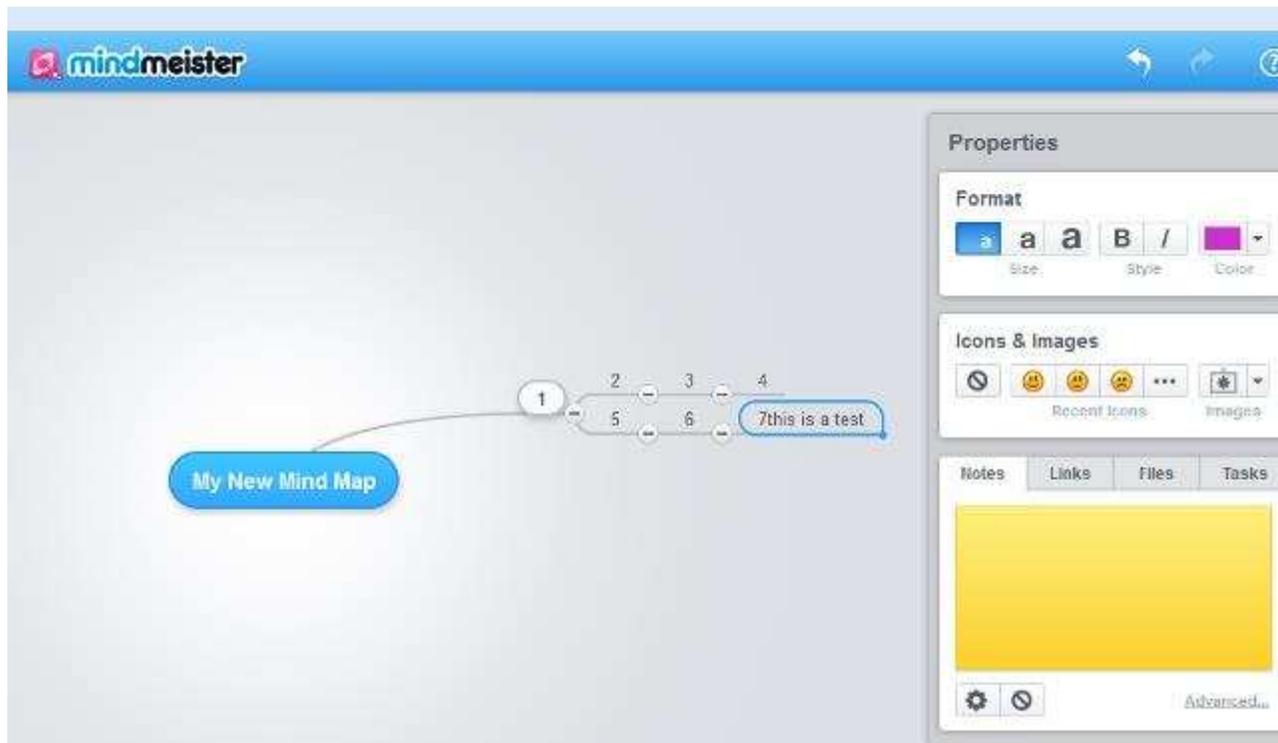
[bubbl.us](https://bubbl.us/) is a **free web-based mind mapping application**. You can **sign up for an account in order to save your mind maps**, but better still, they don't force you to get an account to start creating. The interface could use some work to make it a truly usable application.

<http://www.lifehack.org/articles/technology/11-free-mind-mapping-applications-web-services.html>

## MindMeister

is another web app with varying account options; there's a free account, and several commercial options. It has a fairly nice design and interface in comparison with many other mind mapping [web apps](#) that are available. **Can SAVE MAPS**

( Provided courtesy of <http://www.mindmeister.com/>



## Mind42

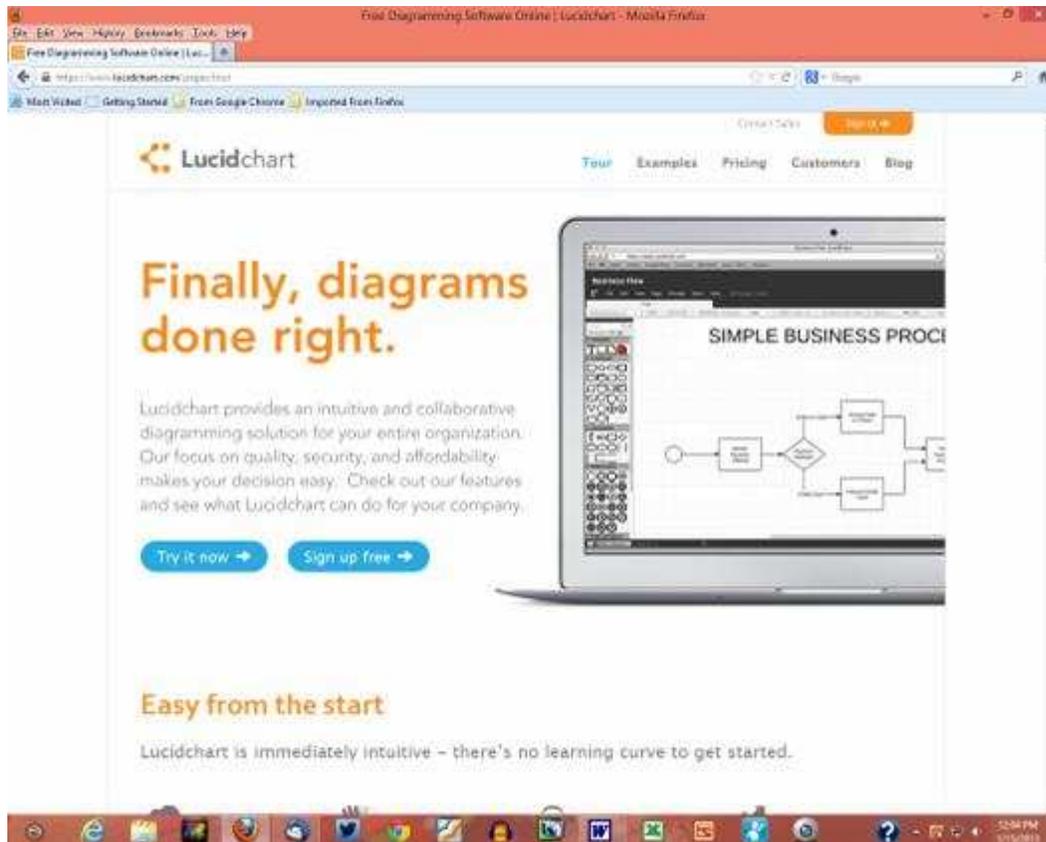
is a totally free mind mapping web app and it is one of my favorites. The interface is a good one, and it has some excellent features such as **easy navigation for large mind maps** with **zoom and bird view** (and branch hiding, but that's pretty standard these days), and the ability to **attach notes and images to branches** . You can also link branches to other sites and see a preview when you rollover the link, which I think is probably the only appropriate use of those preview rollovers anywhere on the net.

**NEED to sign up and reply to activation - e-mail to USE - HAS ADS**

**Mindomo** is another online mind mapping tool. It's neat because you can collaborate in real-time with others and share/embed what you've created. You get three free mind maps. [Mindomo](#) is another mind mapping web app **with both a free account option and a commercial one**. It allows you to share your mind maps with others, and also embed them into your web pages. <http://www.mindomo.com/>

[WiseMapping](#) is another web **app for mind mapping which requires no browser plug-ins at all**. You can share, export and publish your mind maps from the app and there is no commercial account option; everything is free and unlimited. <http://www.wisemapping.com/>

**Webspiration Classroom** - A wonderful site by the creators of Inspiration, designed for grades 5 thru 12. An ideal site for collaborating, brainstorming, and creating outlines with a web 2.0 interface. FREE TEST \$\$ Charge to purchase product  
<http://www.inspiration.com/webspirationclassroom>



## Diagrams Done Right.

We have rethought and redesigned the entire diagramming process to make it as easy as possible. Make flow charts, wireframes, mind maps, and org charts.

Free to \$9.95 / month

( Provided courtesy of <https://www.lucidchart.com/>

## >> Collaboration - White Boards

Ideal site for collaborating, brainstorming, and creating outlines with a web 2.0 interface.

**Team WhiteBoarding with Twiddla - Painless Team Collaboration for ...**

Browse websites in a shared, real-time *whiteboard*, while marking them up, ... Twiddla for Design *Collaboration* Twiddla is Serious Business Mark up Word, ...

**Groupboard: advanced collaborative online whiteboard software**

Advanced *collaborative* online *whiteboard*. Works on all browsers including Android, iPhone and iPad - no plugins required.

**ReadWrite - 5 Free Collaborative Whiteboard Apps For the iPad**

Jul 8, 2011 - It seems as though the minute the iPad was announced, innumerable light bulbs went off as developers and entrepreneurs everywhere came ...

**Conceptboard - Online Whiteboard for Visual Collaboration**

**Conceptboard** is the online *whiteboard* app for your project: Visual team *collaboration* on ideas, drafts and documents simultaneously on your browser, tablet ...

CoSketch.com

start pro contact API bookmarklet

### What is CoSketch.com?

Do you have an idea, a problem or just a cool picture that you quickly want to show a friend?

CoSketch is a multi-user online whiteboard designed to give you the ability to quickly visualize and share your ideas as images.

**Simple sharing**

- Anything you paint will show up for all other users in the room in real time.
- One click to save a sketch as an image for embedding on forums, blogs, etc.

**Zero hassle**

- Runs in all common browsers without plugins or installation.
- Free and without registration.

**Now with Google Maps support!**

- Use google maps as the background for your sketches to show directions or share trips.

[Read more](#) or just [create a sketch](#) and try for yourself.

( Provided courtesy of <http://cosketch.com/>

## **CoSketch.com - Online Whiteboard Collaboration**

CoSketch is a multi-user online *whiteboard* designed to give you the ability to quickly visualize and share your ideas as images. No registration or plugins ...

## **Whiteboard Lite: Collaborative Drawing for iPhone, iPod touch, and ...**

Description. *Collaborate* with friends and family with *Whiteboard*, the easy-to-use *collaborative* drawing app for iPhone, iPod touch, and iPad.

## [Collaborative Whiteboards](#) [« Centre for Learning & Performance ...](#)

Online *collaboration* application that's centered around the *whiteboard*. With a new type of drawing interface that's actually easy and fun to use.

## [Collaborate on a whiteboard](#) - [Communicator](#) - [Office.com](#)

A *whiteboard* is a blank page for notes, drawings, or imported images that meeting participants can work on together. When the meeting is over, you can save ...

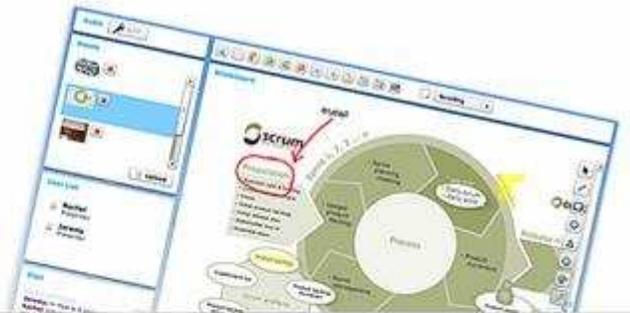
### Simple, effective online collaboration

Multi-user whiteboard, live audio,  
image collaboration, text-chat and more

### Sign Up For Free

It takes just 30 seconds - [Click for a FREE DEMO](#)

112372 rooms created to date!



#### Scribblar is great for

- \* Online training and tutoring
- \* Revising artwork and images
- \* Creative brainstorming
- \* Sales and product demos
- \* Interviews and tests

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- \* Image upload and download
- \* Text chat with userlist
- \* Crystal-clear live audio
- \* No user or session limits

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- \* Your own online classroom tool
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- \* Single sign-on for your users
- \* Add your own logo & branding
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[Find out more](#)

#### Latest Public Rooms

- [aa](#) created on Jan 5, 2013 by sohani01
- [Tutorial](#) created on Jan 5, 2013 by melissahaddleton
- [Naama's Room](#) created on Jan 5, 2013 by udipeled

**"A wonderful tool to engage students in real quality learning experiences and interactions."**

( Provided courtesy of <http://www.scribblar.com/>

## [Scribblar - Free Interactive Online Whiteboard](#)

Simple, effective online *collaboration*. Multi-user *whiteboard*, live audio, image *collaboration*, text-chat and more. Sign Up For Free It takes just 30 seconds ...

## [BaiBoard - Collaborative Whiteboard Collaborate on iPad / PDF](#)

BaiBoard enables users to *collaborate* via integrated online *whiteboard*, PDF annotation and VoIP solutions across the Internet from iPad and Mac.

## Building FOUNDATIONAL Knowledge - Brainstorming Exercise

**Use one of the collaboration sketch pads/boards and share ideas. Students may have to create an account depending on which one they use.**

## Let them play and discover the tools

---

**Wallwisher** [Wallwisher Is Now Padlet](http://wallwisher.com/) <http://wallwisher.com/>

[bubble.us](http://bubble.us) is a **free web-based mind mapping application**. You can **sign up for an account in order to save your mind maps**, but

[MindMeister](http://www.mindmeister.com/) is another web app with varying account options; there's a free account, and several commercial options. It has a fairly nice design and interface in comparison with many other mind mapping [web apps](#) that are available. <http://www.mindmeister.com/>

[Mind42](#) is a totally free mind mapping web app and it is one of my favorites. The interface is a good one, and it has some excellent features such as **easy navigation for large mind maps** with **zoom and bird view** (and branch hiding, but that's pretty standard these days), and the ability to **attach notes and images to branches**. **NEED to sign up and reply to activation - e-mail to USE - HAS ADS**

**Mindomo** online mind mapping tool.-you can collaborate in real-time with others and share/embed what you've created. You get three free mind maps.--**with both a free account option and a commercial one**. It allows you to share your mind maps with others, and also embed them into your web pages. <http://www.mindomo.com/>

[WiseMapping](http://www.wisemapping.com/) is another web **app for mind mapping which requires no browser plug-ins at all**. You can share, export and publish your mind maps from the app and there is no commercial account option; everything is free and unlimited. <http://www.wisemapping.com/>

[Team WhiteBoarding with Twiddla - Painless Team Collaboration for ...](#)  
Browse websites in a shared, real-time *whiteboard*, while marking them up, ... Twiddla for Design  
*Collaboration* Twiddla is Serious Business Mark up Word, ...

[Groupboard: advanced collaborative online whiteboard software](#)  
Advanced *collaborative* online *whiteboard*. Works on all browsers including Android, iPhone and iPad - no plugins required.

[ReadWrite – 5 Free Collaborative Whiteboard Apps For the iPad](#)

[Conceptboard – Online Whiteboard for Visual Collaboration](#)

## 10 Sites To Make Free Photo Slideshow Online With Music

(Thank you for permission to reprint from [CarlCheo.com](http://CarlCheo.com), a technology blog that features great software, tools, and websites.)

Wish to share your memorable trips or events to your friends and family? Photo slideshow is always a great way to make your pictures look more interesting. You don't need any advanced photo or video editing skills to create an excellent and professional looking slideshow. These websites will do the job for you. Simply upload your photos/videos, choose your favorite theme, and share the cool photo slideshow to anyone on the Internet.

Here are the 10 websites to **create photo slideshow online** with background music for free. All of them are web applications that do not require downloads or installations. Some of them have more advanced features such as animations, special effects, etc., which are suitable for those who are willing to spend more time and effort to make a slideshow that is highly customized. Hope you enjoy the list anyway!

### [Kizoa](http://Kizoa.com)



Kizoa is a free slideshow and [collage maker](http://Kizoa.com). You can also store and edit your photos in Kizoa. Similar to Roxia PhotoShow, it has tons of extra features that allow you to add transitions, effects, text, music, animations, etc. In a hurry? No problem. Upload your photos and let Kizoa to randomly select the transitions that will be played between your photos to create a slideshow in 3 clicks.

Besides, you can also convert your photo slideshow into video to share it on Youtube. Simply the **most powerful slideshow creator** on the Internet.

## [PhotoSnack](#)



PhotoSnack is a free photo slideshow maker that is incredibly easy to use. To create a slideshow, first you can choose to upload photos from 6 different sources: *your computer, Facebook, Flickr, Picasa, Photobucket, SmugMug or Instagram*. Then, customize your slideshow by choosing 1 of the 9 free templates. You can also add background music into the slideshow. Upload your own audio file or pick 1 out of the 20 sound tracks available for free.

Lastly, publish your slideshow and it will be available online. You can share the link of your HTML5 slideshow to anyone on the Internet.

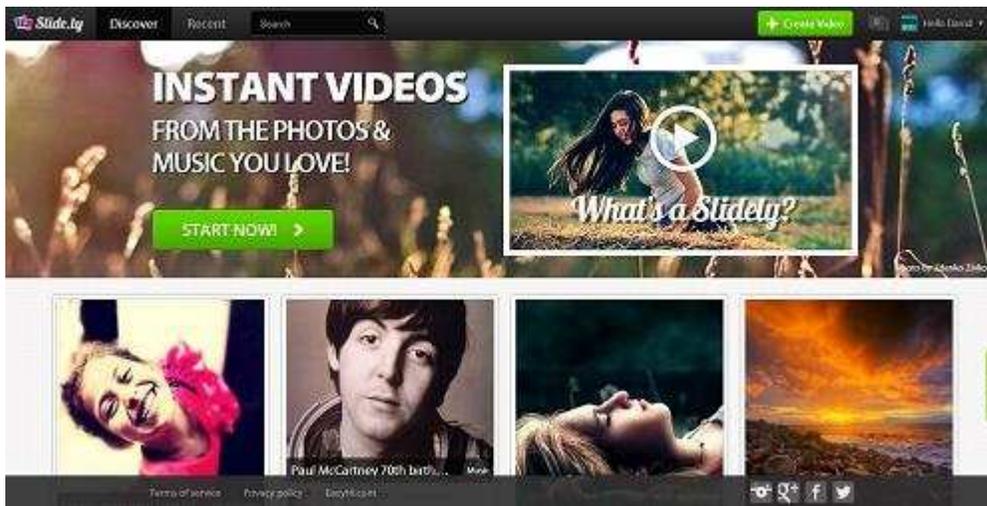
**Read also:** [11 Best Free Online Photo Collage Maker](#)

## [PhotoPeach](#)



3 quick steps are required to make a slideshow instantly with PhotoPeach: Upload & arrange your images, Choose title & music, and Share your show or embed it in your blog/website. Similar to PhotoSnack, it doesn't have many advanced features, which is ideal for users who wish to create simple slideshows without some fancy effects or transitions.

## [Slide.ly](http://Slide.ly)



Slide.ly is a fun and social way to create slideshow videos and share them to your friends and family instantly on social websites. Add photos from *your computer, Facebook, Instagram, Flickr, Picasa, or Google images*. Then, select music from Slide.ly's huge collection of *playlists, Youtube, or upload your own music*. After that, you can add special effects into the video to make it look more professional.

Finally, publish the slideshow video and share it on your Facebook, Twitter, and more! Besides, your video is visible to all Slide.ly users, which people can like, share, and comment on your video.

## [Roxio PhotoShow](http://Roxio PhotoShow)



Roxio PhotoShow is not just a simple slideshow creator, you can make a video slideshow with your own photos and video clips combined. It has a lot more features to offer than the others – fun stickers, cool animated graphics, effects, bubble, border, hundreds of music tracks, over 150 beautiful one-click styles, etc.

Highly recommended to those who are looking for more customization and effects on their photo slideshow.

## [TripAdvisor TripWow](#)



TripAdvisor TripWow is the best travel slideshow maker online. You can easily create a slideshow featuring your vacation pictures and your trip on a map with few simple steps. It has some great travel-themed songs as well as awesome themes that make your picture slideshow look like a movie or TV show.

You can also download the video if it has been viewed more than 10 times online. Definitely a must try for those who are trying to make a cool travel or vacation slideshow.

## [Animoto](#)

There's a reason why Animoto has been featured in several top news websites and blogs such as PCMag, The New York Times, CNN, etc. It auto-generates cool slideshow videos from your photos and images with just few simple steps: Insert photos & videos, Customize your style, and Watch & share the awesomeness of the video. How awesome it is? Check out some of the example videos available at their homepage and you will understand. However, do note that free users are only allow to create videos up to **30 seconds** with limited video styles and music tracks.



## [PicoVico](#)



PicoVico is another free slideshow web application. You can add text slides between photo and a maximum of 30 photos/text can be in the video. The thing that I really like about PicoVico is you can download the video slideshow or export it directly to Facebook/Youtube.

## [123-slideshow](#)



Not impressed by its web interface design? Never mind. You will be impressed by its ability to create flash slideshows of your own images within seconds. [123-slideshow.com](#) is a free flash slideshow creator that is extremely user-friendly.

Firstly, choose 1 out of 8 transition effects that you like and upload 4 – 8 pictures. Next, choose the quality of the slideshow and you are able to download the SWF file immediately.

## [FlixTime](#)



FlixTime allows you to create videos with different media formats such as MP4, FLV, and HD. You can add cover image, photos, videos, music, logo, and text slide into the video. However, you need to buy credits in order to download the videos, which will be stored 48 hours on their servers for free.

# Chapter 10.

## Blue Sky

Summary: Accessing prior knowledge- Investigating to build foundation knowledge	
"Blue Sky" What experience do we want guests to have-how do we make it happen?	pg 112
Disney Concept Art/Sketches-Samples-Examples	pg 114
Disney Brainstorming Method: Dreamer, Realist, and Spoiler	pg 118
What should we dream, design and build?	<b>A-pg 119</b>
Sample sketch-FLOW of the attraction	pg 120
REALITY CHECK >>> Imagineering Tools/Questions	pg 121
Disney Theme Park Attraction Questions- For ALL members of class	<b>A-pg 122</b>
Who can tell me?	pg 123



17. Image above- page 53-68- WDW info. WDW images. [www.wdwinfo.com/](http://www.wdwinfo.com/) JPEG file

**Accessing prior knowledge**

**Investigating to build foundation knowledge**

**Blue Sky** - Evidence of vision-what would happen if....Could we...Maybe we could..or how about? "Blue Sky" is the name that Imagineers give to the theoretical planning process--the bouncing around of ideas about how to design, why to design and what to design. It is the idea board stage of Imagineering. **Blue sky** means that you start with the experience that you want guests to have, and then figure out how to make it happen.

**Phase 1: Accessing prior knowledge – What do I know?**

- A.
- B.
- C.
- D.
- E.

**Phase 2: Investigating to build foundation knowledge-What are the basic building blocks that I have learned?**

- A.
- B.
- C.
- D.
- E.

**Phase 3: Expanding knowledge – What information have I gained from others in my team that I can apply?**

- A.
- B.
- C.
- D.
- E.

**Blue Sky** - the name that Imagineers give to the theoretical planning process--the bouncing around of ideas about how to design, why to design and what to design. It is the idea board stage of Imagineering. Group will brainstorm ideas for theme park attractions--always keeping in mind the story line for the attraction.

Time to put you creative hat on and begin the "BLUE SKY" process. Look over the 4 pages of images and jot down notes on ideas for your "Theme Park" attraction. This is a large group activity where students that have been to one of the Disney parks will tell in one or two sentences about the attraction. SHORT and SWEET.



[How a Toon Elevator helped Mickey](#)



17. All Images this page- WDW info. WDW images. [www.wdwinfo.com/](http://www.wdwinfo.com/) JPEG file



\*Above images this page - Brainstorming Stock Photo 94123471- Chip Andco. JPEG file

# Disney Concept Art-Sketches



**Notes:**  
Sketch of the attraction/ride - Entrance Queue



17. All Images this page- WDW info. WDW images.  
[www.wdwinfo.com/](http://www.wdwinfo.com/) JPEG file

**Notes:**



## Sketch of the attraction/ride- Flow of main points

Notes:



Notes:



Notes:

<sup>3</sup>. Allears. WDW images. [www.allears.net/](http://www.allears.net/) JPEG file

<sup>17</sup>. Images below- WDW info. WDW images. [www.wdwinfo.com/](http://www.wdwinfo.com/) JPEG file



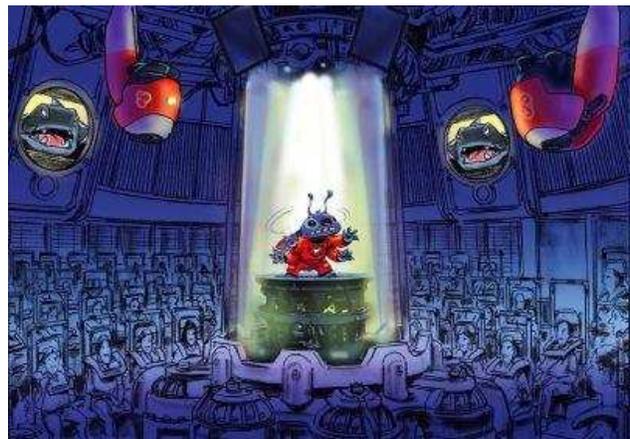
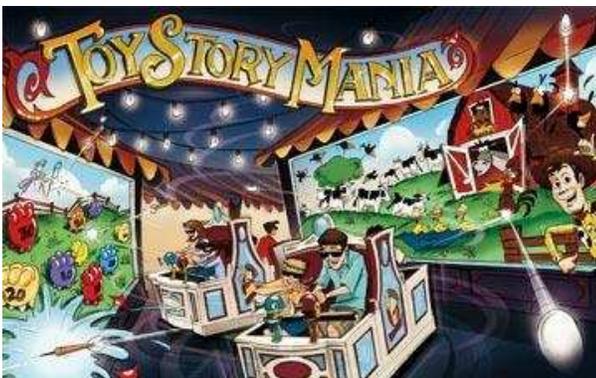
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Notes:

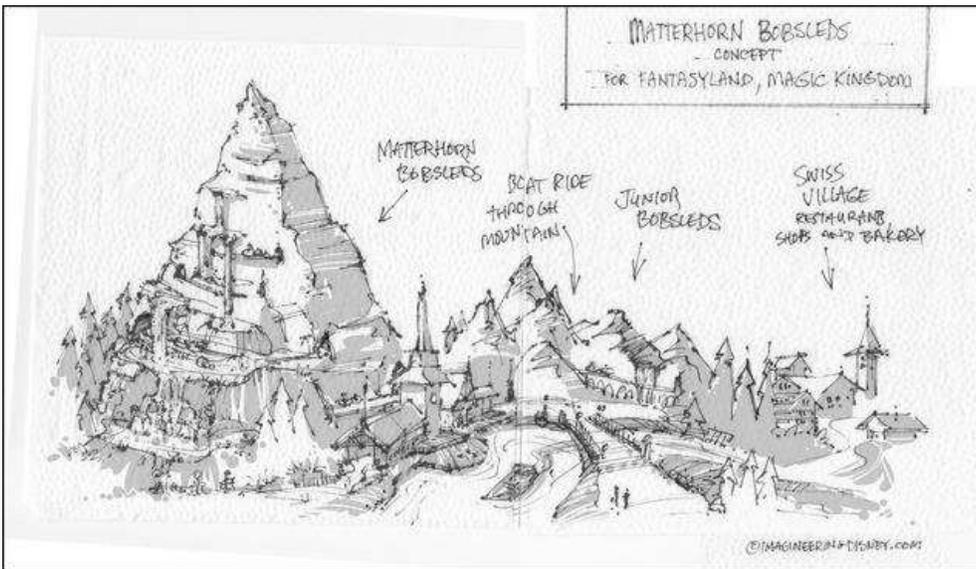
3. Allears. WDW images. [www.allears.net/](http://www.allears.net/) JPEG file

**Samples-Example:**





20. Inside The Magic. Above Concept Art.  
[www.insidethemagic.net](http://www.insidethemagic.net) JPEG file

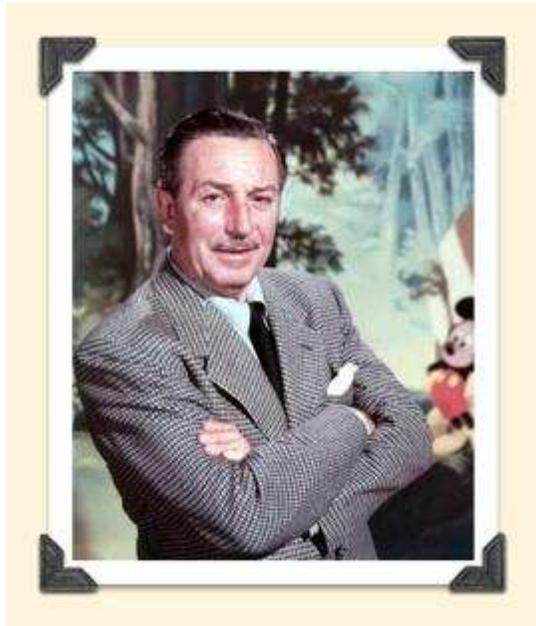


20. Inside The Magic. Above Concept Art.  
[www.insidethemagic.net](http://www.insidethemagic.net) JPEG file

20. Inside The Magic. Above Concept Art.  
[www.insidethemagic.net](http://www.insidethemagic.net) JPEG file

## Notes:

# Disney Brainstorming Method: Dreamer, Realist, and Spoiler



It is said, that film producer and innovator, Walt Disney used to think-up and refine ideas by breaking the process into three distinct chunks. The dreamer, the realist, and the spoiler (or critic).

## **The Dreamer**

This stage was for fantasizing. Creating the most fantastic and absurd ideas as possible. No filter. Just wonderful, raw ideas. This stage was about “why not?”

## **The Realist**

As the Realist, the Dreamer ideas would be re-examined, and re-worked into something more practical. It wasn't about the reasons it could not be achieved, but only about it could be done. This stage is about “how?”

## **The Spoiler**

The third stage he would become the critic... shooting holes in the ideas he had come up with.

**It is said, the ideas that survived this process were the ones Walt would work on.**

## >> Let's Go But-What should we dream, design and build?

Blue Sky means that you start with the experience that you want guests to have, and then figure out how to make it happen.

### What type of ride/attraction should we do?

- A. Gravity rides
- B. Boat rides
- C. Simulators
- D. Guide Rail / Track
- E. Dark rides
- F. Dark rides
- G. Carney rides
- H. Walk through/Sit Down/Theatre
- I. You drive

What park does the attraction/ride it fit in?

What "Land" of the Disney park does the attraction/ride fit in?( i.e. Adventure Land Fantasy Land

What is the " Storytelling " piece of the "**Themed**" attraction?

How will you "PLUS" the attraction?

What is the "Backstory"?

How will you use and what role does "Animatronics" play?

Do you have an "Interactive Queues" in a your attraction? What is it?

Describe the basic 'Flow' of the attraction from start to finish

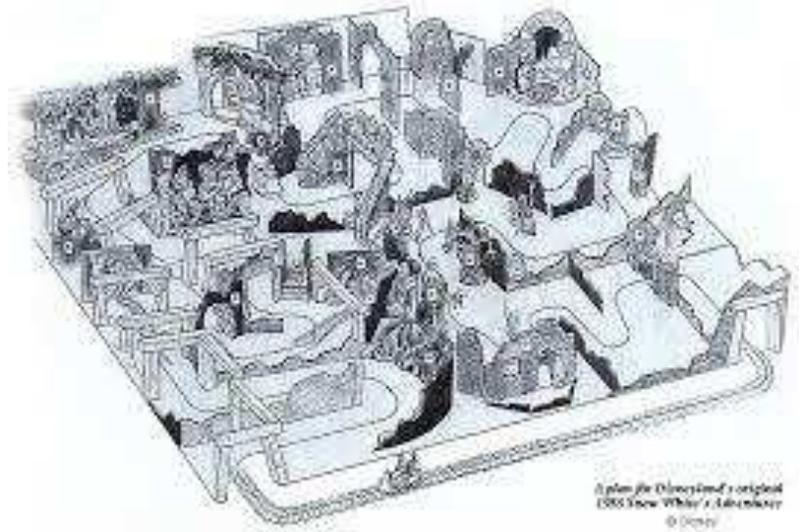
**BACKSTORY**

**QUEUE**

**RIDE**

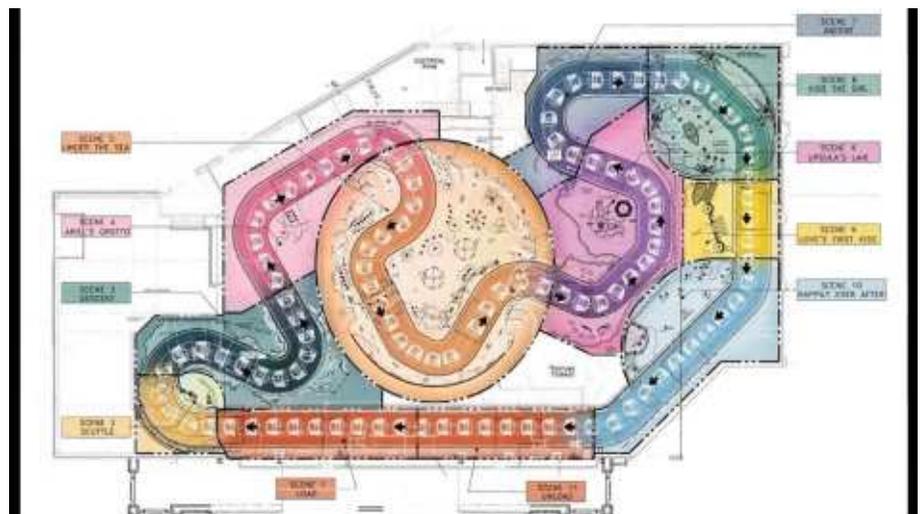
# Sample sketches-FLOW of the attraction

NOTES:



NOTES:

NOTES:



32. The Ryman Centennial: « Progress City, U.S.A. [progresscityusa.com](http://progresscityusa.com) JPEG file

20. Inside The Magic. Above Concept Art. [www.insidethemagic.net](http://www.insidethemagic.net) JPEG file

MY sample sketch-FLOW of the attraction

## **REALITY CHECK >>> Imagineering Tools/Questions**

1. How should we approach the new ideas?
2. What is the need to be met?
3. Are there some new technologies we can use?
4. What are the "Big Picture" ideas?
5. What is the budget?
6. What is the concept (organized around a main idea or theme) ?

## >>> Building FOUNDATIONAL Knowledge

### Disney Theme Park Attraction Questions- For ALL members of class

1. To THINK about -Purpose of attraction

-----  
Education

Thrills

WOW

Edutainment

Relax

Inform

Engage

### Building FOUNDATIONAL Knowledge within YOUR group:

A. (You will need to rely on participants that have been to the Disney Parks 1-2-3 or more times)

(Call on members that are attending the workshop)

B. Answer the following questions:

### Applies to ANY of the Disney Parks:

**Magic K – Animal K – Hollywood S - EPCOT or Disneyland**

A. Best attraction/ride for THRILLS – WHERE-What Park

B. Best attraction/ride for WOW – WHERE-What Park

C. Best attraction/ride for EDUCATION – WHERE-What Park

D. Best attraction for kids –4-8 years old – WHERE-What Park

What is your favorite and WHY?

**MAGIC KINGDOM** – who can tell me:

Best attraction/ride for THRILLS

Best attraction/ride for WOW

Best attraction/ride for EDUCATION

Best attraction/ride for BEST Queue

Best attraction/ride for NOT so hot Queue

Best attraction/ride for THEMING

Get rid of

Bring back

## **HOLLYWOOD STUDIOS — who can tell me?**

Best attraction/ride for THRILLS

Best attraction/ride for WOW

Best attraction/ride for EDUCATION

Best attraction/ride for BEST Q

Best attraction/ride for NOT so hot Q

Best attraction/ride for THEMING

Get rid of

Bring back

## **ANIMAL KINGDOM – who can tell me:**

Best attraction/ride for THRILLS

Best attraction/ride for WOW

Best attraction/ride for EDUCATION

Best attraction/ride for BEST Q

Best attraction/ride for NOT so hot Q

Best attraction/ride for THEMING

Get rid of

Bring back

## **EPCOT – who can tell me:**

Best attraction/ride for THRILLS

Best attraction/ride for WOW

Best attraction/ride for EDUCATION

Best attraction/ride for BEST Q

Best attraction/ride for NOT so hot Q

Best attraction/ride for THEMING

Get rid of

Bring back

# Chapter 11.

## Story Mechanics - Creating the Story

### Practice Assignments-Storytelling-Words-Six Words-Our Town Projects

A-pg 126

Mickey's Ten Commandments

pg 129

Creating the Story- Build your story

pg 130

Fitting Story To The Audience

pg 132

Build your story: Outline points in your story

pg 133

### Storyboard-Software Tools for "Telling Your Story"

A-pg 134

Activity: Storyboard Software

A-pg 135

Activity : 10 Great Tools for Storyboarding

A-pg 135

Activity: 9 Creative Storytelling Tools- Wish You Were A Student Again

A-pg 140

Six Common Pitfalls of Animation Pitches

pg 141

Disney - Ultimate Attraction Guide ( 6 Stages

pg 142

### Poster Attraction Design - Telling Our Story Visually - Assignment

The Best 8 Tools to Create Posters for your Classroom

pg 143

Attraction Poster Project and examples -

pg 144



<sup>21</sup>.[AnimationWorld](http://www.animationworld.com) So, Is This Where I'm Supposed to Laugh?. Web Image. [www.awn.com](http://www.awn.com) JPEG file

Expanding knowledge of Disney theme park attractions, rides and coaster design from investigations. Students develop research skills in curriculum content areas, learn about technical reading and writing, creating the story, explore storyboards, utilize Web 2 tools, and conduct experiments presenting and rehearsing the "Pitch".

**Storytelling** - Evidence of Inspiration, creativity, creative space, Story Weaving, Development, Exposition Plan (what your story is about), and Story Mechanics. The ride then moves on to the storytelling phase--unlike most theme parks, Disney prides itself on telling stories throughout its entire enterprise. The theme parks are no exception. This can also encompass or lead into a research and development phase.

**In order to build our "Storytelling" skills the following applications, software and links have been provided.**

**A. Assignment/Exercise : Words**

1. Groups of 3
2. Reflect on each of the photos and each person share with others the ONE single word that describes the meaning in the photo.

<sup>33</sup>. All images below-Ben Gundersheimer Whately, United States Creative Commons. JPEG files



## B. Assignment- 6 Words

### [Illustrated Six-Word Memoirs by Students from Grade School to Grad School](#)

[Will Richardson](#)@willrich45 Illustrated Six-Word Memoirs by Students from Grade School to Grad School [buff.ly/VP3Wj0](http://buff.ly/VP3Wj0) #edchat Love these

[http://www.brainpickings.org/index.php/2013/01/09/six-word-memoirs-students/?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+brainpickings%2Frss+%28Brain+Pickings%29](http://www.brainpickings.org/index.php/2013/01/09/six-word-memoirs-students/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+brainpickings%2Frss+%28Brain+Pickings%29)

by [Maria Popova](#) *"The constraint fuels rather than limits our creativity."*

In 2006, **Larry Smith** presented a challenge to his community at [SMITH Magazine](#): How would you tell your life's story if you could only use six words? The question, inspired by the legend that Hemingway was once challenged to write an entire novel in just six words, spurred a flurry of responses — funny, heartbreaking, moving, somewhere between [PostSecret](#) and [Félix Fénéon's three-word reports](#). [Things Don't Have To Be Complicated: Illustrated Six-Word Memoirs by Students Making Sense of the World](#), comes from [TEDBooks](#) and collects dozens of visual six-word autobiographies from students between the ages of 8 and 35.

As an autobiographical challenge, **the six-word limitation forces us to pinpoint who we are** and what matters most.

The micro-memoirs are divided into four sections — grade school, high school, college, and graduate school — and touch, with equal parts wit and disarming candor, on everything from [teenagers' internal clocks](#) to the escapism of [Alice in Wonderland](#).

### **Project:**

- 1. Write a 6 word statement**
- 2. Search the web for a image the defines the statement**
- 3. Find images in Google, Printerest, Tumbler or Instragram**

### **Examples: 6 words examples**

I made people forget time.

"Keep on going, it gets better."

I had nothing better to do.

Long days, short nights: working Mom.

Embrace the day...smile at someone

Saying goodbye is hard to do.

Woke up old surprised now what

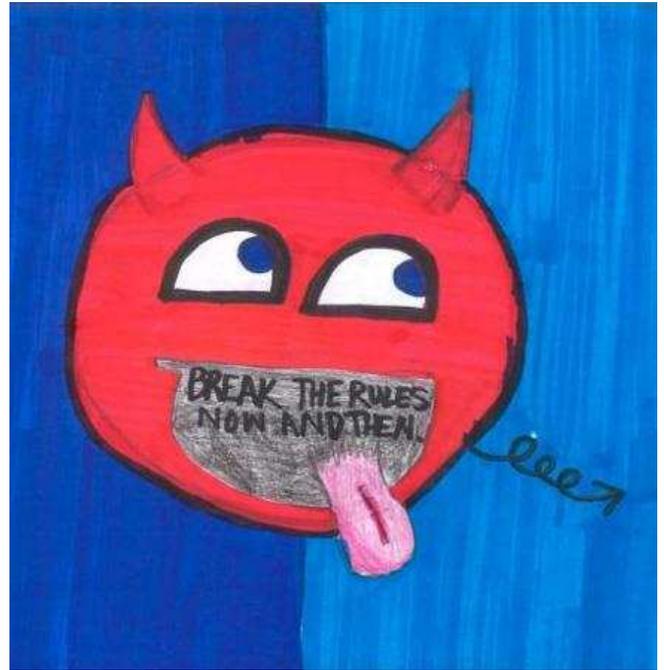
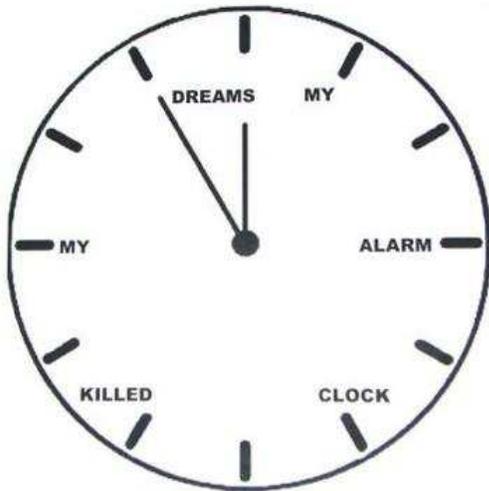
We met. We loved. He left.

I still believe in Santa Claus.

Still don't know what I'm doing.

Successful outside, empty inside. Why bother?

I should have never said goodbye



## C. Assignment/Exercise Tell Me A Story

### 1. Look over the lyrics to the song

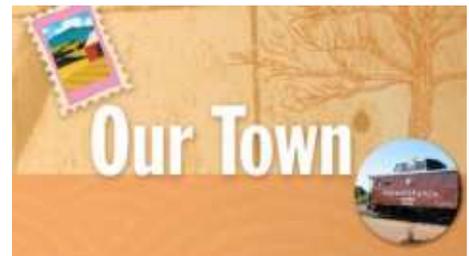
#### **Our Town**- [Thanks to gjcoram@yahoo.com for lyrics]

Long ago, but not so very long ago  
The world was different, oh yes it was  
You settled down and you built a town and made it live  
And you watched it grow  
It was your town

Time goes by, time brings changes, you change, too  
Nothing comes that you can't handle, so on you go  
Never see it coming, the world caves in on you  
On your town  
Nothing you can do.

Main street isn't main street anymore  
Lights don't shine as brightly as they shone before  
Tell the truth, lights don't shine at all  
In our town

Sun comes up each morning  
Just like it's always done  
Get up, go to work, start the day,  
Open up for business that's never gonna come  
As the world rolls by a million miles away



Main street isn't main street anymore  
 No one seems to need us like they did before  
 It's hard to find a reason left to stay  
 But it's our town  
 Love it anyway  
 Come what may, it's our town.



33. All images below-Ben Gundersheimer Whately,  
 United States Creative Commons. JPEG files

2. [Review the lyrics](#) of the song and decide on 15 photos they would describe the theme of that particular topic on the song.

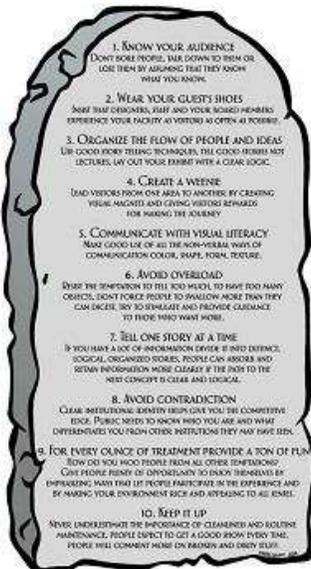
3. [Search for images](#) in Google, Pinterest, Tumbler or Instagram

4. [Copy each photo and paste](#) it into the line of the song that applies that theme

## Expanding Knowledge –YOUR Turn ( Read Mickey's 10 Commandments >>> Mickey's Ten Commandments

Every theme park designer should know what's been done in the past. Benchmarks and precedents are extremely important. With that in mind, you should learn the ten guidelines to theme park design developed by Walt Disney Imagineering President Marty Sklar.

Image: David Weeks: The Ten Commandments Image. [davidweeksmagic.blogspot.com](http://davidweeksmagic.blogspot.com) JPEG file



1. Know your audience - **Don't bore people, talk down to them or lose them by assuming that they know what you know.**
2. Wear your guest's shoes - **Insist that designers, staff and your board members experience your facility as visitors as often as possible.**
3. Organize the flow of people and ideas - **Use good story telling techniques, tell good stories not lectures, lay out your exhibit with a clear logic.**
4. Create a weenie - **Lead visitors from one area to another by creating visual magnets and giving visitors rewards for making the journey**
5. Communicate with visual literacy - **Make good use of all the non-verbal ways of communication - color, shape, form, texture.**
6. Avoid overload - **Resist the temptation to tell too much, to have too many objects, don't force people to swallow more than they can digest, try to stimulate and provide guidance to those who want more.**

7. Tell one story at a time - **If you have a lot of information divide it into distinct, logical, organized stories, people can absorb and retain information more clearly if the path to the next concept is clear and logical.**

8. Avoid contradiction - **Clear institutional identity helps give you the competitive edge. Public needs to know who you are and what differentiates you from other institutions they may have seen.**

9. For every ounce of treatment , provide a ton of fun - **How do you woo people from all other temptations? Give people plenty of opportunity to enjoy themselves by emphasizing ways that let people participate in the experience and by making your environment rich and appealing to all senses.**

10. Keep it up - **Never underestimate the importance of cleanliness and routine maintenance, people expect to get a good show every time, people will comment more on broken and dirty stuff.**

**Watch this video of FIND Yourself**

<http://www.youtube.com/watch?v=XxXY2-44bCs>

<http://www.youtube.com/watch?v=do3EYyVMNf8>

<http://www.youtube.com/watch?v=4mX-exYaOUY>

<http://www.youtube.com/watch?v=1ZKXU0I3XtQ>

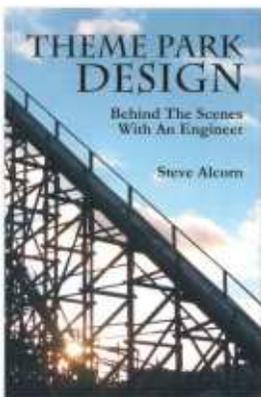
-----  
**Jeff Dixon-Author .... "Key To The Kingdom"**

"That is the power of a good story. It can encourage, it can make you laugh, it can bring joy. It will make you think, it will tap into your hidden emotions, and it can make you cry. The power of a story can also bring about healing, give you peace, and change your life!"

I was hooked on this story from page one, but that quote absolutely had me hook-line-sinker to the very end!

**That quote not only described lots of books that I have read lately, but it described the work of Jeff Dixon to a T. His work is mesmerizing!**

**>>> "Creating the Story "**

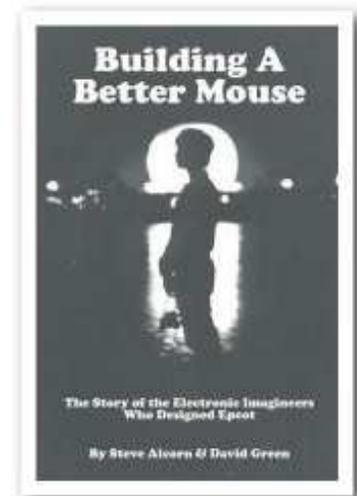


[Theme Park Design: Behind The Scenes ...](#)

> Steve Alcorn

(Illustration provided courtesy of Steve Alcorn web site and his 2 books)

[Building A Better Mouse: The Story Of The Electronic Imagineers Who Designed Epcot](#)

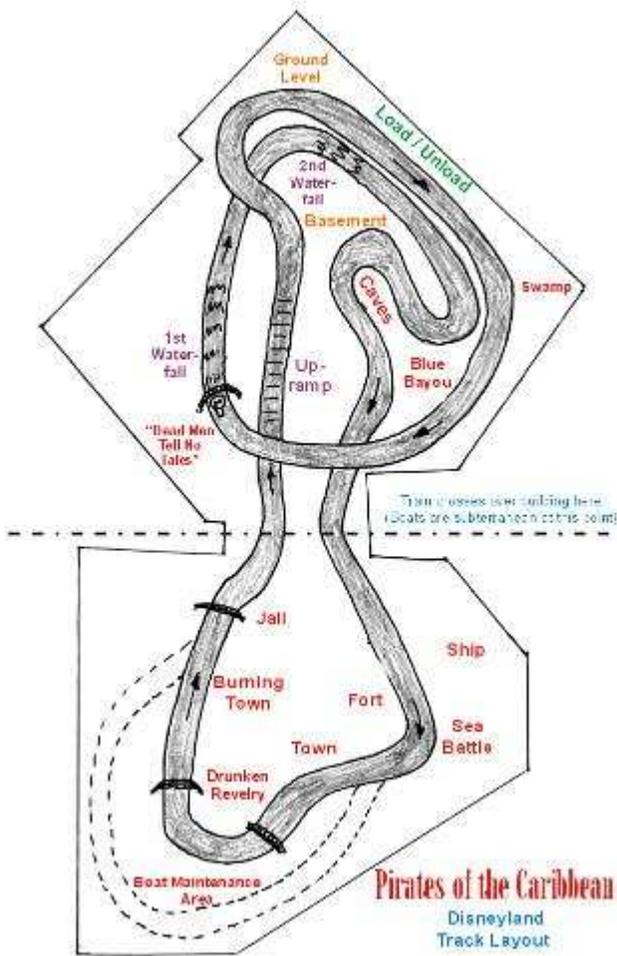


(Following Information/data provided courtesy of Steve Alcorn web site/on-line class-**Theme Park Design Workshop**-(C) 2009 Steve Alcorn and his two books)

" Let's take an example. A roller coaster careens through a darkened room over a faintly illuminated cityscape. Enthralling? Not really, there's no story.

**Take two.** A rock band is late for a concert at the Hollywood Bowl. They invite you to hop in their limo and go careening through the Hollywood Hills and all around the L.A. freeway system to make it on time. That's the story behind Disney MGM's Rock 'n Roller coaster, and it works.

**How about this one:** you climb aboard a BART subway train. It pulls out of the station, then begins to shake as an earthquake strikes. Fires erupt, and a flood comes cascading down the tunnel, extinguishing the flames and splashing over the train. Exciting? I guess. But not completely fulfilling. Why? They forgot to tell us why we were getting on the train, where it was going, and what our mission was. The name of this attraction at Universal Studios Florida is Earthquake, so we knew what to expect when we got on. But there was no underlying story to get us involved. "



**"Here are two more real ones, one that doesn't work, one that does:**

A boat glides through a dark tunnel. It passes a volcano, people at a bazaar trying to sell us things, Mayan ruins, dancing dolls with colorful costumes, and fiber-optic fireworks.

A boat glides through a dark tunnel. It passes a ship full of pirates and a fort. A battle is underway. Cannon balls whiz overhead, and explosions dot the water. Farther along the pirates have seized the village and are auctioning off the women, stealing treasures, and setting fire to the buildings. As we barely escape from the burning timbers we see prisoners still trapped in the jail, trying to lure a dog into bringing them the keys to their cell.

Which ride has a story, the Mexico pavilion at Epcot or Pirates of the Caribbean?

Sometimes the story is just too complicated for the ride. The Lord of the Rings makes a great book and movie trilogy, but would it make a good ride? Of course not. Rides with more complicated storylines are often best implemented using simulators. Here it is customary to have a

narrator – often the driver – who can summarize the adventure as it proceeds. And since simulator rides can be as long as ten minutes, there's more opportunity to convey the story."

**>>> Assignment** :Craft a story line for your attraction. One paragraph - three sentence maximum.

(Following Information/data provided courtesy of Steve Alcorn web site/on-line class-**Theme Park Design Workshop**-(C) 2009 Steve Alcorn and his two books)

## "Fitting Story to Audience"

It's essential to know your audience when designing an attraction. This process of evaluating the audience begins almost from the first moment of blue-sky and doesn't end until the concept moves from Art Direction to Engineering.

When the Las Vegas Hilton decided to install the Star Trek experience, they made a calculated decision to recreate the Starship Enterprise from the television series Star Trek: The Next Generation. They didn't use starships from the classic series of the late '60s or from more recent sequels, such as Star Trek Voyager. Why did they make this calculated decision?

It's because they knew their audience. The majority of people likely to visit the Star Trek Experience are from an age group that would've watched Next Generation on television, but perhaps not the classic television show (except maybe in reruns). "

## Online Theme Park Engineering Class Peeks Behind the Scenes

[http://www.themedattraction.com/theme\\_park\\_engineering.html](http://www.themedattraction.com/theme_park_engineering.html)

A new session of Steve Alcorn's Online Theme Park Engineering Class begins every month. For more information and to enroll, visit [www.themeparkengineering.com](http://www.themeparkengineering.com)

## Build your story:

Make an outline of the most important points in your attraction/ride following **Mickey's 10 Commandments**

1. Know your audience
2. Wear your guest's shoes
3. Organize the flow of people and ideas
4. Create a weenie
5. Communicate with visual literacy
6. Avoid overload

7. Tell one story at a time
8. Avoid contradiction
9. For every ounce of treatment , provide a ton of fun
10. Keep it up

## Outline

- I
- II
- III

## Story board Software Tools for "Telling Your Story"

<sup>21</sup>. [AnimationWorld](http://www.awn.com) So, Is This Where I'm Supposed to Laugh?. Web Image. [www.awn.com](http://www.awn.com) JPEG file



Walt Disney "Pitching" the story

So, Is This Where I'm Supposed to Laugh?: Notable Disasters in the Art of Pitching.

Tom Sito highlights a bit of the history of pitching in addition to some classic pitching disasters from Walt's days to today.

<http://www.awn.com/articles/production/so-where-i-m-supposed-laugh-notable-disasters-art-pitching>

## >>> Story board-Storytelling

>>> Watch the video:

## Radiator Springs Racers sneak peek at Cars Land in Disney's California Adventure

<http://www.youtube.com/watch?v=smbKsrnT3B8>

Here are some other tools you can use for Digital Storytelling:

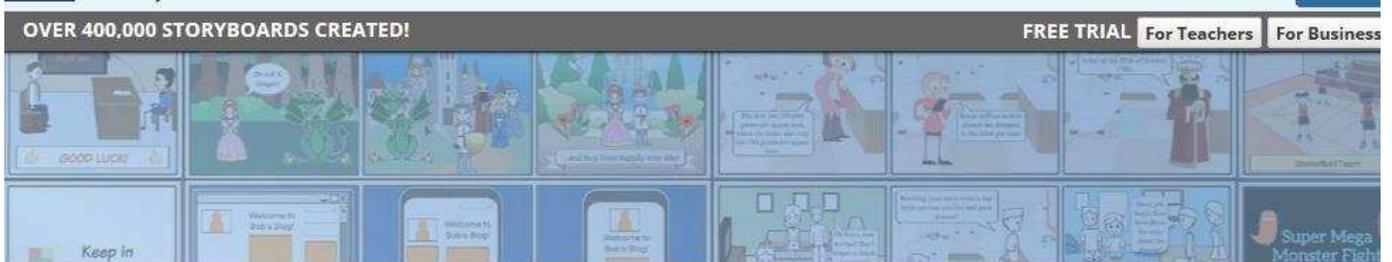
- [Xtranormal](#)
- 
- 
- [Go Animate](#)
- 
- 
- [ToonDoo](#)

## Storyboard Software

### [Welcome to Storyboard That – The FREE online storyboard creator ...](#)

Looking for an amazing, fun, free, and easy to use online *storyboard* creator? Storyboard That is a cutting edge Web 2.0 tool for rapidly creating amazing storyboards, no art skills needed. Great for business meetings and in the classroom .. **Free 14-Day Trial** - Teachers - \$4.95 Per Month





**STORYBOARD THAT**  
*The World's Best Online Storyboard Creator*

Create a Storyboard »



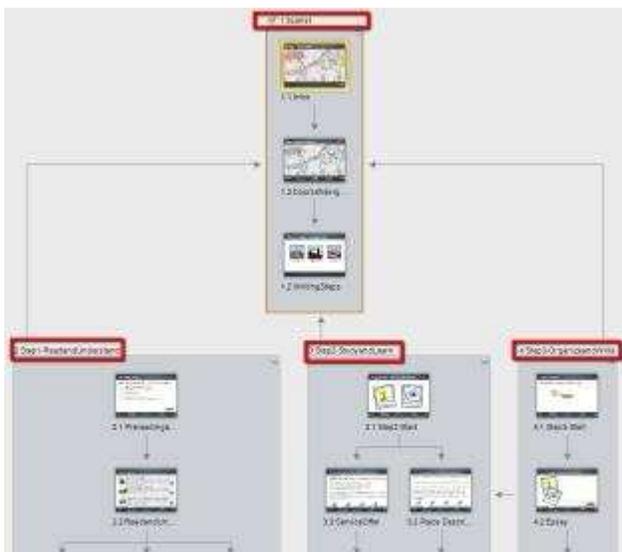
# 10 Great Tools for Storyboarding

Posted on by [mayraixavillar](http://mayraixavillar.wordpress.com)

<http://mayraixavillar.wordpress.com/2012/11/05/10-great-tools-for-storyboarding/>

## 1- Desktop Applications

### [Articulate Storyline](#)

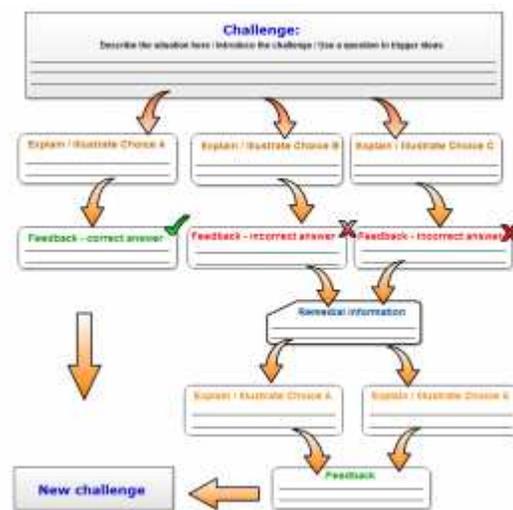


As I said in that forum thread, the new Articulate Storyline is a wonderful tool to show the general structure of your courses. The Story View displays the overall project organization, making it very easy to identify scenes, information flow, different relationships among pages (screens) and so on. In addition, I can use annotated screenshots to communicate my ideas more effectively.

# Articulate Storyline

## Mind Maps and PowerPoint

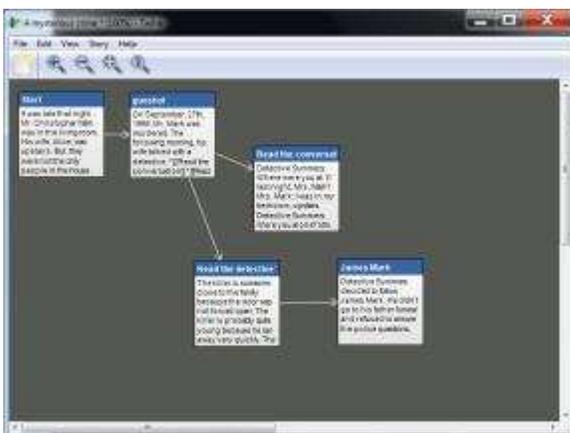
I have also used mind maps and diagrams created with a free online tool called [diagram.ly](http://diagram.ly) and also commercial software, such as [MindManager](http://MindManager). The mind map you can see in the slideshow below was created with diagram.ly and it is based on Tom Kulhmann's useful suggestions on [building branched eLearning scenarios](http://building branched eLearning scenarios). This approach has proven to be very useful for coming to an agreement on fundamental aspects before developing a functional prototype in PowerPoint.



[diagram.ly](http://diagram.ly)

## [Twine](http://twine.mudpress.com)

This is a quite simple and free application to create a non-linear story that allows you to graphically organize how your scenarios will unfold. You can read Cathy Moore's impressions about Twine [here](http://here) and watch [this video](http://this video) to get started. In the flowchart view, each page or scene is



displayed in small boxes that are linked according to the learner's options. So as you write your story, you build a map of possible paths. The final output is a single web page that you can share with

stakeholders and something that works as a functional prototype too.

## [Celtx](#)

This is a free tool that was included in Craig Weiss' recent [list of course authoring tools](#) and allows you to write audiovisual scripts, plays, comic books and film storyboards. You can include your own pictures and sketches together with written descriptions of your scenes, scripts, notes, directions and so on. I have just started using this product but it seems to be a robust pre-production system with standard script formats, media integration and possibilities for collaboration. You can download it [here](#).

## 2- Free iPad Apps

**Drawing apps:** [Paper](#) , [Bamboo paper](#) and [SketchBook Express](#)

I have left the best for last. Most people think that mobile devices are just great for content consumption at the exact moment of need. However, I believe that mobile devices make me more productive and creative and this is why I love CREATING content by using, particularly, my iPad.

In my honest opinion, intuitive drawing apps that have been created from the ground up for natural touch gestures are great for idea generation as they stimulate the usual way our brain works for making connections. Apps like Paper by 53, Bamboo Paper and SketchBook Express help me capture and sketch my ideas as well as create and explore UI/UX designs, graphics and data visualizations and a new course structure and navigation.



## [Animation Desk Lite](#)

This is a more sophisticated app than the previous three, but if you want to free your imagination and find new sources of inspiration, it is worthwhile to try it. You can create hand-drawn animations by

using different tools like brushes and palettes as well as professional animation resources like frames, skins and close-up view. You can even create an animation and embed it in your eLearning courses since it can be exported as a YouTube video.

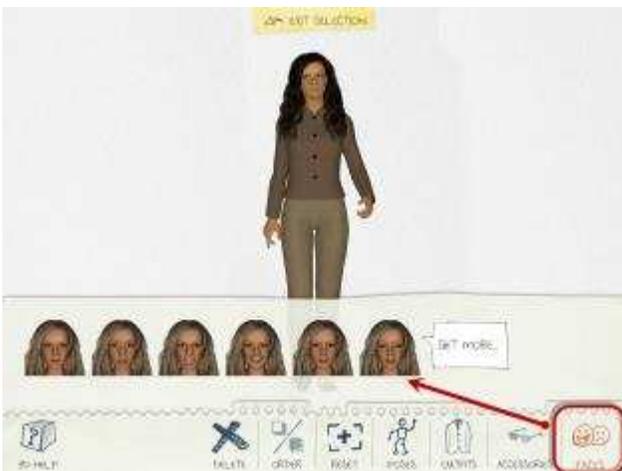


[Storyboards 3D](#)

By far, this is my favorite app for storyboarding. If you lack drawing skills or just don't have enough time, this is a great tool for quickly drafting and presenting your ideas. You can position and rotate 3D characters and objects in all directions, include text blocks and speech bubbles, insert photos in every shot or scene, add notes and even record audio. You might find the free version a little bit limiting but you can purchase packs and develop a whole story right there on you iPad.

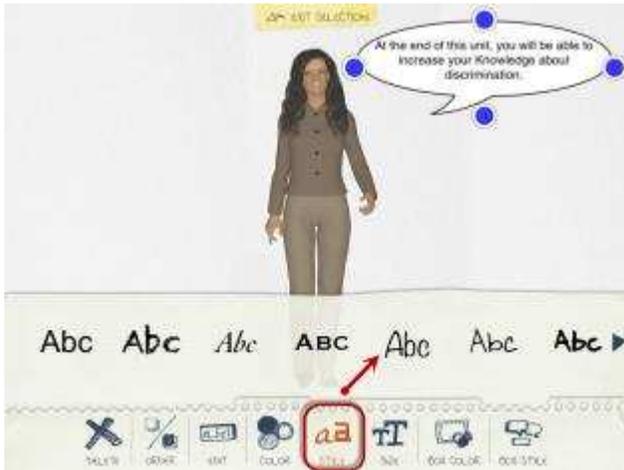


Storyboards 3D: Give a title to your project



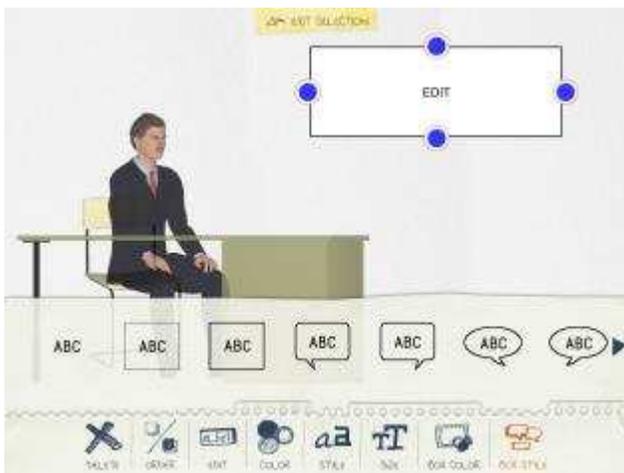
### Storyboards 3D: Character's expressions

### Storyboards 3D: Script notes



Storyboards 3D: Font Styles

### Storyboards 3D: Add a new scene



Storyboards 3D: Object Placement



Storyboards 3D: Organize shots

### Storyboards 3D: Characters' poses



Storyboards 3D: Scenes Overview

## 9 Creative Storytelling Tools That Will Make You Wish You Were A Student Again

By Kim Fortso <http://thejournal.com/articles/2012/10/22/9-storytelling-ipad-apps-and-web-tools.aspx>

### 1. [Popplet](#)

Virtual mind-mapping tool that allows users to create digital mind webs by embedding content from the internet. The app features bright colors and clean design, and can nudge students along as they create their own narratives by serving as a brainstorming tool. Some use it to frame a story-[students] can map out their writing.

### 2. [My StoryMaker](#)

Colorful characters (think pirates and little blue men), whimsical props and scenery and an endless number of ways to put them together. "My StoryMaker lets you scaffold what you're doing with the app," Bellow said. "For instance, if you have two characters--a witch and a genie holding an apple--you can click on the genie and say 'give,' and the app will write, 'The genie gives the apple to the witch,'" Bellow explained. "But what I love most about it is that you can actually alter the story in any way you want. You can incorporate vocabulary words and all sorts of material." Full disclosure: it's kind of fun for adults, too.

### 3. [StoryLines for Schools](#)

Described as a "game of 'telephone' with pictures" on the iTunes store. Encourages students to develop stories collaboratively. One student types a sentence on the mobile app before passing it to a classmate, who illustrates an interpretation of the sentence. A third student describes the sketch, and so forth. Bellow recommended that StoryLines for Schools be used as a "story-planning app"

### 4. [ZooBurst](#)

ZooBurst brings stories to life through virtual 3D pop-up books. Students write scripts, record videos and voiceover, and arrange characters and props by uploading original artwork or selecting items from a gallery of more than ten thousand free images. The app's real trick is an augmented reality QR code that, when held up to a webcam, sends the scene into the room. As the characters dance in front of students' eyes, they can turn the pages with the motion of their hands.

### 5. [Sock Puppets](#)

An homage to those endearing creatures from the pre-iPad era, this mobile app lets students record their own dialogue to be acted out by--sock puppets. Drag-and-drop scenery and a voice modifier that adapts a speaker's tone of voice to a character make it a great tool for younger kids learning the foundation of story, Bellow said.

### 6. [Meograph](#)

Criswell commends Meograph's method of "four-dimensional storytelling" by adding time and place to stories. "I think the multi-modal digital timeline that is connected visually with geography is very powerful," she said. Users construct geographic "Meographs" by embedding content, hyperlinks, pictures, and videos onto map-based timelines.

### 7. [XtraNormal](#)

In-depth animations and dozens of stage directions equip students to become mini- moviemakers by choosing everything from the accents of their actors to the number of camera angles in their films. Bellow recommends the tool for middle and high school levels.

### 8. [MentorMob](#)

T of this as "an eBook with the steps being the chapters," said Kristin Demidovich, MentorMob's communications director. Allows teachers to aggregate content in sequential steps by organizing lessons and supplemental learning materials into "learning playlists," compilations of videos, articles, and uploaded files such as PDFs or images that are "easy to learn from and share,"

### 9. [Storybird](#)

**Art and story entwine in Storybird's virtual stories. Students create narratives by dragging and dropping illustrations from artists chosen by the site and writing text on the page. Select imagery either by theme (such as "forest" or "home") or by artist. Once the story is complete, it reads as a full-screen novel.**

# Six Common Pitfalls Of An Animation Pitch

**If you can avoid these Six Common Pitfalls as you're developing an Animation Pitch, you will rise above the competition.**

In this post I'll tell you how to avoid the common *Animation Pitching Pitfalls* and I'll share some insights that may help you leap across them to one day find a show of your own creation on *Disney Channel, Cartoon Network, Nickelodeon* or elsewhere...

<http://chrisoatley.com/animation-pitch-pitfalls/>

For the last five years, I have taught, inspired and equipped *tens of thousands* of professional and "pre-professional" artists from all over the world right here at ChrisOatley.com.

Through my [Email Newsletter](#), via social media and often over the phone, I've directly interacted with hundreds of them.

And through it all, the most shocking lesson I've learned is this...

Your Dreams ARE Attainable. Chris Oatley:

=====

# Disney - Ultimate Attraction Guide ( 6 Stages

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## Expedition Everest - Legend of the Forbidden Mountain®



(1)

Carren through the Himalayan mountains on a speeding train while avoiding the clutches of the mythic Abominable Snowman.

(2)

**Beware the Legend -** Folklore has it that a fierce guardian monster protects the Forbidden Mountain.

For years, the Royal Anandapur Tea Company shipped its tea by train through the Forbidden Mountain pass. After a series of mysterious accidents were blamed on the dreaded Yeti monster, the railroad closed. Today, the railway is operating again, thanks to a group of local entrepreneurs—Himalayan Escapes, Tours and Expeditions— who offer curious travelers transportation to the base camp on the scenic mountain.



Yet there are some who believe the legend to be true and that the Yeti will do everything in its power to protect the sacred realm of the Himalayas. Visitors beware.

(3)

**Climb the Mountain -** Embark on a thrilling expedition through the icy peaks of the Himalayas.

Venture inside a Tibetan-style stone structure at the foot of towering Mt. Everest and make your way past the booking office of Himalayan Escapes – Tours and Expeditions. Wander past a small temple and a cozy general store before exploring a museum dedicated to the study of the Yeti, the mysterious snow monster said to inhabit the Himalayas.



(4)

**The Adventure Begins -** Board a weather-beaten train and ascend a series of rolling hills overlooking a serene green forest. Climb a steep incline and navigate through a ceremonial stone tunnel before reaching the summit. Once at the “top of the world,” hold on tight as you pick up speed and race inside the dreaded mountain.

(5)

**An Unexpected Encounter -** Without warning, your train screeches to a halt: A broken and twisted track appears in front of you. Brace yourself as your train unpredictably begins to race backward into the darkened mountain, furiously swooping up into a double-looping turn. Inside the windswept passage, the shadowy figure of a growling creature can be seen on a cavern wall. It is the Yeti—the legend is real. Hurl 80 feet down the base of the cursed mountain and swoop in and out of murky caves and along jagged rocky ledges as you race to escape the dreaded monster before he catches up with you. Will you make it back to civilization safely?

(6)

**Or will the Yeti claim another victim?**

# Assignment : Poster Attraction Design

## - Telling Our Story Visually -

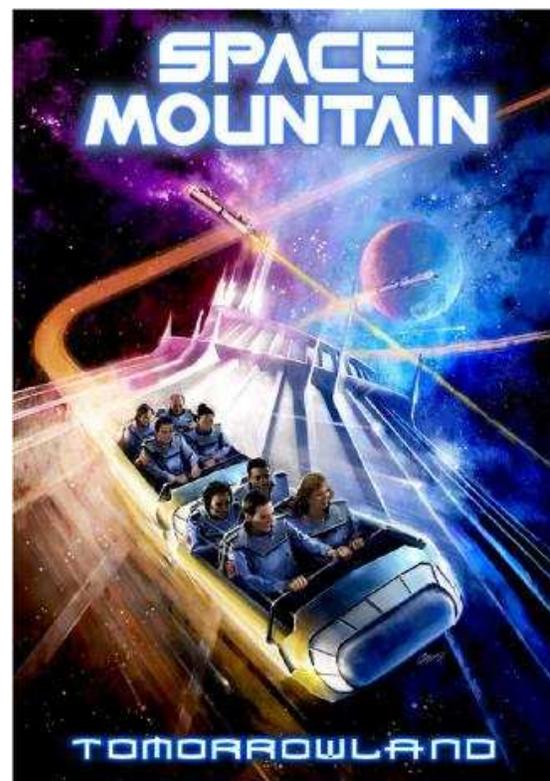
Design a poster/flyer to promote you new attraction

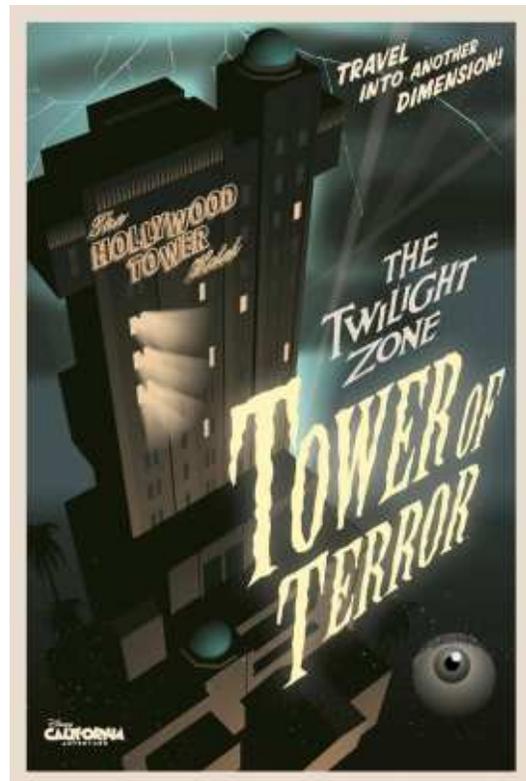
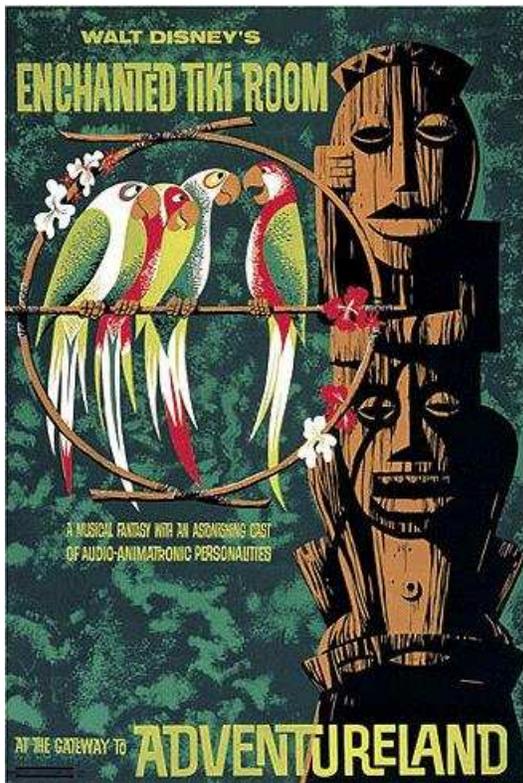
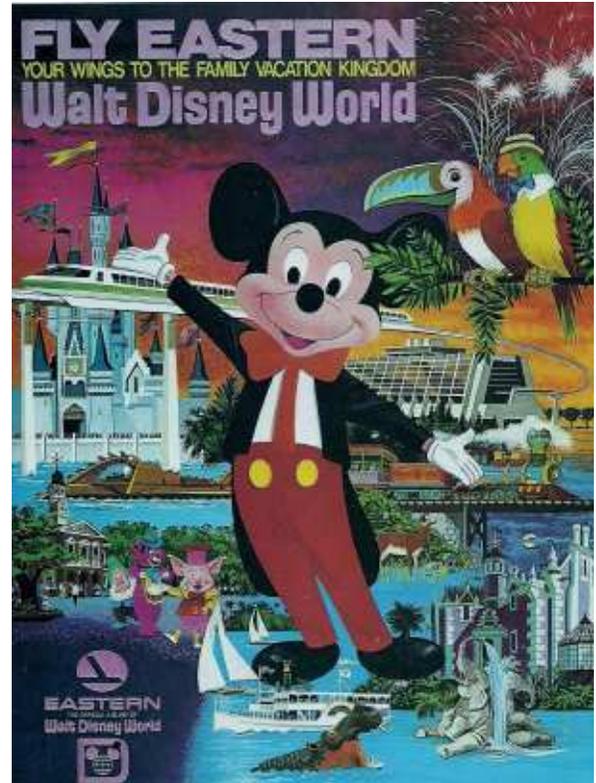
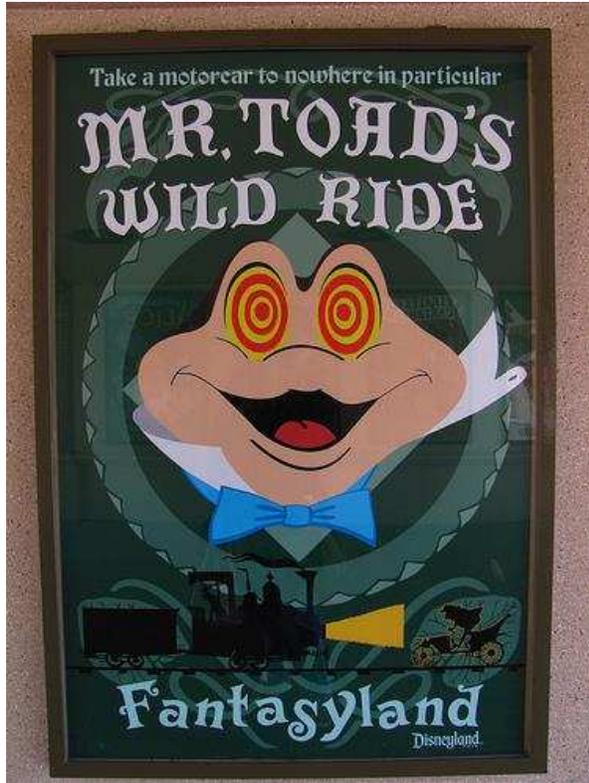
### The Best 8 Tools to Create Posters for your Classroom

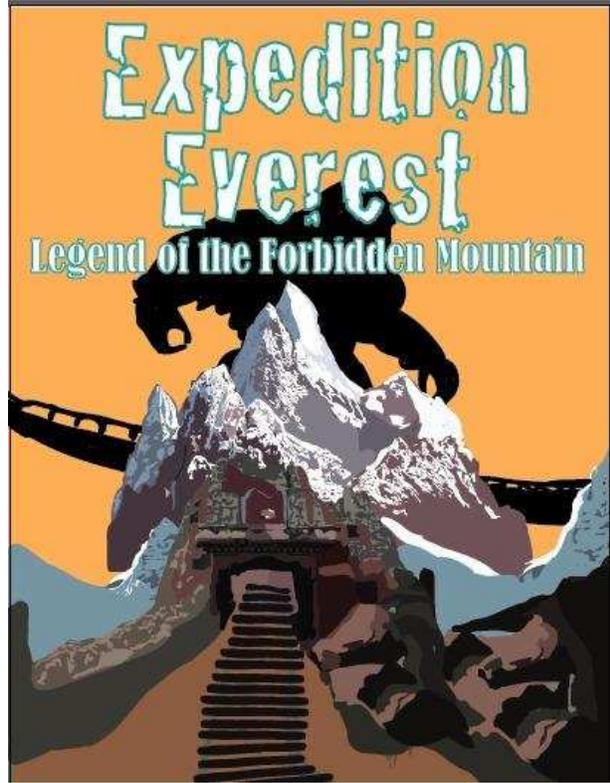
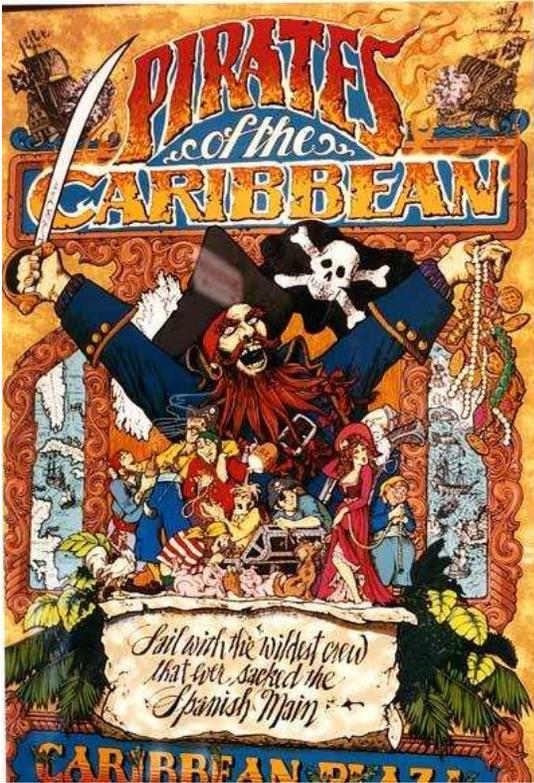
- 1- [Poster My Wall](#)
- 2- [Befunky](#)
- 3- [Picassa](#)
- 4- [Art Skills](#)
- 5- [Muzy Thoughts](#)
- 6- [Posterini](#)
- 7- [Smore](#)
- 8- [Zeen](#)

## Sample to explore

### Disney Attraction Posters







# Chapter 12.

## Audio - Video - Sound - Music - Lighting - Special effects

A/V Engineer	pg 148
Audio	pg 148
Video	pg 149
Lighting and Effects	pg 150
Creating Disney Magic – Lighting Design	pg 150
Special Effects Designers	pg 157
15 Coolest Special Effects In Disney World	pg 158
Special Effects used within the Haunted Mansion	pg 163
Audio-Animatronics	pg 165
Technical People & Show Control Engineers (Steve Alcorn)	pg 168



Photo credits to:  
[Memphis Lighting Audio Visual Installation Services](http://www.memphisound.com)  
[www.memphisound.com](http://www.memphisound.com)

[Behind the Scenes: Animatronic Guts « Acting](http://acting.wonderhowto.com)  
[acting.wonderhowto.com](http://acting.wonderhowto.com)

## A/V Engineer

An audio visual technician operates a wide assortment of equipment to create and project sound and visual images. His job may require him to produce simultaneous broadcasts of sounds and pictures or just one of the two mediums. The scope of his responsibilities may be limited to either the transmission or creation of the images or he may be expected to do both.

A person in this position normally needs to have an in-depth understanding of how audio and visual equipment components work, both independently and in conjunction with each other. Since there are often many pieces of equipment involved in audio visual production, a thorough understanding of how the systems produce sounds and pictures is necessary to coordinate their functions and troubleshoot mechanical problems. Knowing how to manipulate the equipment to create unique sounds and images is also desirable.

As technology advances, the equipment knowledge requirements for this position increase. Basic skills in using sound mixing equipment, lighting tools, microphones, projectors and video recorders are usually required. The technician may also need expertise in operating amplifiers and spotlights. Knowledge of the intricacies of computer based distance-learning classes, [teleconferences](#) and [webinars](#) is usually helpful.

Entry level positions in this industry do not require a college degree. If career advancement is desired, an associate's degree in digital media or audio visual technology is often required. Further career advancement normally requires a bachelor's degree in communications, broadcasting or journalism.

Thank you to wiseGEEK from their Website and permission to re-print

**Thank you to Steve Alcorn for the following:**

Audio/Video Engineers design the systems that play, process, distribute and deliver the audio and video throughout an attraction. Notice that they don't design the media itself. This is done by producers, directors and recording artists. The audio/video engineers make sure that their material looks and sounds good, and works reliably for the attraction's designed lifespan. Typically the actual control of audio and video is done by the show control engineer.

## Audio

What Audio Sources will you use - IE Music- Voice etc?

Amplification - How loud will it be or will it be background music?

Speakers and PA - Where will they be placed so as to not intrude on the visual and storytelling?

How will you record your audio- What device will you use?

Will you purchase your sound track/music or create your own?

How will you edit your audio/music?

What format will the audio be ? MP3 or WAV, or MPEG-4 or AAC?

**Why do sound engineers use pink noise? Have students research this question.**

## Video

Video Sources - What - Where - Why?

Video Monitoring What - Where - Why?

Displays What - Where - Why?

Projection What - Where - Why?

## Type of video: Which ones will you need and use?

Projection

Information

Enhancement

Entertainment

Attraction

## Lighting and Special Effects

Lighting Designers fall somewhere between the Creative People and the Technical People. The selection and location of fixtures and colored filters is certainly an artistic endeavor. But the selection of Dimmer Cabinets and control equipment is a technical one. Sometimes the show control engineer participates in the technical portion of this task. And we're always grateful when the lighting designer has an idea of the technical ramifications of his or her design.

### Lighting your attraction

Thank you to M. Bogaert - Designing Disney for permission to re-print and provide content.

<http://www.designingdisney.com/content/creating-disney-magic-%E2%80%93-lighting-design>

## Creating Disney Magic – Lighting Design



Walt Disney loved to be in Disneyland at sundown to see the lights come on. It seemed to him that “a new kind of magic is taking over in Disneyland after dark”. And in our humble opinion, this statement couldn't be more true! That's why we decided to dedicate this years 'Designing Disney' Christmas series to the different ways nighttime magic is made during the holiday season at Disneyland Paris.



In the first installment, Tracy Eck (Walt Disney Imagineering Creative Paris) tells you about how light is used at the parks and hotels to achieve a particular practical or aesthetic effect. Ms. Eck was a lighting designer at Disneyland Paris for many years. Since April 1, 2011, she is the art director for the Disneyland Park. In 2002, Ms. Eck was named Lighting Dimensions International's "Lighting Designer of the Year".

**DD: What is the function of light in the Disney Parks and Resorts?**

TE: I like to think of lighting as the glue that pulls the different elements of an attraction together and makes it all coherent. Because it accents the things you want to see and makes the things you don't want to see go away. I love to take people into an attraction under work lights, turn the work lights off and turn the show lights on and let them see how it totally transforms the space. And that is what lighting does. It finishes the whole picture and makes the vision come true.



**DD: What are the main steps of the lighting design process?**

TE: The process starts in concept. Based on the story, the lighting designer will figure out what a particular room should look like. He or she will decide which parts of a particular

space will have to be lit. Parts that may not be seen will deliberately be left in the dark. The lighting designer will also select the places where shadow should be dropped. Shadow management and shadow design is as important as lighting itself. Because shadow is what gives things depth. It pulls things forward and makes them go back, influencing the perceived scale and dimension. So the first step in the process is all about shadow, leaving darkness and controlling what the light hits and focusing the viewers eye.



Once it has been decided what needs to be lit, the lighting designer will determine how that should be done. He or she will chose the angle and width of the light beam and select the place where the light source should be installed. He or she can choose between front light, back light and side light. They all produce different effects and shadows. Front

light is often a little bit flat. So by adding back light, you make the silhouettes stand out. If you

want something a little dramatic, you could have just one source that hits the object from the side. That will create a very strong shadow. But the possibilities will often be limited by the small amount of space available. There are air conditioning docs, there is emergency lighting and a whole bunch of other stuff that has to fit into the same space. So the lighting designer will have to negotiate with the set and audio people to get space for their lighting equipment in the right place.



The lighting designer will also have to pick the color of the light. When you put a light up, it has its own color. That's something people often tend to forget. There are all sorts of white light. Some is very blue, while other is very orange. The lighting designer will choose a type of white that works well with color.

There are some kinds of white light that kill color, while others make the colors pop. This is called color rendition. Color rendition is the ability of a light source to faithfully reproduce the colors of objects the same way sunlight does. It's measured by a 1-100 index (Color Rendition Index or "CRI"). An incandescent light bulb has a CRI of 100. And then, if you remember those horrible tunnel lights, they are a kind of orange and they make all the colors go grey, that would be probably 30. So if you buy light bulbs, look at the CRI. It tells you how true your colors will look. At Disney, we try to stay around 90 and not below 80.



When it has been decided what needs to be lit and how that should be done, the lighting designer will do renderings and simulations to see, and show others, what his or her lighting design is going to look like. Once the design is finished, the engineers will determine the technical installations needed to ensure the

implementation of it. And the necessary lighting equipment will be bought. During the construction

of the space for which a lighting design was made, the lighting designer will make sure that all technical installations are built and that the space that was allocated for the lights is left open. When the construction is finished and the painters, set designers and the people doing the floors and audio went home, the lighting designer will come in and install its lighting equipment. This phase is called “test and adjust”. That’s the time when you’re aiming the lights, coloring them and setting levels.

**DD: What elements are taken into account while selecting the appropriate lighting equipment?**

TE: Things are here for ten, twenty, thirty, forty or fifty years. So the lighting equipment must hold up over time, despite heavy use and terrible weather conditions. It has to be as easy to maintain as possible. After all, you don’t want to have to go and change light bulbs all the time. The lighting equipment must be energy efficient and comply with all applicable regulations. And you want things to look good, so you also have to keep an eye on the color rendition.



All these elements were taken into account when we relid “Rock ‘n’ Roller Coaster”. A few years after the opening of the Studios park, it became apparent that because of the rather short lamp life and the many moving parts, there was too much maintenance involved in keeping the attraction’s lighting equipment up

and running. So the maintenance team asked us to look at it again and to try and find lights that are easier to maintain. By that time, the moving light manufacturers had just gotten into the LED world. And using LED lighting seemed to cover our needs. When you work with LED’s, all of the color changing is done via RGB color mixing. And seen as you have fewer moving parts, you take away some of the maintenance.

So we looked at every LED moving head on the market. We brought maintenance in so that they could open up the equipment and see if the (moving) parts looked like they were going to last over time. Then we brought the moving heads we liked into the attraction and we tested the



quality of the light they produced. We looked at the colors, the color changing, the color mixing, how quickly we could change the colors. Once we made the final selection, we installed the LED moving heads in the attraction and we let them run twenty four seven for several months to see how they held up. And now, maintenance is really happy with the result. The new lights cut their

work down and the quality of the show has gone up tremendously.

**DD: How is the outdoor lighting being controlled (switched on and off)?**



TE: I love the moment of the day when the outdoor lighting is about to be switched on. It's what we, lighting designers, call the magic hour. That's when daylight is falling, twilight is deepening into night and it gets darker bit by bit. And then, all of a sudden, the lights come up and you see guests being totally amazed by it. It's when nighttime magic comes to life.

So turning the outdoor lighting on is a huge

thing!

In order to turn things on and off in an efficient way, we're using a computerized lighting control system. In the Disneyland Park, the system is 20 years old. It's a simple but reliable one. In the Walt Disney Studios Park, we have a more sophisticated lighting control system that enables you to do more precise things.

The system allows you to program when and how the outdoor lighting should be switched on. Do you want the lights to come up slowly, for a little bit of an effect? Or does it need to be bright at

the beginning and then dim a little bit? After all, what you need at twilight is brighter than when it's really dark. Once you have set the parameters right, the system cycles through the program as recorded all day long.

**DD: How does the use of light differ from land to land?**

TE: The biggest, simplest visual cue is what we call the "themed lighting". This is all the decorative lights that you can see: the lampposts, wall lamps... We have a department in Glendale that does nothing but designing these lights for us. When creating a decorative light, they start with the story. For example, if we need something for Frontierland, they will look into the history of the Old West. There are very clear references to what the lamps looked like in those days. Based on the outcome of their research, they will determine the look of the light fixture.



Subsequently, they'll have to recreate the appropriate lighting effect. Back in the 1900's, people had oil lamps. But we're not going to use oil. That gives no light and has a limited lamp life. In order to stay true to the story, inventive solutions need to be found to recreate the effect of an oil lantern. And that's when modern technology comes into play. You can put LED lights in a lantern, frost the

glass so guests don't really see what's going on inside and then program the LED's so that the light resembles the flickering flame of a real oil lamp.



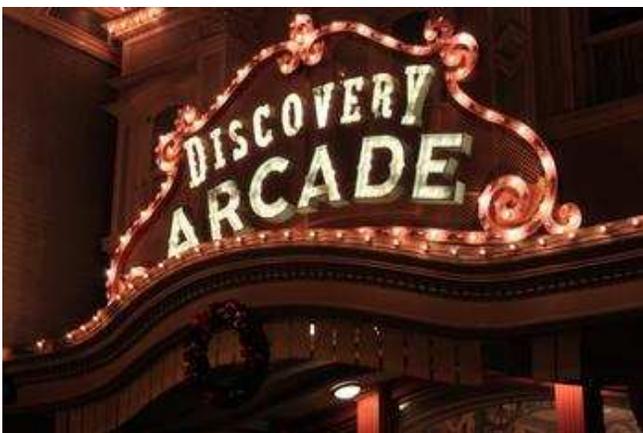
The problem with some of the themed lights is that, although they look very pretty, they aren't that efficient as a light source. For example, a little candle won't be sufficient to light an entire room. So often, there is what I call a "workhorse", a much stronger light source, hidden in the light fixture that does the real lighting work. The guest has the impression

that the light is coming from the little candle, but the concealed source is actually doing all the work.



**DD: What's your favorite place in DLP after dark?**

TE: I love Main Street, with all the rim lights. The Castle and exteriors of Fantasyland are gorgeous! And I think Toy Story Playland is very cute, with those great, big light bulbs hanging over the pathways. The interiors of Tower of Terror and Pirates are beautiful too! And the Temple of Peril! I really loved lighting that. That was fun! Oh, there are so many things to like. It's very difficult to only select a few. I think my choice depends on the day and the mood (laughter). You know, it's a question of the sets and the lighting working together. It's not really lighting all by itself... After all, lighting can't be seen until it strikes something, smoke or an object. So what it is that the lighting is striking, is critical to how nice the lighting design looks. When you have something beautiful, lighting only makes it better!





**DD: Ms. Eck, thanks a million for taking the time to answer our questions!**



**This article is part of our ‘Sparkling Christmas at Disneyland Paris’ series, celebrating the different ways nighttime magic is made during the holiday season at Disneyland Paris!**

## **Special Effects Designers**

Special Effects Designers also fall somewhere between the Creative People and the Technical People. They have long, scraggly beards, and walk around hunched over, like forest gnomes, muttering about smoke fluid and synthetic mud. And you should see their husbands. Special Effects people often design their own electronic control boxes to activate their effects. But not if the show control engineer can help it. These two disciplines have a long history of miscommunication. I think it has something to do with the smoke fluid.

---

The following post was created by a member of BuzzFeed Community, where anyone can post awesome lists and creations. [Learn more](#) or [post your buzz!](#)

## 15 Coolest Special Effects In Disney World

<http://www.buzzfeed.com/cassierose117/15-coolest-special-effects-in-disney-world-fmhg>



Posted by [Cassie Ryan](#)

Thank you to : <http://www.wdwhints.com/2012/07/special-effects-used-within-haunted.html> for permission to link and re-print the article below.

### 15. Sorcerers of The Magic Kingdom

Sorcerers of The Magic Kingdom is a park-wide, interactive game for sorcerers-in-training of all ages! Mystic portals are spread out across the park for guests to help Merlin defeat the ghestliest crew of Disney Villains, led by none other than Hades himself! Using magical key cards, the virtual portals appear in shop windows, wanted posters, and fireplaces. Different character cards, like Rapunzel's hair whip and Thumper's mighty thump, help you and Marlin defeat your next villain! Then you are sent off to your next location to continue being The Magic Kingdom's next hero!

Video here:

[https://www.youtube.com/watch?feature=player\\_embedded&v=4BBOiT\\_Y-mA#t=0](https://www.youtube.com/watch?feature=player_embedded&v=4BBOiT_Y-mA#t=0)



### 14. Expedition Everest

Expedition Everest in Disney's Animal Kingdom takes guests on a Himalayan adventure in search for the legendary Yeti! At almost 4 minutes long, this thrilling roller coaster includes it's own animatronic Yeti that terrifyingly claws and growls at riders as they zip by! Scary!



## 13. Mickey's PhilharMagic

Located in The Magic Kingdom, Mickey's PhilharMagic is the coolest 3D show a Disney lover could ask for! Combining all your favorite Disney characters and songs, Philhar takes you on a magic carpet ride with Mickey and all his musical friends!

## 12. Monster's Inc. Laugh Floor

Get ready to laugh! Mike Wasowski plays MC in this totally interactive comedy show where the audience plays the biggest part, and the monsters are totally LIVE! Guests can even text in their own jokes to appear on the show! The Laugh Floor is located in The Magic Kingdom.

[https://www.youtube.com/watch?feature=player\\_embedded&v=IH8MCvYF6cU#t=0](https://www.youtube.com/watch?feature=player_embedded&v=IH8MCvYF6cU#t=0)



## 11. Dinosaur

Animal Kingdom takes guests back into the Cretaceous era to find some dinosaurs! In special time rovers, guests encounter over 10 super realistic (and super scary) animatronic dinos!



## 10. Star Tours

Hollywood Studios' Star tours takes guests on their very own spaceship to explore the world of the Star Wars films! Using flight simulation and projections, C-3P0 leads the way through space, and every time you ride the journey is different!



## 9. The Twilight Zone Tower Of Terror

Disney's most magical hotel isn't The Grand Floridian, it's Hollywood Studios' Hollywood Tower Hotel. When lightning strikes the tower, guests are taken into the 5th dimension with some of the most advanced technology around! Before that famous drop, projections and mirrors are used to create some super creepy effects!

## 8. Enchanted Tales With Belle

This New Fantasyland attraction in The Magic Kingdom brings guests straight through Maurice's cottage to help Belle tell the story of Beauty and The Beast! After entering through a magic mirror, guests get to actually interact with the the enchanted Wardrobe and Lumiere!

[https://www.youtube.com/watch?feature=player\\_embedded&v=Z1PPoE-K9Eo](https://www.youtube.com/watch?feature=player_embedded&v=Z1PPoE-K9Eo)

[https://www.youtube.com/watch?feature=player\\_embedded&v=Z1PPoE-K9Eo#t=0](https://www.youtube.com/watch?feature=player_embedded&v=Z1PPoE-K9Eo#t=0)

## 7. Toy Story Midway Mania



Located in Hollywood Studios, Toy Story Mania! is a 4D interactive game and ride based on Disney Pixar's Toy Story trilogy. Guests wear 3D glasses and spin through virtual games to compete against each other. Disney used industrial ethernet technology to design and create the almost \$80 million ride! We have no idea what that means, but its super cool!



## 6. Mission: SPACE

When Disney puts barf bags right in front of your seat, you know something cool is about to happen! EPCOT's Mission: SPACE simulates space travel in a human centrifuge, spinning guests so fast, they feel weightless.



## 5. Soarin'

EPCOT's Soarin' is a high flying adventure that takes guests over the most beautiful sights in California, including Disneyland of course! This flight simulator uses a huge projection screen, blowing wind, and even smells to send guests straight into Cali!

## 4. Lights, Motors, Action! Extreme Stunt Show

The special effects in Hollywood Studios' Lights, Motors, Action! Extreme Stunt Show are more than just high tech, they're completely LIVE! These cars perform some of the coolest live stunts you'll ever see and then reveal how they're done with some movie magic!

[https://www.youtube.com/watch?feature=player\\_embedded&v=466SbWz2aig](https://www.youtube.com/watch?feature=player_embedded&v=466SbWz2aig)

### 3. Celebrate The Magic

Replacing the equally amazing “The Magic, The Memories, and You,” “Celebrate The Magic,” is a nighttime show in The Magic Kingdom that transforms Cinderella’s Castle using high-tech projection technology, lighting, and pyrotechnics. This jaw-dropping spectacular leaves guests thoroughly heart-warmed and asking “how did they do that?!”

[https://www.youtube.com/watch?feature=player\\_embedded&v=JynisCVbox4](https://www.youtube.com/watch?feature=player_embedded&v=JynisCVbox4)



### 2. The Haunted Mansion

From hitchhiking ghosts, to singing busts, to (not?) stretching paintings, The Magic Kingdom’s Haunted Mansion is full of special effects! From classic animatronics to modern high-tech projection technology, The Haunted Mansion’s 999 happy haunts leave guests amazed!



### 1. Fantasmic!

Fantasmic is Disney’s Hollywood Studios nighttime spectacular! With fireworks, live actors, water effects, pyrotechnics, music, boats, and incredible projections onto large walls of misting water, Fantasmic is the most visually magical and high-tech show around! And now, Fantasmic has introduced Glow With The Show technology that syncs the show up to special glowing ear hats!

[https://www.youtube.com/watch?feature=player\\_embedded&v=-MYjamO02Wo](https://www.youtube.com/watch?feature=player_embedded&v=-MYjamO02Wo)

## Special Effects used within the Haunted Mansion

Walt Disney World Hints was created to share **Helpful Information, News, Tips & Secrets** (get it? HINTS!) with Disney fans. Whether you're a Disney novice or a knowledgeable fan, we hope you'll find some useful hints here to try on your next WDW vacation!

Thank you to **Terri** for permission to share and re-print this article.

<http://www.wdwhints.com/2012/07/special-effects-used-within-haunted.html>

### ***How do they DO that?!***

Often, I'm awe struck at the attention to detail and special effects that Disney puts into their attractions. The Haunted Mansion, being created in the 1960's, uses some of the most simple techniques for special effects, but being "hidden" so well, it's still hard to figure out how the Disney Imagineers made it work.

Here are just a *few* of the special effects within the Haunted Mansion explained.

Spoiler alert! If you feel that knowing *how* an attraction works takes away from the fun... you may want to skip down to the fun fact portion of this post.



Photo courtesy of [Mouse and Memos](#)

**Eyes in the Wallpaper & Busts in the Hallway - *are they following ME?*** This is a great optical illusion that is quite simple to create. The eyes and busts appear convex (rounded outward like the exterior of a ball), but are actually concave (rounded inward like the inside of a bowl). These busts aren't actual busts, but rather concave sculptures - you might think of them as "molds" that a bust might be cast in. Although the object is actually facing away from you, with proper lighting, the busts (and eyes) appear to be continually watching you.

**Ballroom Dancers** - One of the most magnificent scenes in the Haunted Mansion is the Ballroom dancing! How is it done? By using one of the oldest magician's tricks in the book - a technique called "Pepper's Ghost." There is a large pane of glass between you and the ballroom below. The dancing ghosts are actually located above and below the track that your doom buggy rides on. The audio-animatronics are lit up with light bulbs that fade on and off above them; it is their reflections that you see in the glass. HINT: Look closely at the dancers. The Imagineers "built" the audio-animatronics as proper dancers (men leading ladies), but forgot to take into

account the mirror-imaging that the reflecting would cause. So, in the ballroom scene, the ladies are actually leading the men in the dance!

**Singing Busts in the Graveyard** - The busts are simply head sculptures with actors faces that are projected onto them. A short color movie is projected onto these sculptures (or white mannequin heads) from below the front of the head. This allows the heads to look "alive." Madame Leota and little Leota (the Ghost Hostess) are also created using the same projection technique. (The projector is hidden inside Madame Leota's crystal ball.)

**Hitchhiking Ghosts [old version]** - You likely already figured this one out - two way mirrors. The side with the ghosts is brightly lit, the other side (where you're riding) is dark. When one side of a two way mirror is lit and the other side is dark, you can see through to the other side (where the ghosts are). They are behind the mirror, moving at the same speed as your doom buggy.

**Hitchhiking Ghosts [NEW version]** - Have you experienced this new effect? Through a new motion-capturing technology, Imagineers and Animators have created a variety of options for personalizing the ride for each guest. Behind the new Hitchhiking ghosts is a motion tracker that allows a computer to track and identify elements of a guest - such as their eyes, ears, mouth, height, etc. It can also detect the number of riders in a doom buggy. These details are then used to determine which 'ghostly gag' will be played on you! These ghostly gags, or 'mirrors' sequence, at the end of the ride goes by far too quickly, leaving guests wanting more. Well, more is what they're going to get - as new technologies similar to this are being added into some of the newest Fantasyland attractions - but we'll leave that for another article.

**Is all that dust real?** To keep the 200+ props within the Haunted Mansion looking untouched and dusty, Disney purchases bags "Fuller's Earth" (theatrical dust). It's been said that enough dust has been used since the attraction's opening in 1971 to bury The Haunted Mansion completely.

### **A few extra Fun Facts:**

- There may be 999 happy haunts within the Mansion, but only 109 of them are Disney-created audio-animatronics!
- There are 160 doom buggies in the Haunted Mansion at Walt Disney World; there are 131 in Disneyland's Haunted Mansion.
- The doom buggies travel at a bout 1.4 mph, and can accommodate up to 3,200 guests per hour at Walt Disney World, but only 2,618 guests at Disneyland because the track is shorter.
- The song "Grim Grinning Ghosts" played in the graveyard was written by Xavier Atencio. Xavier also wrote "Yo Ho (A Pirates Life for Me)" - the song played on the attraction "Pirates of the Caribbean."
- The five singing busts have character names. From left to right they are: Rollo Rumkin, Uncle Theodore, Cousin Algernon, Ned Nub, and Phineas P. Pock
- The three hitchhiking ghost also have names, "Gus" (the Prisoner), "Ezra" (the Skeleton), and "Phineas" (the Traveler). These names first appeared in fanfiction created by the Cast Members that worked at the WDW Haunted Mansion. Later on, these names became so well-known that they began appearing on actual merchandise.

Don't you love Disney's attention to detail?! Next time you tour the Haunted Mansion you can be a fountain of knowledge sharing lots of secrets and fun facts with your friends & family!

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- *The Walt Disney World Trivia Book: Secrets, History & Fun Facts Behind the Magic*, Louis A. Mongello. 2004.
- [http://en.wikipedia.org/wiki/List\\_of\\_Haunted\\_Mansion\\_characters](http://en.wikipedia.org/wiki/List_of_Haunted_Mansion_characters)
- *Keys to the Kingdom Tour. Tour Guide: Corey*. 2005.



## Audio-Animatronics

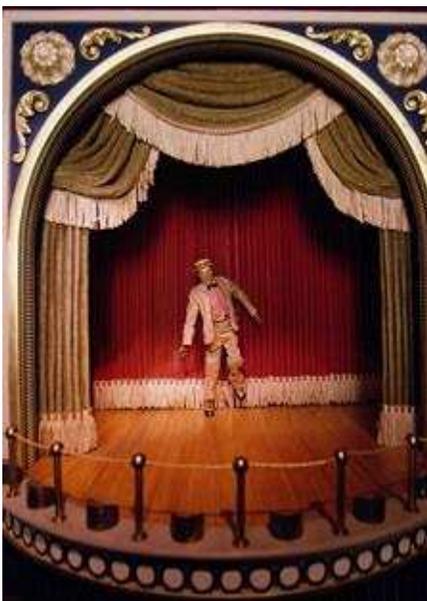
What - Where - Why?

Will you use them?

How will you use them?

How much do they cost?

## The History of Disney's Audio Animatronics



<http://www.magicalkingdoms.com/blog/2008/07/08/the-history-of-disneys-audio-animatronics/>

(Thank you to MagicalKingdoms.com for permission to share this article and re-print)

Audio-Animatronics technology features heavily in many of the attractions at Disney parks around the world. Imagine Pirates of the Caribbean ride without all of the Audio-Animatronics figures, or the Haunted Mansion without it's ghostly residents. But where did it all begin?

It was in the early 1950s that Walt Disney purchased a mechanical bird while he was on vacation in Europe. That souvenir spurred Walt on to give life-like movement to 3D figures, just as he'd given life to the characters in his animated films.

In 1951 Roger Broggie and Wathel Rogers began work on “Project Little Man,” a miniature 9-inch tall figure programmed to mimic vaudevillian tap-dancing routines, using cams, cables and tubes. The technology was primitive and movement limited, but when Imagineers combined the cam-and-lever principle with an electronic-hydraulic-pneumatic approach, they achieved greater movement in the figures which were used in two of Disneyland’s early attractions, Nature’s Wonderland and Jungle Cruise.

The first true Audio-Animatronic technology was used for the birds in The Enchanted Tiki Room at Disneyland, which opened in 1963. For this the Imagineers had devised a system to control the actions by means of magnetic recording tape and solenoid coils. The signals recorded on the tape triggered solenoid coils inside the figures, producing action.



By 1964 the first fully animated human figure had debuted at the New York World’s Fair. That figure was Abraham Lincoln, and it incorporated 57 moves, including 22 different head movements. But the work had been painstaking and involved animator Wathel Rogers being rigged up with a harness-like device and his every movement captured and recorded. The programming harness was a precursor of the motion capture systems that are used today. A duplicate of that Abraham Lincoln Audio-Animatronic figure went on to be used in the Disneyland attraction *Great Moments with Mr. Lincoln* which opened in 1965.

The 1964 film “Mary Poppins” saw the appearance of two Audio-Animatronics birds, Robin and Umbrella, and the profits from that film were used to invest in an organization, MAPO, set up to create Audio-Animatronics figures.

The Digital Animation Control System (DACS) came into being in 1969, making use of the now rapidly developing computer technology. DACS involves the movements being recorded onto computer disk, which animators then use to manipulate the figures’ movements via a console. Using this system the animators are able to adjust or delete actions at the touch of a button. DACS technology has moved on a long way since then, and a more sophisticated version is now used to control all of the Audio-Animatronics figures we see at the parks today. All of the Audio-

Animatronics figures in [Epcot](#) and [Magic Kingdom](#) at Walt Disney World are controlled from a system composed of multiple DACS from a single remote location in the Magic Kingdom.



1989 saw the first A-100 Audio-Animatronic figure in the form of the Wicked Witch of Oz at Disney Hollywood Studio's [Great Movie Ride](#). The A-100 figure enables movements and gestures that the figure makes to be more realistic than ever before, and it takes around eight hours to animate just one second of movement.

Meeko was the first portable, all-electric Audio-Animatronics figure, and made his debut in 2002 in Animal Kingdom's [Pocahontas and Her Forest Friends](#) show.

2004 saw a huge step forward with Lucky the Dinosaur, the world's first free-roaming Audio-Animatronics figure. Lucky made his debut at Disney's California Adventure park and was able to roam around interacting with guests. This technology continued to evolve with the appearance of the Muppet Mobile Lab at Epcot, which saw much smaller versions of the free-roaming Audio-Animatronics characters, that were not only able to move around, but could also converse with each other as well as with guests.

These days Audio-Animatronics figures can be found in many Disney rides and shows, including an A-100 Captain Jack Sparrow in the [Pirates of the Caribbean](#) attraction, an 18 feet tall yeti in Animal Kingdom's [Expedition Everest](#), and the most complex A-100 figure to date in the form of Stitch at Magic Kingdom's in [Stitch's Great Escape](#).



The newest Audio-Animatronic figure to feature in Disney attractions, both in California Adventure and Disney's Hollywood Studios, is Mr. Potato Head in [Toy Story Mania!](#) This figure is so advanced that he can remove and re-attach his ear, has lips with a wide range of movements and his eyes are digitally animated so he is able to look directly at a guest he is talking to. The figure took more hours to program than any other Audio Animatronic figure ever has before.

It's difficult to imagine what possibilities lie ahead, but I'm sure that Imagineers and animators have something even bigger and better already on their drawing boards. A walking, talking life-like Audio Animatronic man could be just around the corner.

Incoming search terms:

- Audio Animatronics
- disney animatronics
- history of audio animatronics
- animatronics
- walt disney animatronics
- disney dacs
- disney audio animatronics
- animatronics history
- disney animatronics history
- history of animatronics
- 

**Thank you to Steve Alcorn for the following:**

**Show Control Engineers** are at the eye of this storm. Call me prejudiced (since I am one) but Show Control is the most cross-disciplinary of all theme park engineering jobs. The show control engineer needs to know a little bit about every system that he or she connects with – ride, audio, video, lighting, mechanical, facility, safety – even wind monitors on occasion! And since the show control system is connected to virtually everything – including the things that go into the attraction at the last minute – the show control engineer is usually the person working at four o'clock in the morning on opening day trying to get things to work. This situation isn't helped by the fact that the show control engineer is responsible for controlling and synchronizing all of the audio and video media in the attraction, most of which isn't available until about 3:30 of that same day.

## **Technical People**

Who are the Technical People that are torturing these poor Creative People? They're us. Let's do a quick run down of the theme park engineering skills we'll be learning about during the rest of this course.

**Ride Control engineers** drink the most coffee. Whether this is why they all have that nervous tremor, I can't say. Anything big and moving fast is typically controlled by these guys. They understand redundant computing systems, fail safe design, single and multiple point failure analysis and a lot more. The show control and ride control systems cue each other for synchronization purposes, but they are nearly always independent systems.

**Architects** design the building itself, and Architectural Engineers make sure it will stand up. Given the fanciful structures of many themed attractions, this is no small feat. They are generally Structural or Civil Engineers.

**Mechanical Engineers** design nearly everything that moves: vehicles, set pieces, props, ride doors. They also work with hydraulics (oil or water) and pneumatics (air). Some smaller mechanical items may be handled by animators or special effects artists.

**Systems Engineers** unify all of these other disciplines. They often have oversight of the entire attraction's engineering, but are seldom intimately familiar with any single subsystem. The Systems Engineer is often the one who is ultimately responsible for ADA (Americans with Disabilities Act) compliance and meeting applicable safety codes.

**Technical Writers** document what we did. They write maintenance and operation manuals. A common problem with technical writers is that they may not fully understand what they are writing about. For this reason, there is a trend toward the design engineers preparing their own technical documentation.

**Coordinators** are like honey bees. They flit from discipline to discipline, collecting the needs of one and passing it on to the next. As opening day gets closer they flit faster and faster.

**Planners and Schedulers** use project timeline software and spreadsheets to put together highly detailed schedules that are read only by upper level management. The rest of us are just working as fast as we can and making up bogus percentages of completion to keep them happy.

**Estimators and Financial Analysts** are the people who figure out how much more the attraction is costing than it was supposed to, and then try to explain why.

**Project Managers** are the guys who think they're running the project, when really it is a three-ton bull escaped from its pen and bearing down on opening day no matter what happens. Along the way they organize lots of meetings where they try to encourage communication between the various engineering disciplines, construction personnel and Creative People. One of their vital functions is to bring lots of pizza in the middle of the night. In the end, if the show doesn't stink, they get the credit.

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# Chapter 13.

## Theme Park Design and Layout

Investigating to build foundation knowledge

Theme Park Design: Setting the Stage pg 172

Concept Development in the Feasibility Study pg 172

Illustrated Master Plan pg 175

Concept Art pg 176

Theme Park Design Competition Comes to Campus pg 177

Disney Park Blueprints pg 178

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Themagical.nl... a introduction pg 181

**Assignment-Theme Park Design and Layout A-pg 182**

**Assignment:**

**Research Space Mountain & Splash Mountain at Walt Disney World A-pg 183**

**Assignment - Class Exercise: Theme Park Design-Layout-Operations:**

**Estimating Income-Costs-Expenses A-pg 186**

**Assignment - Class Exercise-Sketch of your "Theme Park"**



This chapter is designed to allow students to explore, investigate and research theme park attractions and the concepts associated with master planning, land use and physical space.

# Theme Park Design: [Setting the Stage](#)

Thank you to Leisure Business Advisors LLC (LBA) for permission to reprint this article.

Tom Montchai is an experienced *theme park designer* and is a member of the ... The functional *layout* of this particular example basically follows the "loop" . Leisure Business Advisors LLC (LBA) assists developers and operators worldwide for a variety of large and small-scale projects. Our managing director has been a recognized leisure industry expert for almost 30 years.

<http://www.leisure-business.com/theme-park-design.html>

## Theme Park Design: Setting the Stage

The feasibility study provides critical physical planning numbers for the design team, and is the first step in the development process. Leisure Business Advisors LLC (LBA) specializes in conducting this study, which is typically required by financing institutions and investors. The study provides market and financial analysis and projections. It also provides critical physical planning recommendations to assist the theme park designer during the design stage of development. It is critical that the designs are in line with market needs and expected cash flow. These physical planning guidelines need to be in place before construction and building can start. Designers, builders, and managers can all benefit from the guidance provided in the study.

As part of its expanded feasibility study, LBA can work closely with developers in preparing the initial image package that would assist designers in the design stage of development that follows the feasibility stage. We could provide a walk-through description and conceptual images of a new theme park seen through the eyes of a typical visitor. These would preliminarily suggest the general "look and feel" of the new park in financing and marketing presentations.

John Gerner, our managing director, has been an advisor for more than 20 years and has planned many theme parks in the United States, Asia, Latin America, the Middle East, and Europe.

We pride ourselves on prompt service and are also sensitive to time constraints often involved in starting new development projects. If needed, assignments can be accelerated for an extra fee.

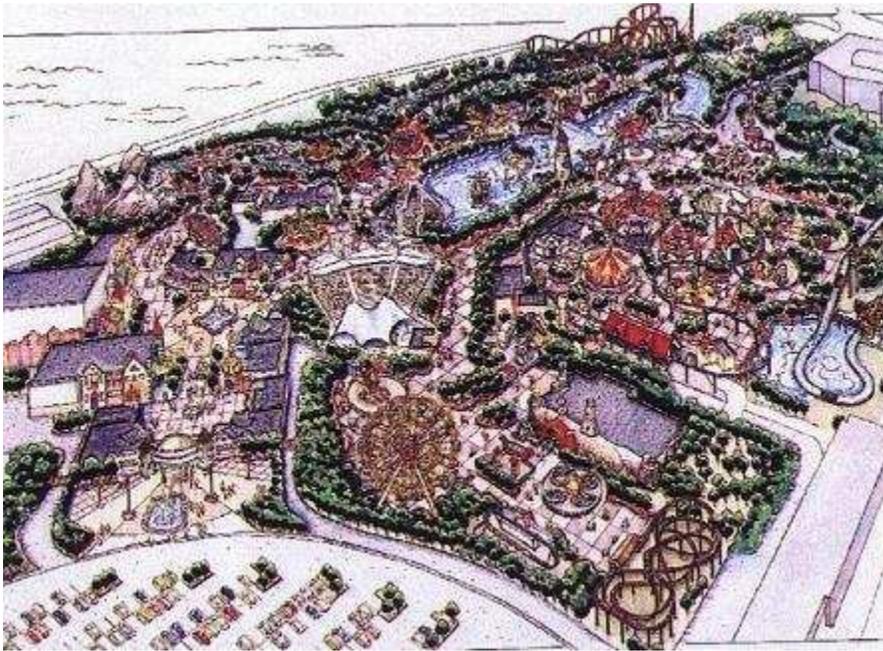
LBA provides theme park master planning and design services in cooperation with Montchai Design. Tom Montchai is an experienced theme park designer and is a member of the American Institute of Architects (AIA). Examples of his past work are shown on this page.

Although the actual theme park design process differs from one project to another, the following paragraphs outline a typical approach.

## Concept Development in the Feasibility Study

The development process generally begins with a site visit and initial meeting to discuss the client's vision for the new leisure attraction. Conceptually, the design effort begins with a blank page. The greatest opportunity occurs when unique aspects of the project can be effectively integrated with the proven experience of comparable attractions elsewhere and potential market support for this particular location.

The resulting plan is generally the strongest tool in financing and operational efforts.



in

## Design Charrette

As the feasibility study nears completion, the physical and financial framework is in place for conceptual design. The transition often occurs a "design charrette" that brings together the client group with designers and other creative team members. The study's findings are discussed, and ideas presented by all involved.

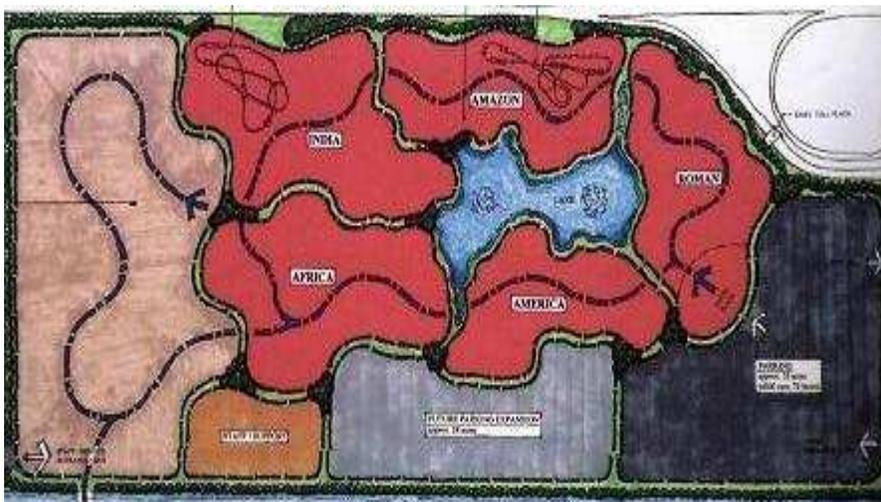
Specific goals for this brainstorming session differ, depending on the type of leisure attraction being developed.

For a new theme park or amusement park, this effort can begin with **selecting a general overall theme and specific themes for individual areas**. The most popular themes typically involve **adventure or fantasy**.

From the start, it is important to **keep the potential guest experience in mind**.

**Ultimate success** depends on the new leisure attraction **meeting visitor expectations and desires**.

## Land Use Plan



At the design charrette, the master planning process also begins. It often starts with a "bubble diagram" that applies the feasibility study's physical recommendations to the client's site. This initial land use plan becomes more refined and detailed as it adapts to the particular needs of

the concept and site.

The above example provided by Tom Montchai, is from a past amusement park project with five themed areas, each of which would have a unique identity that is reinforced by its architecture and landscaping. **A "theme park" typically has five to seven distinctively themed areas under a broad overall theme.**

The **functional layout** of this particular example basically **follows the "loop" approach that is common with many recent theme parks.** In this layout, the themed areas surround a central lake that often serves as the location for evening spectacles. Another **common layout is the "hub and spoke" approach that Disneyland first popularized.** It has a central visual icon (such as a castle) as its hub, with themed areas fanning out from this centerpiece. Other layouts are used, and none is clearly superior to the others. Unique site characteristics influence the choice of the best functional layout, as well as other design aspects.

After establishing the themed areas, individual components are distributed within each area. **Major rides and shows are typically placed at the edges in order to attract guests throughout the park.** This approach helps maximize overall holding capacity and crowd flow. The main shops are generally placed near the exit for convenience.

Based on typical guest behavior and pedestrian planning standards, a **visitor circulation plan can also be prepared** to ensure smooth movement throughout the theme park. This enhances guest comfort and prevents bottlenecks.

**Questions I have are:**

**Ideas I have are:**

## Illustrated Master Plan

Functional needs are combined with visual theming in an illustrated master plan. An example is shown below by Tom Montchai from his past design work for a major new theme park in China. As shown, structures are often color-coded by type in order to aid optimum distribution and placement.



### Aerial Perspective

Although functional aspects are critical for operational success, a new theme park also needs to be visually appealing and understandable to non-professional individuals involved with the project. An effective way of showcasing a new theme park is with an aerial perspective, often from a

"bird's-eye" perspective. The aerial perspective below is for the same theme park as the illustrated master plan above, but this perspective gives a better sense of what the theme park would look like as it more clearly comes to life in the eyes of viewers.



As the overall design vision for the project takes form, more detailed views of smaller parts of the project (such as an individual themed area) can also be prepared. LEFT is an example of a close-up rendering that Tom Montchai prepared for the Town Square entertainment complex in Las Vegas. This image shows the locally acclaimed children's park area that opened in 2007.

**Questions I have are:**

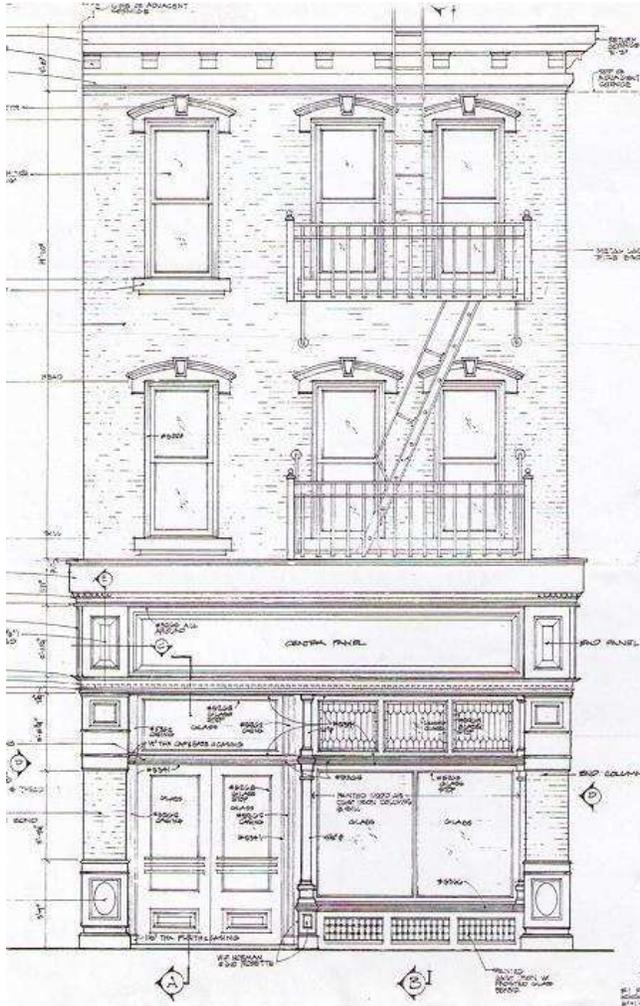
**Ideas I have are:**

## Concept Art



Our visual perspective can shift to ground level, now that we have a detailed overall perspective. The conceptual sketch, or vignette, below is one of the many concept art images prepared by Tom Montchai for the Town Square children's park area in Las Vegas shown in the close-up rendering above. These artist conception images provide a view of the new leisure attraction through the eyes of a typical visitor.

## Assistance with Later Design Efforts



This schematic design effort lays the groundwork for the subsequent design development and detailed design stages. The concept art images of individual structures will later become the starting point for scaled architectural drawings.

As an architect for Forrec Ltd, Tom Montchai was part of the design team for Universal Studios Florida and was the project architect for its Fievel's Playland area. LEFT is one of his facade drawings, along with a photograph of the actual building on that theme park's New York Street after construction.



**More Details on the Feasibility Study Process** These theme park design tasks can be part of an expanded planning effort that begins with the feasibility study. To learn more about the specific tasks involved in that study, [click here](http://www.leisure-business.com/feasibility.html). <http://www.leisure-business.com/feasibility.html>

## • *Theme Park Design* [Competition Comes to Campus ...](#)

[www.ineg.uark.edu](http://www.ineg.uark.edu)



The Center for Excellence in Logistics and Distribution (CELDi) within the Department of Industrial Engineering at the University of Arkansas recently hosted the IE Challenge, an amusement park design competition for middle- and high-school students. An all-time high 43 teams, consisting of two students each, entered this year's event.

Using the computer game **Roller Coaster Tycoon**, each team designed a unique theme park and wrote an essay describing their thought process. The parks were judged by a panel of current University of Arkansas engineering professors and students on various aspects like layout, the park's queuing system, personnel management, quality control and profitability.

The top-ten teams were invited to the Bell Engineering Center on the University of Arkansas campus to demonstrate their park design.

- They were given five minutes to make a PowerPoint presentation to the panel of judges.
- Then, the teams were assigned a complex scenario and given 45 minutes to address it.

Two teams—one from the junior division (grades 6-8) and one from the senior division (grades 9-12)—were crowned first place champions. The junior division champions were Spencer Heald and Caleb Velez from Gravette Middle School, and the senior division champions were Dillan Sims and Zac Laird of Benton County School of the Arts. Both teams received a \$600 check, trophies and a plaque for their school. Second and third place awards were also given, as well as honorable mention.

The IE Challenge is sponsored by the Research Experiences for Teachers (RET) program through the National Science Foundation.

**The goal of the challenge is to introduce middle- and high-school students to the world of industrial engineering by having them design a manufacturing process for a product.**

The RET representatives for the IE Challenge are Randall Reynolds of Gravette Middle School and Melissa Miller of Lynch Middle School in Farmington. University of Arkansas engineering professors Ed Pohl and Richard Cassady mentor Reynolds and Miller in conjunction with CELDi, and organize the event on behalf of the University of Arkansas.

( Thank you to Disney Park Blueprints for permission to share content from thier Web Site0

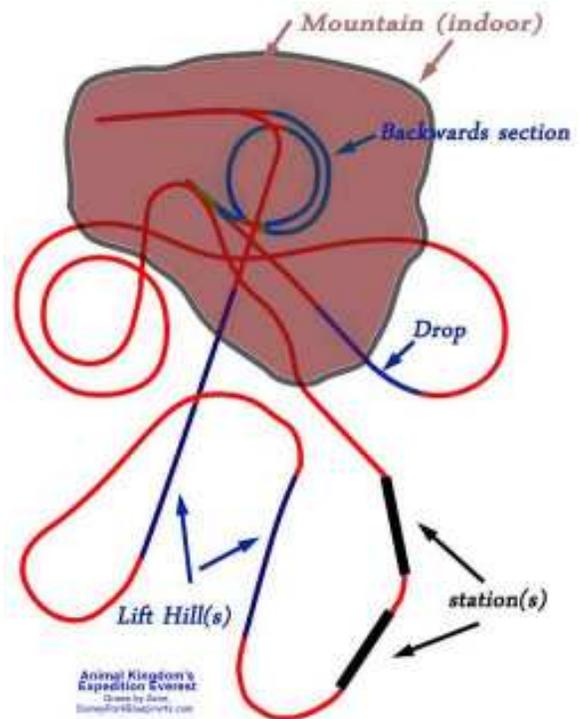
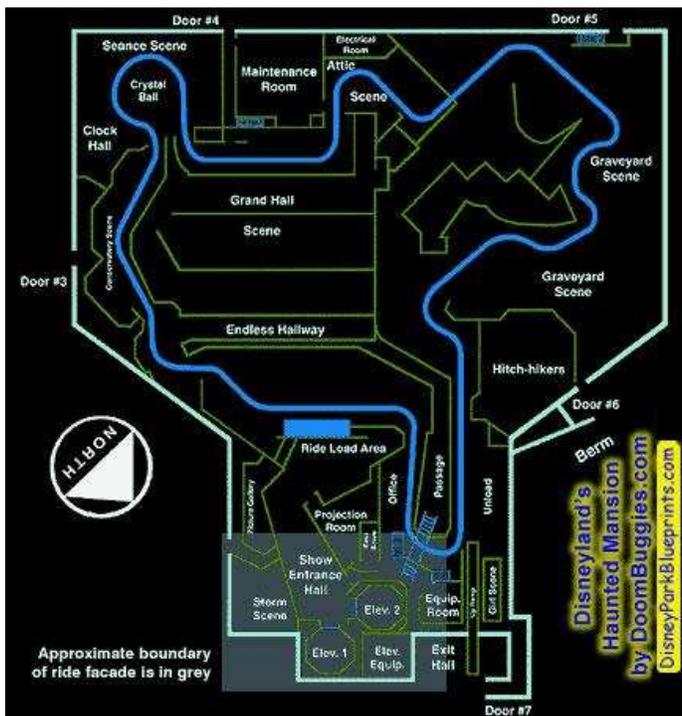
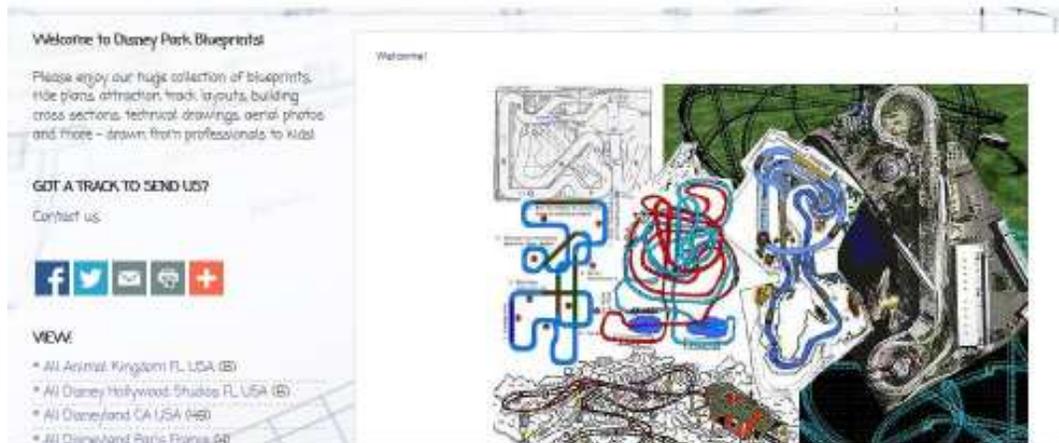
An unofficial collection of Disney *theme park* attraction blueprints and track *layouts*.

## Welcome to Disney Park Blueprints!

# Disney Park Blueprints

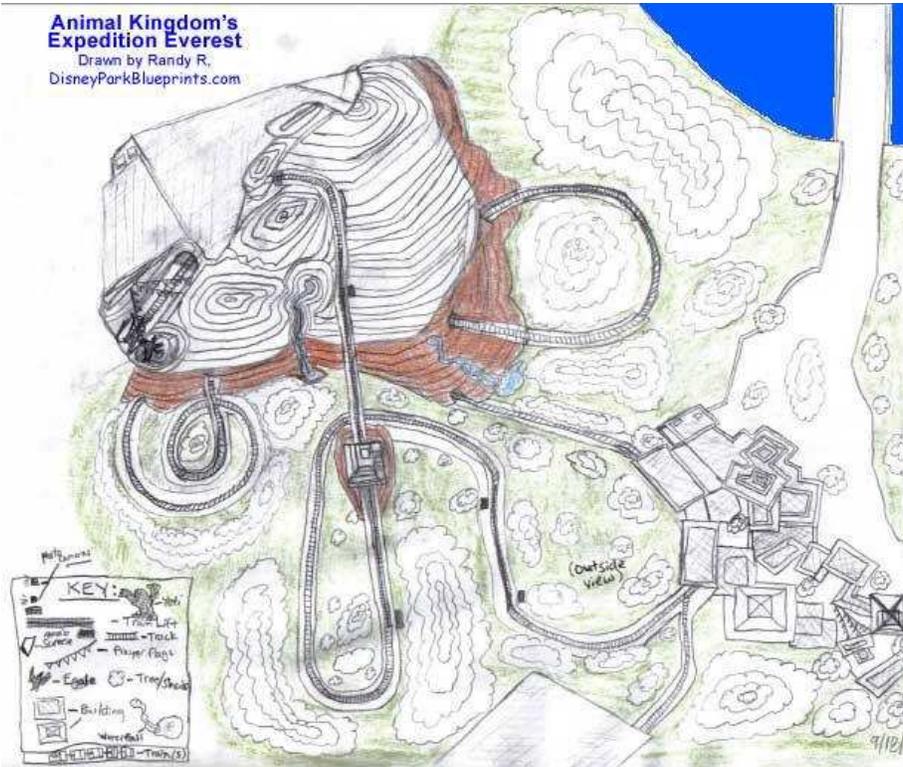
An unofficial collection of Disney theme park attraction blueprints and track layout.

Please enjoy our huge collection of blueprints, ride plans, attraction track layouts, building cross sections, technical drawings, aerial photos and more - drawn from professionals to kids!



**Animal Kingdom's Expedition Everest**

Drawn by Randy R,  
DisneyParkBlueprints.com



**Animal Kingdom's Kali River Rapids**

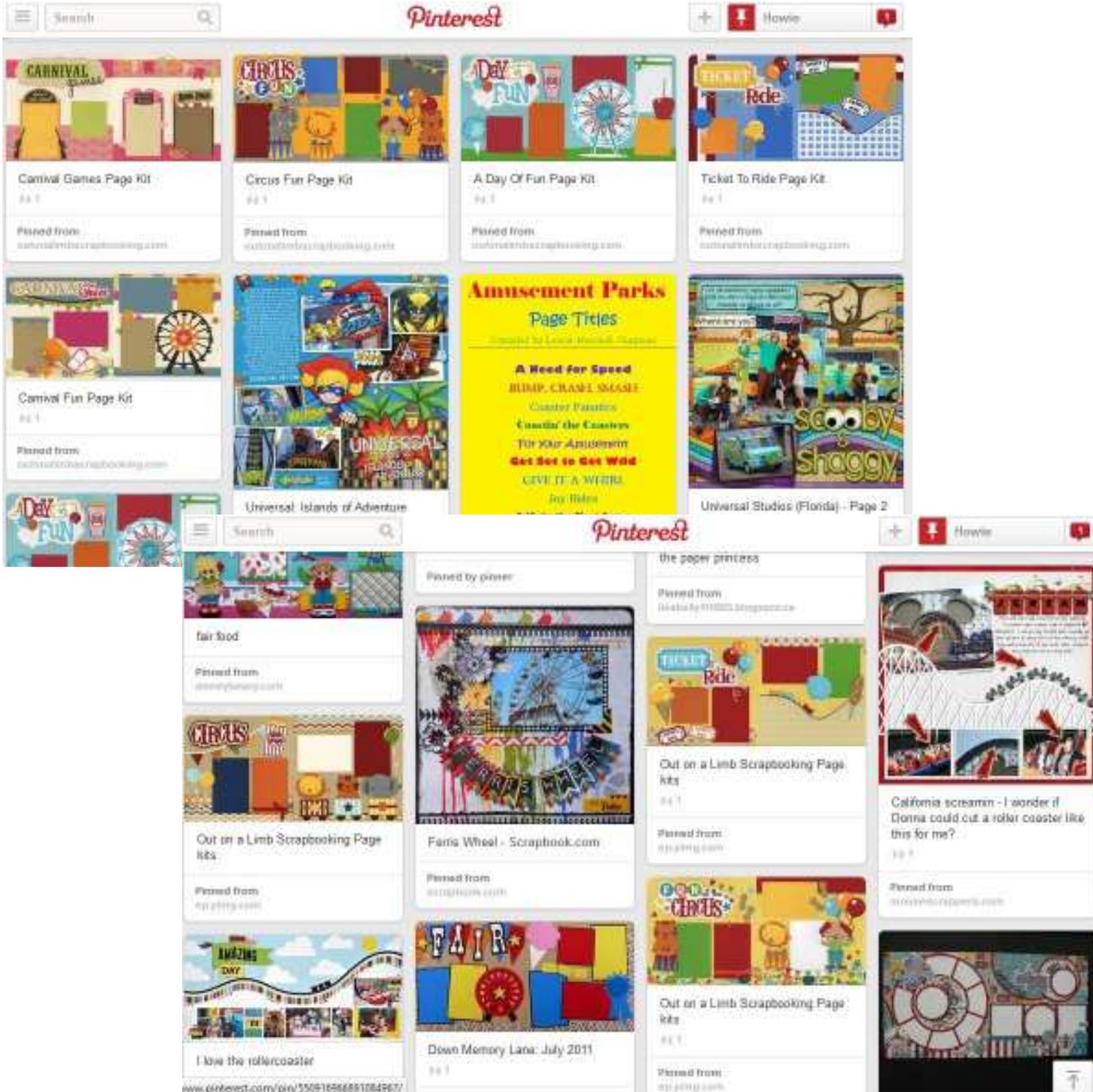
by Carson Blaese,  
DisnetParkBlueprints.com



# Theme Park Layouts on Pinterest

[www.pinterest.com/lpennix/theme-park-layouts/](http://www.pinterest.com/lpennix/theme-park-layouts/)

Pins about *Theme Park Layouts* hand-picked by Pinner Lisa Pennix | See more about amusement ... Whether you're looking for *design* inspiration, *layout* ideas ...



# Themagical.nl... a introduction

<http://themagical.nl/>

Welcome to this magical place where you can **play attraction simulations, discuss everything about theme parks** and related subjects and much more.

Themagical.nl has been online now since December 1st, 2000. This year (2014) we will celebrate our 14 year existence at the web.

Themagical.nl was originally founded at December 1st 2000. In 2003 our first simulation was published: Space Mountain (DLRP). In 2005 the Big Thunder Mountain (DLRP), 2006 Tower of Terror (HWS), 2007 Phantom Manor (DLRP), 2008 Millionaire Play It! and Expedition Everest we released for the public.

So have fun at this magical place and if you like, join the growing Themagical.nl community (it's free), so you can save your scores, post at the forum, add events, add web links and much more. We welcome you from all around the world. We receive visitors from over more than 35 different countries and the same amount of languages.

Martijn Leseman <http://themagical.nl/>

## Simulations you can try.

<u>ID</u>	<u>Game Selection</u>
6	<a href="#"><u>Big Thunder Mountain...</u></a> The wildest ride in the wilderness...(Disneyland Resort Paris)
7	<a href="#"><u>Expedition Everest Simulation</u></a> Legend of the Forbidden Mountain...(Animal Kingdom, Walt Disney World)
8	<a href="#"><u>Millionaire Play It Simulation</u></a> Win the 1 million dollar price! (Disney Hollywood Studios, Walt Disney World)
12	<a href="#"><u>Mission Space Simulation</u></a> Mission to Mars...(Epcot, Walt Disney World)
9	<a href="#"><u>Phantom Manor Simulation</u></a> 999 Ghosts are welcoming you...(Disneyland Resort Paris)
14	<a href="#"><u>Rock n Rollercoaster</u></a>
5	<a href="#"><u>Space Mountain Simulation</u></a> De la terre, de la lune... (Disneyland Resort Paris)
10	<a href="#"><u>Tower of Terror Simulation</u></a> Welcome to the twilight zone... (Disney Hollywood Studios, Walt Disney World)

# Theme Park Design and Layout

Thank you to :

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*University of Nebraska at Lincoln,*  
psavory2@gmail.com

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## Class Exercise : Theme Park Design and Layout

### Class assignment:

How much space does it take for a dark ride like Space Mountain at Walt Disney World?  
How much space does it take for an outdoor attraction like Splash Mountain at Walt Disney World?  
How many people attend theme parks on a given day  
How many people attend theme parks during the course of a year?  
Have student research and locate web sites that will provide data.

### Resources for YOU:

[Amusement Park and Attractions Industry Statistics - IAAPA](http://www.iaapa.org/resources/by-park-type/amusement-parks-and-attractions/industry-statistics)  
<http://www.iaapa.org/resources/by-park-type/amusement-parks-and-attractions/industry-statistics>

[Parks - Statistics & Facts | Statista](http://www.statista.com/topics/1525/parks/)  
<http://www.statista.com/topics/1525/parks/>

[Theme Parks - Facts and Statistics - Coaster Grotto](http://www.coastergrotto.com/parks.jsp)  
<http://www.coastergrotto.com/parks.jsp>

[PDF][Global Attractions Attendance Report - Aecom](http://www.aecom.com/deployedfiles/Internet/Capabilities/Economics/documents/2012%20The%20Index%20Combined_1-1_online.pdf)  
[http://www.aecom.com/deployedfiles/Internet/Capabilities/Economics/documents/2012%20The%20Index%20Combined\\_1-1\\_online.pdf](http://www.aecom.com/deployedfiles/Internet/Capabilities/Economics/documents/2012%20The%20Index%20Combined_1-1_online.pdf)

[Amusement and Theme Park - ReportLinker](http://www.reportlinker.com/ci02216/Amusement-and-Theme-Park.html)  
<http://www.reportlinker.com/ci02216/Amusement-and-Theme-Park.html>

[Amusement Parks in the US Market Research | IBISWorld](http://www.ibisworld.com/industry/default.aspx?indid=1646)  
<http://www.ibisworld.com/industry/default.aspx?indid=1646>

[Trends & Statistics - Amusement Industry Guide - LibGuides ...](http://guides.library.cornell.edu/amusement/trendsandstats)  
<http://guides.library.cornell.edu/amusement/trendsandstats>

### **Class assignment:**

#### Research Space Mountain & Splash Mountain at Walt Disney World

Q: How tall is the attraction?

Q; How much space in cubic feet does it take up?

Q; What is the diameter of the attraction?

Q; How many Audio-animatronics are there in the attraction

Q; How much did it cost to build?

#### Research Splash Mountain at Walt Disney World

Q: How tall is the attraction?

Q; How much space in cubic feet does it take up?

Q; What is the size of the land area that it occupies for the attraction?

Q; How many Audio-animatronics are there in the attraction

Q; How much did it cost to build?

### **Class Exercise : Theme Park Design-Layout-Operations-Cost**

1. How many major rides (e.g., Space Mountain, Expedition \Everest, Haunted Mansion and exhibits , do you want in your theme park? It will cost you between \$50 and \$100 million to build each ride and \$5 million for each exhibit. Though you choice will greatly impact your potential attendance.

You can use an average price of \$75 million to estimate the cost

2.. How much space do you need for the attraction?

3. What is your total cost to purchase the land and build the major rides and exhibits?

How much will land cost

4. What is the anticipated daily attendance at your theme park?

5. What does your team want to charge for admittance to your theme park?

### **Parking spaces**

To purchase the land, pave it, and clean and maintain it, it will cost \$2000 for each parking space you decide to build.

6. How many parking spaces do you want to build?

To answer this question, you might want to make some estimates:

Average number of people per vehicles?

Average length of time a group stays in the theme park (*i.e.*, a vehicle stays in the lot)?

7. What are you going to charge for parking? *You do not have to charge anything if you do not want to.*

8. Given what you are charging for parking, the number of spaces you decided to build, and the cost of \$2000 for building a parking space, how long will it be before your theme park starts to make a profit on parking?

9.. Estimate the one time expense of building paths, restrooms, signs, and snack stations. Let's estimate this as 1/4 of the total purchase and major ride and exhibit cost (Task 1-Number 4).

Your cost is:

10. Cost of other park workers (actors, maintenance, custodian, etc.). Let's assume there is 1 worker for 20 visitors. Assume salary and benefits cost \$20 per hour for each worker.

What is the cost per day for these other workers? What is the cost per year?

Cost of park supplies (brooms, paint, plants, paper towels). Assume that the park yearly spends 1/10th of the total purchase and major ride and exhibit cost .

11. What is the cost of supplies per year?

Insurance cost. Assume the park spends 1/20<sup>th</sup> of the total purchase cost and major ride and exhibit cost .

12. What is your Insurance cost?

Trash disposal cost. Assume your theme park spends \$250 per ton to dispose of trash (remember, Disneyland has 12 million pounds of trash per year).

13. What is your yearly disposal cost

14. Are there any other major costs not accounted for? If yes, specify them and estimate their yearly cost.

15. What is the average amount a person will spend on food while in the park?

16. What is your estimated yearly gross profit from food sales?

17. What is the average amount a person will spend on souvenirs while in the park?

18. What is your yearly estimated gross profit from souvenir sales?

19. Are there any other profits that have not been accounted for (earlier we took care of parking and admittance to the park)? If yes, specify them and estimate your yearly gross profit.

Even though we have made some HUGE simplifying assumptions to get the above numbers (*i.e.*, no interest on the building load) we could guess that they are in the right ballpark (give or take \$10 million). Using these ballpark estimated, does your park make money by the 20 year point?

## **Sketch out a map of your theme park.**

Be sure to indicate the parking lot, the entrance, the major rides and exhibits, the food court area, and the restrooms.

Are there reasons you placed certain facilities where they are?

# Chapter 14.

## People - Patents - Search - Research

Who Makes Your Theme Park? Creative People-Technical-Engineers-Ride Control-Show Control-Audio/Video	pg 189
Real World Resources	pg 190
<b>Help your students become better searchers</b>	<b>A-pg 191</b>
<b>Searching Assignment-Assessment-Truth or Trash</b>	<b>A-pg 192</b>
<b>Download Assignment-Assessment-Truth or Trash</b>	<b>A-pg 193</b>
<b>Making it real - Patent search-Research</b>	<b>A-pg 195</b>
Flying Entertainment Vehicle	pg 196
Flying Saucers attraction at Disneyland	pg 197
Six Degrees of Walt Disney	pg 197
<b>Patents - Samples and links for examination</b>	<b>A-pg 198</b>

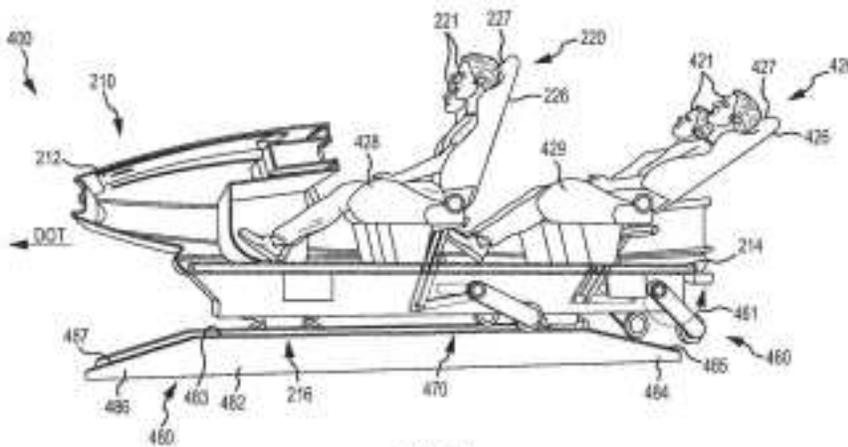


FIG.4

**Investigating to Build and Expand Foundation Knowledge** about Disney theme park attractions, rides and coasters. Students develop research skills , learn about technical topics in Engineering, technical reading and writing, and conduct experiments in math and science that build understanding about force and the laws of motion. Building Foundational Knowledge-

# Who Makes Your Theme Park?

**Take 5-10 min and have student record what they think these people do in the design and construction of a theme park.**

(Following Information/data provided courtesy of Steve Alcorn web site/on-line class-Theme Park Design Workshop-(C) 2009 Steve Alcorn and his two books)

Creative People

Technical People

Mechanical Engineers

Architectural Engineers

Structural Engineers

Civil Engineers

Ride Control Engineers

Show Control Engineers

Audio/Video Engineers

Lighting Designers

**The above jobs will be explored in detail in Chapter 13.**

## **Real World Resources** - Explore these sites if you have time- There will be additional presentation and research material in Chapter 9.

(Following Information/data provided courtesy of Steve Alcorn web site/on-line class-**Theme Park Design Workshop**-(C) 2009 Steve Alcorn and his two books)

Real World Resource <http://www.iaapa.org/>

Real World Resource: TEA site [www.teaconnect.org](http://www.teaconnect.org).

Real World Resource: <http://www.yesterland.com/>

Real World Resource: <http://www.landmarkusa.com/landmark/Home.html>

Real World Resource: <http://www.alcorn.com/>

Real World Resource: Screamscape <http://www.screamscape.com/>

Real World Resource: <http://entertainmentengineering.com/>

Real World Resource: EdwardsTechnologies <http://www.edwardstechnologies.com/>

Real World Resource: DAFE <http://www.dafe.org/>

Real World Resource <http://www.thrillnetwork.com/>

Real World Resource: Electrosonic <http://www.electrosonic.com/>

Real World Resource: Technifex <http://www.technifex.com/>

Real World Resource: Birket Engineering <http://portal.birket.com/>

Real World Resource: BRC Imagination Arts <http://brcweb.com/>

Real World Resource: Amusement Today  
<http://www.amusementtoday.com/>

Real World Resource: Theme Park Career Center

[The Walt Disney Company Home | Jobs and Careers](http://disneycareers.com/en/default/)

<http://disneycareers.com/en/default/>

## Search - Research - Patents

- Evidence of research and writing skills, search for knowledge, any systematic investigation to establish facts. Know how to Define the task, Locate information, Select resources, Organize notes and present the ideas.

## Google Help your students become better searchers

Web search can be a remarkable tool for students, and a bit of instruction in how to search for academic sources will help your students become critical thinkers and independent learners. With the materials on this site, you can help your students become skilled searchers- whether they're just starting out with search, or ready for more advanced training.  
Lesson Plans & Activities

Download lesson plans to develop your students' search literacy skills. [Browse lesson plans](#)



### Power Searching

Improve your search skills and learn advanced tips with online lessons and activities.

[Start now](#) Courses [Learn More](#) [Advanced Power Searching](#)

<http://www.powersearchingwithgoogle.com/course/ps/course.html>

Hone your searching skills by solving complex search challenges alongside peers from around the world in this two week online class.

Power Searching with Google

Thanks for visiting! For a short time, the course materials for Power Searching with Google will remain accessible below. Then they will be made permanently available at the [Google Search Education](#) site.

For a handy reference of all search tips from the course, check out our printable [Power Searching Quick Guide](#).

To receive announcements about future search-related classes, add yourself to the [Search Education Google Groups mailing list](#).

If you are specifically interested in search classes for K-12 education, join the [Search Education K-12 Google Groups mailing list](#).

Note that only Google can post to these groups, and you will not receive messages from other users. Hope to see you in one of the upcoming classes!

Schedule

[Class 1 - Introduction](#)

[Class 2 - Interpreting results](#) [Hangout on Air #1](#)

[Class 3 - Advanced techniques](#)

[Class 4 - Finding facts faster](#) [Hangout on Air #2](#)

[Class 5 - Checking your facts](#) [Hangout on Air #3](#)

[Class 6 - Putting it all together](#)

## **Advanced Power Searching**

Advanced Power Searching with Google begins on January 23, 2013!

Register now to sharpen your research skills and strengthen your use of advanced

Google search techniques to answer complex questions. Throughout this course you'll also:

Take your search strategies to a new level with sophisticated, independent search challenges.

Join a community of Advanced Searchers working together to solve search challenges.

Pose questions to Google search experts live in Hangouts and through a course forum.

Receive an Advanced Power Searching certificate upon completion.

Not sure if you're ready for Advanced Power Searching? Brush up on your search skills by visiting the [Power Searching with Google](#) course.

Challenge 1 - Mimicking presidential voices

Challenge 2 - Turtle fossils

Challenge 3 - Festival challenge

Challenge 4 - Humongous fungus

Challenge 5 - Salman Khan

Challenge 6 - Scrapbook enthusiast

Challenge 7 - Mystery music

Challenge 8 - Climate graph

Challenge 9 - Name that notebook

Challenge 10 - Who done it?

Challenge 11 - Feather identification

Challenge 12 - Where in the world?



## **A Google a Day Challenges**

Put your students' search skills to the test with these trivia challenges. [Browse challenges](#)

## >> Searching Assignment - [Assessment - Truth or Trash](#) (Download)

### Evaluate the following Web sites

You will be assigned a search engine to answer the following:

1. [All About Explorers](http://allaboutexplorers.com/) <http://allaboutexplorers.com/> We hope you find this site useful! Please explore, and be sure to let us know how we can improve your experience here. Today the new version of All About Explorers launches! We have tested our upgrades for several weeks, and believe that the ship is now seaworthy. Please check out the new surroundings and see what you think. Feel free to contact us if you have questions or problems, or if something seems to have disappeared. We'll do our best to correct the problem as soon as possible.
2. [Aluminum Foil Deflector Beanie](#)  
Shield your brain from mind control.
3. [Ban Dihydrogen Monoxide!](#) - Dihydrogen monoxide is colorless, odorless, tasteless, and kills uncounted thousands of people every year. Most of these deaths are caused by accidental inhalation of DHMO, but the dangers of dihydrogen monoxide do not end there. Prolonged exposure to its solid form causes severe tissue damage. Symptoms of DHMO ingestion can include excessive sweating and urination, and possibly a bloated feeling, nausea, vomiting and body electrolyte imbalance.
4. [Burmese Mountain Dog](#) - The Burmese Mountain Dog is a medium sized, muscular dog originally bred in Burma (Myanmar) to guard Buddhist temples. It was bred to guard the temples, and keep the temples free of rodents and beggars. It is also known as the Burmese Temple Dog. The Burmese Mountain Dog Club of America was established in 1985 to foster the breed in the United States and the world.
5. [Buy Dehydrated Water](#)  
It's compact, lightweight, and easy to store.
6. [California's Velcro Crop Under Challenge](#)  
Ken Umbach's obvious but amusing satirical piece of writing for students in Early to Late Adolescence.
7. [CarpSoft](#) A send-up of corporate jargon-speak. CarpSoft offers "goal-orientated corporate solutions." Beyond that, it's difficult to figure out exactly what they do. A creation of John Hopkin, also author of 'Britain for Americans,' 'British Stick Insect Foundation,' and 'Sellafield Zoo.'

8. [Clyven the Transgenic Talking Mouse](#) **Margaret A. Keyes, M.D., Ph.D.**, is a researcher in genetic medicine and Professor of Cell Biology and Genetics at RYT Hospital-Dwayne Medical Center. She is exploring the use of embryonic stem cells as a means to cure neurological conditions such as Alzheimer's Disease and Creutzfeldt-Jakob Disease.
9. [Feline Reactions to Bearded Men](#) - Cats were exposed to photographs of bearded men. The beards were of various sizes, shapes, and styles. The cats' responses were recorded and analyzed. Even the web address indicates the status of this piece of scientific research. Check their [Classics and Whatnot](#) page
10. [GenoChoice](#) -Create your own genetically healthy child online.
11. [Guide To Metric Time](#) - Metric Time (MT) is an attempt to create a decimalized time system for our modern base-10 using world. This is a neglected part of the Metric System which has created a whole measuring system based on 10 for mass, distance, volume, etc., but no official decimalized time units for normal day-to-day use.
12. [Haggis Hunt](#) -This funny site adamantly proclaims that a Haggis is a wild animal.
13. [Headless Chicken](#) - The story of Mike, a headless chicken, who survived for eighteen months with only part of his head.
14. [Kick started by a dung beetle](#) - Peter Macinnis shows how to make a simple story convincing. His Giant Dung Beetle in Cootaburra on the Corella River has appeared in news stories around the world.
15. [Mankato](#) - **Which is the real city website?** [Mankato Minnesota Home Page](#)  
The real city of Mankato [City of Mankato, Minnesota](#) is not impressed by the bogus site run from a local university.
16. [Martin Luther King Jr. - A True Historical Examination](#) [Martin Luther King](#) This seemingly innocent web site address [www.martinlutherking.org](http://www.martinlutherking.org) calls for the abolition of Martin Luther King Day and promotes White Pride. Content is inappropriate for all ages.
17. [MoonBeam Enterprise](#) - How to buy your piece of the Moon.
18. [Ova Prima Foundation](#) - Investigates which came first - the chicken or the egg.
19. [Pacific Northwest Tree Octopus](#) Does the Octopus really exist? The Pacific Northwest tree octopus can be found in the temperate rainforests of the Olympic Peninsula on the west coast of North America. A great site to use with all ages. It has even stumped historians. Have students truncate the web address so they are just left with the domain name. This will give them some insight into the validity of this site.
20. [Sellafield Zoo](#) Where the wildlife has a half-life!

21. [Republic of Cascadia](#) - The former American states of Oregon and Washington and the former Canadian province of British Columbia must join together as a sovereign nation. Only then can we have self-determination and take our rightful place in the Global Community.
22. [Stick Insect Foundation](#) - The British Stick Insect Foundation website, where discussion and views concerning Phasmidae (Stick Insects) are shared for the benefit of members and public in the UK and worldwide.
23. [Uncyclopedia](#)  
A satirical look at Wikipedia, including some very funny feature articles.

## >>> Making it real - [Patent search-Reserach](#)

*Assignment: Explore the following links to understand Disney Technology, design and patents*

### **Interesting Disney Patents-**

<http://www.hiddenmickeys.org/Patent/Patent.html>

<http://www.oitc.com/Disney/Patent/Patent.html>

### **Six Degrees of Walt Disney -- Patent Search Illuminates a Legend**

<http://blog.globalpatentsolutions.com/bid/28838/Six-Degrees-of-Walt-Disney-Patent-Search-Illuminates-a-Legend>

**Disney Patent/Tech Question** - So I'm sitting here indulging my Disney Geekdom a little and reading Disney patents and I came across the following one titled Speech Transformation System filed back in 1993.

<http://www.google.com/patents?id=nCc...+voice#PPP1,M1>

This is a really slick piece of technical work and it would be so cool if they were using it.

<http://micechat.com/forums/disneyland-resort/83502-disney-patent-tech-question.html>

The Matterhorn Bobsleds or the Matterhorn is an **attraction** composed of two intertwining **steel roller coasters**, which opened in 1959 at **Disneyland** in **Anaheim, California**.

It is modeled after the **Matterhorn**, a mountain in the **Swiss Alps**. It is the first tubular steel continuous track roller coaster ever constructed and thus an (**American Coaster Enthusiasts**) Coaster Landmark.

[Walt Disney](#) conceived the idea of a [toboggan](#) ride on the mountain with real snow but the logistics caused vehement objections by Disneyland construction chief [Joe Fowler](#). In this period the hill began to be known as Snow Hill. By now instead of picnicking, the hill had come to be used primarily as a nighttime [lovers' lane](#), much to Disney's dismay.

New [wild mouse](#)-style roller coasters got the attention of Disneyland executives who began to consider applying this emerging technology to the creation of a toboggan-themed coaster ride on an artificial mountain at the site.<sup>[3]</sup> The structure was also intended to act as a decorative overlay to camouflage the central pylon of the Skyway. Use of the Matterhorn both in style and name grew from Disney's extended vacation in Switzerland while filming [Third Man on the Mountain](#). He was impressed by the beauty of the real Matterhorn, and merged the toboggan ride concept with the thoughts of a [bobsled](#) coaster ride that would run around and through the structure.

The peak was first shown in a conceptual drawing that was once on display at [The Disney Gallery](#).

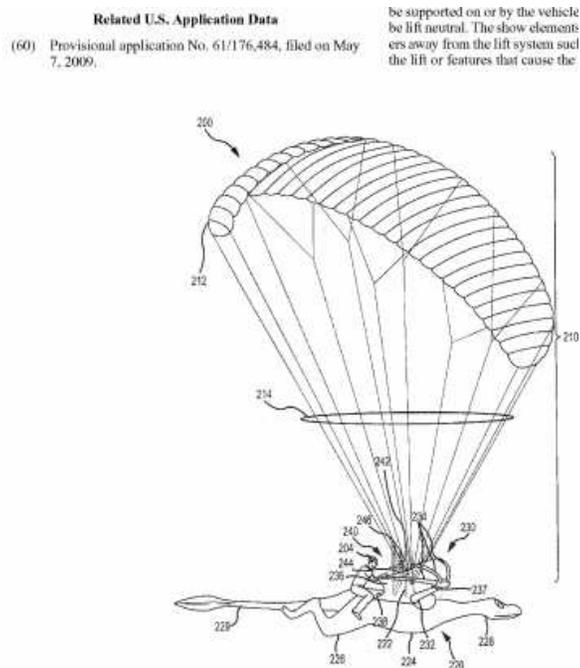


### FLYING ENTERTAINMENT VEHICLE:

Anthony Paul Dohi et al

<http://www.google.com/patents?id=W5bZAAAAEBAJ&printsec=drawing&zoom=4#v=onepage&q&f=false>

### BETAMOUSE #48 – Flying Entertainment Vehicles



Hello fellow aeronautic enthusiasts, this week we bring you an episode on FLYING ENTERTAINMENT VEHICLES, a patent awarded to Walt Disney Imagineering R&D unit. Can you say, flying audio-animatronics?!?

We can. And we shall talk about it.

<http://betamouse.net/flying-entertainment-vehicles/>

### [What could Dragons possibly have to do with New Fantasyland?](#)

A few months ago some [photos of flying dragon](#) themed ultra-light plane were spotted over Bakersfield, CA. The photos were taken by Bakersfield resident Tammy K and posted on her [Facebook page](#), then picked up by the media. The word on the street was that this was for a secret project for the Magic Kingdom's new Fantasyland expansion. I found that odd, because so far no dragon themed attraction has been announced for the park.

has created a blog and a viral video about a dragon that looks suspiciously like the flying device spotted in California.

Okay, so it's an ultra-light that has a body of a dragon, but it's still wicked cool. The above image is a patent filed by Disney in March of 2010. Imagineers have been testing the device on an airfield outside of Bakersfield, California.



And you can see photos of the craft in the [Bakersfield Californian](#) paper.

The timing of the patent and the shroud of secrecy that Disney had employees of the airfield swear to, has folks speculating this has to do with Avatar coming to Disney's

Animal Kingdom. I could see that. But I find it just as believable that it is a craft that will be used as part of Shanghai Disneyland's opening ceremony. China has a rich mythology built around Dragons and having one at the opening of the first mainland China Disney theme park would be seen as a good omen. Plus the patent filing was prior to Tom Staggs deciding to contact James Cameron regarding licensing Avatar for Disney's Animal Kingdom.

### Anyone have the inside scoop?

**Flying Saucers was an attraction at [Disneyland in Anaheim, California](#) from 1961 to 1966.**



Guests rode on personal flying saucers on a cushion of air, similar to an air hockey game, which played in a way similar to bumper cars with guests ramming each other with their saucers.

As the ride began, the saucers would be subject to a high volume of low-pressure air directed underneath the saucers by means of a grid of circular valves from a plenum chamber below the field on which they operated. As the saucers moved about the field, the valves would open and close in response to their proximity. As guests shifted their weight in any direction by

leaning, saucer movement would respond by means of an air jet derived from the increased pressure in the saucer's plenum.<sup>[1]</sup> If weight was centered, the saucer would begin to "hop" [up and](#) down as the air randomly escaped around the plenum. All that was required to regain control was for the guest to lean in any direction.



## Luigi's Flying Tires - 2012

Float on a cushion of air aboard a larger-than-life tire, thanks to Luigi from the Disney•Pixar movie *Cars*. Slide, glide and laugh as you lift ever-so-slightly off the ground on a 9-foot-wide Fettuccini-brand tire. Your kids won't tire of **Luigi's Flying Tires**, presented by Alamo!

### History

Luigi's Flying Tires uses a completely new, state-of-the-art ride system, but the attraction is inspired by a classic Disneyland Park attraction, Flying Saucers. More than 5 million aspiring space explorers rode the Flying Saucers from August 6, 1961 to August 5, 1966. Even decades later, it's still a favorite memory of many Disneyland Resort Guests — including *Cars* director John Lasseter. Now, the unique experience of floating on air can be relived and shared with a whole new generation of fans!



## >>> [Patent Search-Reserach](#)

### Six Degrees of Walt Disney -

Assignment: Explore the following links to understand Disney Technology, design and patents

[Amusement character boat](#)

[Amusement ride and self-propelled vehicle](#)

[Amusement ride for traveling down a water chute with reduced splash](#)

[Amusement ride having spinning passenger cars](#)

[Amusement ride raft](#)

[Apparatus and method for projection upon a three-dimensional object](#)

[Apparatus and method for creating a real image illusion](#)

[http://www.delphion.com/details?patent\\_number=4066256](http://www.delphion.com/details?patent_number=4066256)

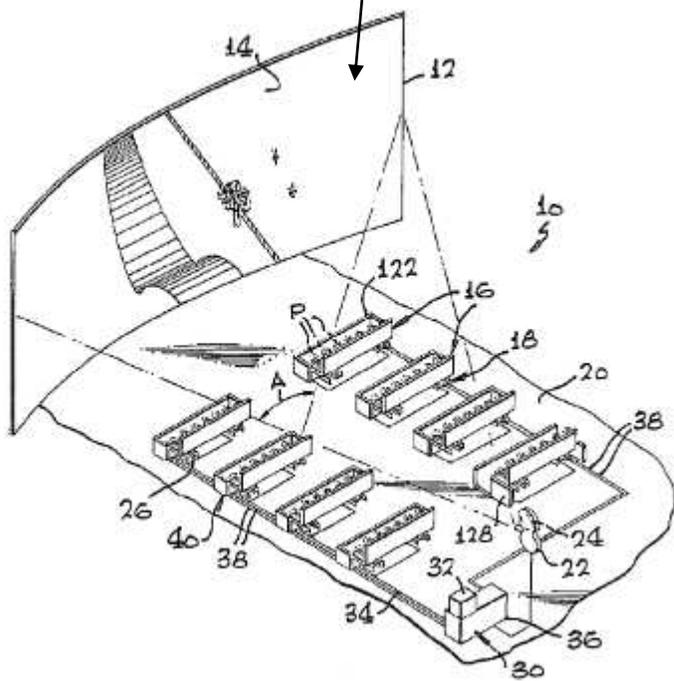
[Amusement ride vehicle](#) [Apparatus for vibrating seats](#)

[Computer controlled animation projection system](#)

**US4066256: Amusement ride**

[Amusement ride](#)

(1978 - Guess what this turned into?)



[Double hull amusement ride vehicle](#)

[Dynamic ride vehicle](#)

[Fireworks projectile having distinct shell configuration](#)

[High capacity passenger transport apparatus](#)

[Interactive electronic games and screen savers with multiple characters](#)

[Launcher for launching multiple fireworks projectiles](#)

[Light actuated target control for an amusement device](#)

[Method and apparatus for an amusement ride having an interactive guided vehicle](#)

[Method and apparatus for creating artificial rain](#)

[Method and apparatus for stabilizing and powering walking animated figures](#)

[Method and apparatus for a virtual video game](#)

[Method and system for guiding a user in a virtual reality presentation](#)

[Motion picture amusement ride](#)

[Portable multiple module simulator apparatus](#)

[Precision fireworks display system having a decreased environmental impact](#)

[Roller coaster simulator](#)

[Spaceship amusement ride](#)

[System and method for externally controlled spacing of self propelled vehicles along a rail](#)

[Three dimensional virtual image system](#)

# Chapter 15.

## Architect - Concept Art - Design - Sketch - 3D models

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Disney Concept Art - Disney Concept Art- Pinterest	pg-202
Disney Concept Art by Mary Blair	pg 204
Tools: Web 2.0 Drawing Tools for Every Level	pg 205
<b>Tools: Kids 3D Draw: TinkerCad</b>	<b>A-pg 205</b>
<b>Tools” Sketch-up: <u>Google Sketch Up</u></b>	<b>A-pg 206</b>
<b>Tools: Google Sketchup - Tutorials - How To get Started</b>	<b>A-pg 207</b>
Sketchup-With Building Maker - Google EARTH	pg 208
Made with SketchUp: Models by Walt Disney World	pg 209
<b>Tools: Advanced-Sketch and CAD Resources</b>	<b>A-pg 210</b>
30 Free 3D Model Applications	pg 211
Applications- Animation Software Available for PBL-STEM	pg 212



Image: Scientific Art Studio: Disney Mall Models [www.scientificartstudio.com](http://www.scientificartstudio.com) JPEG

**Expanding knowledge** of Disney theme park attractions, rides and coaster design from investigations. Students explore the type of attractions, and investigate each for the four Disney parks and the rides and attractions. Students develop research skills in curriculum content area, learn about technical reading and writing, creating the story, explore storyboards, utilize Web 2 tools, and conduct experiments presenting and rehearsing the “Pitch”.

**Applying knowledge** to the design and construction of Disney theme park attractions, rides and coaster models using their mini architect and engineer experience. Students will create "Concept Art", 3D design, sketches and build models of their "Theme Park Attraction and Story". Students experience and connect their new understanding about Disney theme park attractions, rides and coaster design during a virtual field trip via video conference with a "Disney" Imagineer.

# Design - Architect - Drawing

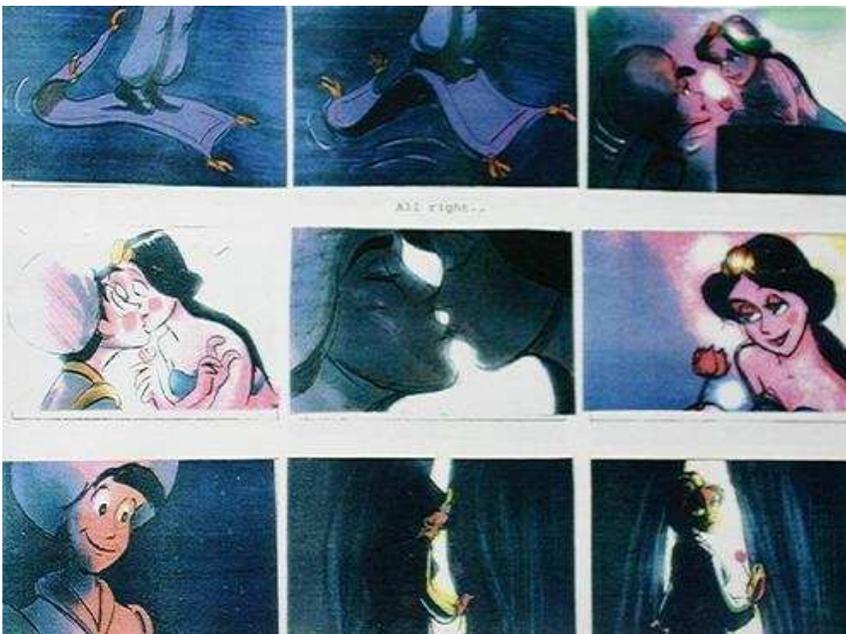
Class Assisgment >> Watch the Video->>

## >Arch Model Walk Thru - Radiator Springs

Kathy Mangum discusses Radiator Springs at What's New/What's Next presentation at Disneyland Resort <http://www.youtube.com/watch?v=qExNR6Fh-Co>

## Disney Concept Art

Tangled <http://disney-conceptart.tumblr.com/>



[Aladdin Concept art](#)  
[Aladdin Central Image Gallery](#)

<http://www.aladdincentral.org/images/thumbnails.php?album=50>

### 50 Beautiful Pieces Of Concept Art From Classic Disney Movies

<http://www.buzzfeed.com/summeranne/50-beautiful-pieces-of-concept-art-from-classic-di>

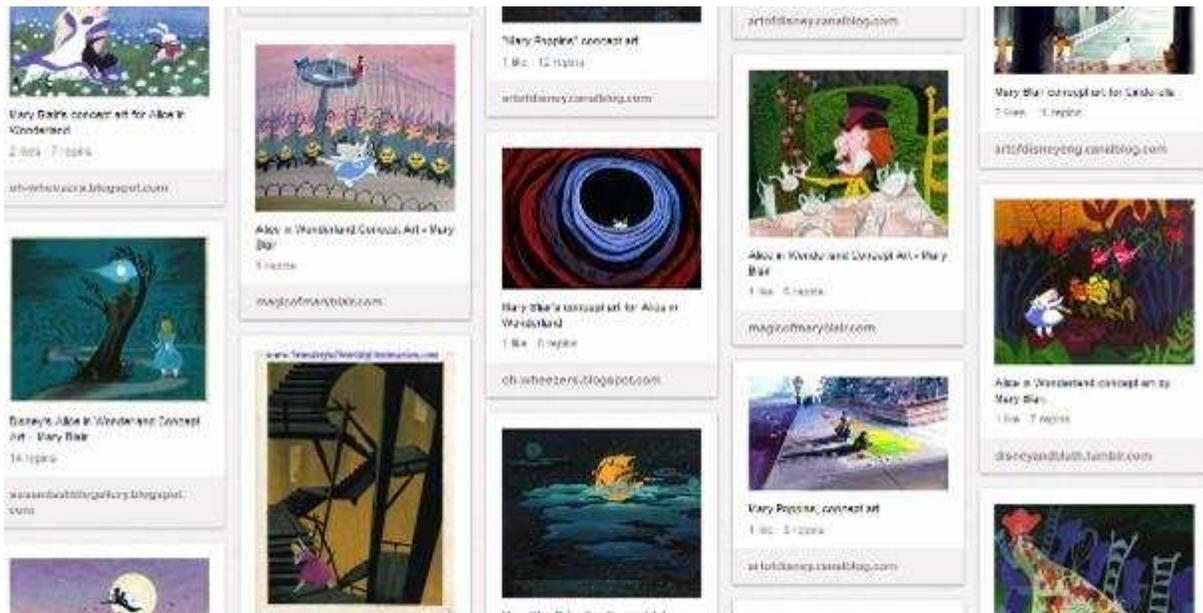
Snow White and the Seven Dwarfs (1937) Concept pieces by Gustaf Tenggren.

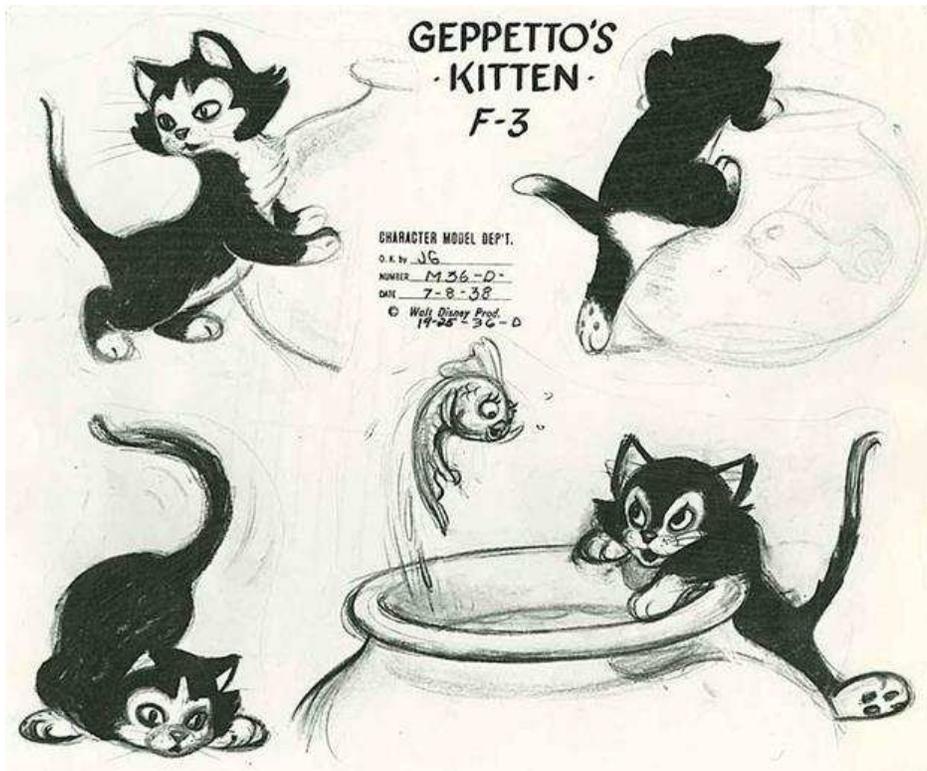


### Disney Concept Art - Pinterest

Disney concept art by Mary Blair and Eyvind Earle Disneys Sleeping Beauty ... Disney Studios concept piece Animation Art concept piece of Tinkerbell

<http://pinterest.com/laurenhayes/disney-concept-art/>





Geppetto/Gallery -

<http://disney.wikia.com/wiki/Geppetto/Gallery>

***Disney Concept Art - Wonderful World of Animation Art Gallery***  
[www.animationartgallery.com/artpages/disneyconceptart.html](http://www.animationartgallery.com/artpages/disneyconceptart.html)

***Disney's 'Frozen': Animated feature reveals icy concept art***  
<http://family-room.ew.com/2012/12/13/disneys-frozen-animated-feature-reveals-icy-concept-art-first-look/>

## Disney concept art by Mary Blair

Mary Blair was born in 1911 in Oklahoma. She began her career as a well received fine art watercolorist, but soon moved to working in the animation industry, most notably for Walt Disney Studios. Her art was a great favorite of Walt's. Mary Blair worked on concept art for *Saludos Amigos* and the *Three Caballeros*, and was credited as art supervisor. She is most famous for the wonderful concept art she did for *Alice in Wonderland*, *Peter Pan*, and *Cinderella*. She was credited in these films as color stylist. Walt Disney loved Mary Blair's sense of color styling, and asked her to help design the Disney exhibit and ride "It's a Small World" in the 1960's. She also designed the 90 foot high mural which is in the lobby of Disney's Contemporary Resort at Walt Disney World which opened in 1971. Through four different decades her artistic vision and color styling were a large part of many of the most beloved creations of the Walt Disney Company.

### Cinderella



\$9,000



Sold

**Disney concept art by Mary Blair and Eyvind Earle**

[www.cuckoocomics.com/conceptart.html](http://www.cuckoocomics.com/conceptart.html)

## >> Web 2.0 Drawing Tools for Every Level

**Draw Island** - One of the better digital art sites to come around. Draw Island allows a user to create a custom drawing and then even animate it. <http://drawisland.com/>

**Drawz It** <http://www.drawzit.com/> Simple, online drawing application, [Drawz It](#). Easy and perfect for young students. *do not have to create accounts*. Import pictures, add shapes or draw with the pencil. You can easily add text and choose from a selection of "rubber stamps." When finished with a drawing, click share it. You will be given a link to the JPG image.

**Queeky** <http://www.queeky.com/> is an advanced drawing application suitable for older students. Accounts are required and the basic membership level is free. Numerous powerful tools are included for the budding artist to experiment with. Brushes, charcoals and much more allow for amazing drawing capabilities. Multiple layers are also possible and demonstrate the power of digital art. Designed for older students.

**MugTug SketchPad** <http://mudcu.be/sketchpad/> Is Drawz It too simple-Queeky is too complicated? Try [MugTug SketchPad](#). Great user interface and just enough tools for the middle-years students. Tools can be customized; set diameter, hardness, flow and opacity of the brush tool.

## **TINKERCAD -Modeling-Sketch-3D-Draw - Mind to design in minutes-**

**TINKERCAD- Kids 3D Draw:** <https://tinkercad.com/>

**Tinkercad** is an easy-to-use 3D CAD tool. ... quickly turn your idea into a CAD model for a 3D printer. Free trial, no credit card required <https://tinkercad.com/Share>



**Tinkercad-Discover Shapes :**  
<https://tinkercad.com/things/>

**Tinkercad QuickStart Tutorial - YouTube**

How to use the basic tools, understand how the workplane affects drawing and be able to download the final STL file for printing on a 3D printer.

**[Tinkercad on Make: Live ep17 - YouTube](#)**

**Using Tinkercad to design a 3D printable model**

<http://johnbiehler.com/2012/01/10/using-tinkercad-to-design-a-3d-printable-model/>

New website, called [Tinkercad](#), that gives you the tools to create 3D objects right in your browser, for free. It is built on the WebGL platform so requires a

modern browser (and in some cases, modern graphics cards) to run it...I used Chrome as Safari doesn't currently support WebGL.

## Sketch-up: Google Sketch Up

<http://www.sketchup.com/product/gsu.html>



Google SketchUp is an open source software that you can use to create, share and present 3D models. It promises that you can have a great fun and for anyone use. Even it is for modeling your house, models for Google Earth etc. There are dozens of tutorials and videos that you can use to brace yourself in using this.

### Pros:

- Easy access to 3D modeling
- Dozens of tutorials and tips
- User friendly
- Upload your work in Google Earth
- Integrated with Google Maps

### Cons:

- Lacks advanced features of major CAD apps
- No export to CAD format in free version
- Can't add text and images to designs in free version

## Miner's Luck Roller coaster



<http://sketchup.google.com/3dwarehouse/details?mid=b878f1ee7d61539efea692e0a2674411&ct=mdsa>

# Google Sketchup - Tutorials - How To get Started

[Video Tutorials / SketchUp](#)

<http://www.sketchup.com/learn/videos>

[Getting started with Google SketchUp - YouTube](#)

[http://www.youtube.com/watch?v=gsfH\\_cyXa1o](http://www.youtube.com/watch?v=gsfH_cyXa1o)

[Self-paced Tutorials by Google - 3D Warehouse - SketchUp - Google](#)

<http://sketchup.google.com/3dwarehouse/cldetails?clid=36e1fa0d054a15eccc725c514c21d975>

[Tutorials-and-tips - Google SketchUp for Educators](#)

<http://sitescontent.google.com/google-sketchup-for-educators/Home/tutorials-and-tips>

## Google Sketchup-With Building Maker - Google EARTH

### Help make the world in 3D

Make 3D buildings for Google Earth in four easy steps.

- 1 Select a location to model (or let us choose one for you).
- 2 Align blocks with the photos to create your building.
- 3 Save your model to the 3D Warehouse.
- 4 Your model will be reviewed for Google Earth.

### Getting Started

[Help me choose an interesting location](#)

[Learn more about Building Maker](#)

[3D building acceptance criteria](#)

[Follow us on Twitter](#)

[Join the discussion](#)

[Add KML inventory](#)



Zoom into a location until a placemark appears.



<http://sketchup.google.com/3dwarehouse/buildingmaker>

Made with SketchUp: [Related items](#)

Image

Map

Image 3D View



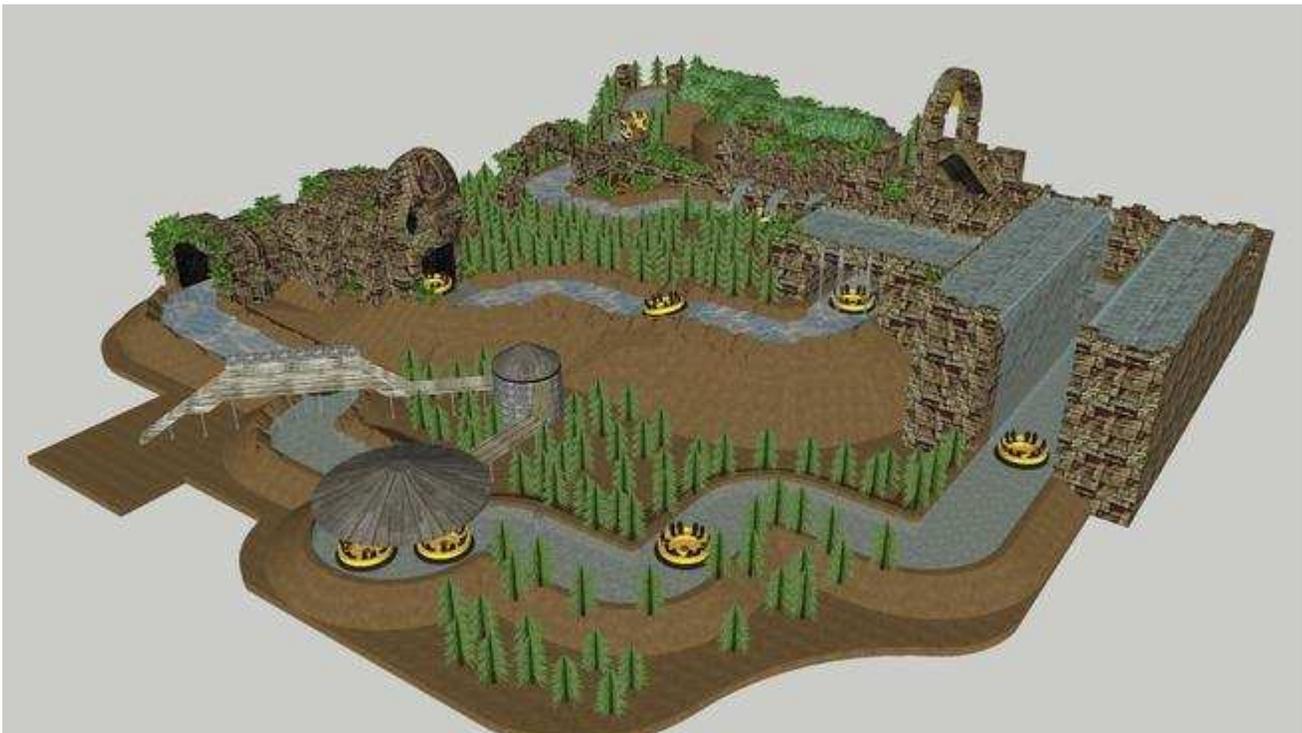
<http://sketchup.google.com/3dwarehouse/details?mid=f022e610f4155587fea692e0a2674411&ct=mdsa>

Made with SketchUp: [Related items](#) More models by [Walt Disney World](#)

This model was made with SketchUp, a 3D modeling tool from Trimble. [Learn more >](#)

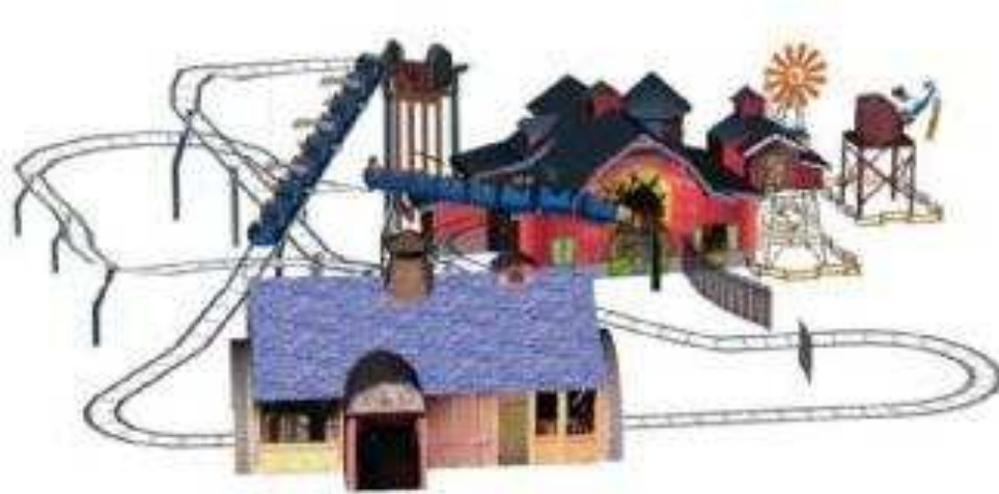
[Scuttle's Landing](#) Other models you might like: [Biergarten Restaurant](#)

<http://sketchup.google.com/3dwarehouse/details?mid=717524cbc9aec69fea692e0a2674411&ct=mdsa>

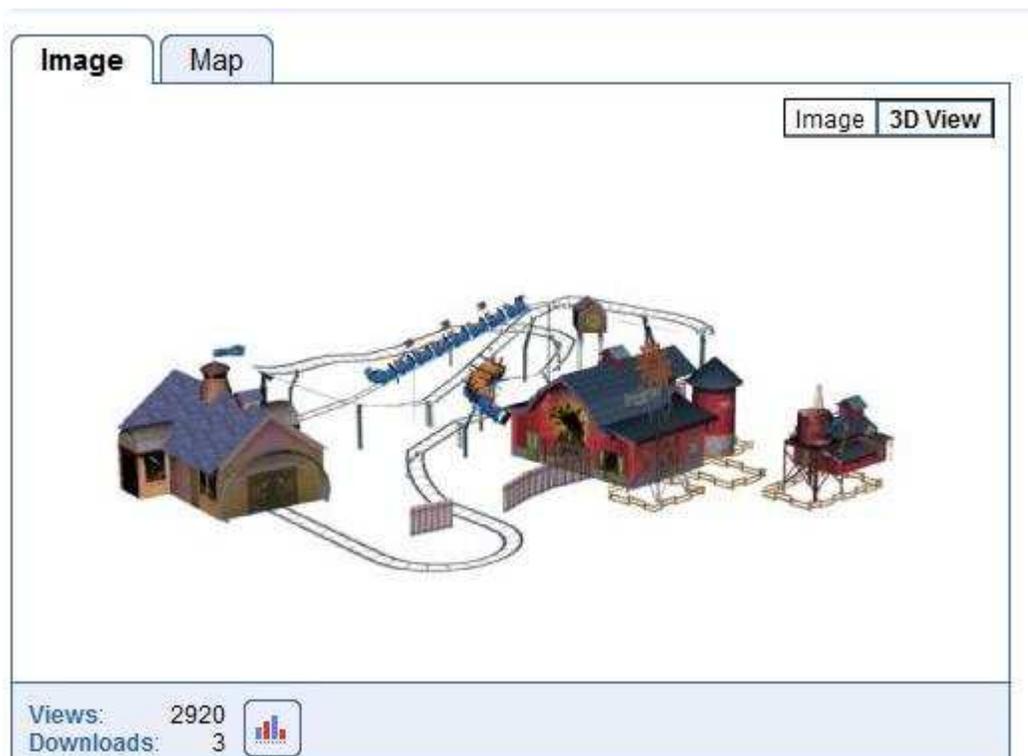


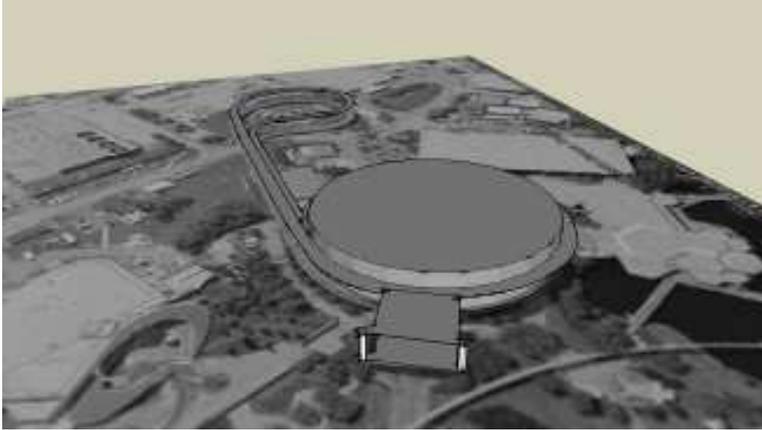
# The Barnstormer at Goofy's Wiseacre

[The Barnstormer at Goofy's...](#) by [Walt Disney World](#) The Barnstormer at Goofy's...

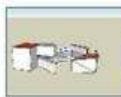


<http://sketchup.google.com/3dwarehouse/details?mid=d6ea59749226cb59fea692e0a2674411>





3D Warehouse Results Sorted by relevance Results 1 - 12 of about 43 for Pooh's



**pooh pee**  
by [C](#)  
1st try  
[Download Model](#)



**Pooh's Playful Spot**  
by [Walt Disney World](#)  
Pooh's Playful Spot is a...



**Pooh Corner**  
by [Venkatesham](#)  
Pooh Corner  
[Download Model](#)



**The Many Adventures of Winnie...**  
by [Walt Disney World](#)  
The Many Adventures of Winnie...



**Winnie the pooh style tree...**  
by [SmellyPizza](#)  
I'm not sure why sumone would...  
[Download Model](#)



**Pooh**  
by [caca](#)  
C'est un caca très heureux  
[Download Model](#)



**Pooh's Playful Spot...**  
by [Danny](#)  
Located in Disney World Of...  
[Download Model](#)



**pooh**  
by [aron](#)  
POOH  
[Download Model](#)

 **Trimble. 3D Warehouse**  
powered by 

<http://sketchup.google.com/3dwarehouse/search?uq=0797089932779026395412515&scoring=m>

## **Advanced - Sketch and CAD Resources:** By [Kay Tan](#). Filed in [Tools](#) **Free 3D Modeling Applications You Should Not Miss**

Complex **models** can be constructed from simple **3D** primitives, or created using **3DCanvas'** Object  
<http://www.hongkiat.com/blog/25-free-3d-modelling-applications-you-should-not-miss/>



### **Free 3D Modeling Applications And Websites: Create & Download**

K-3D excels at polygonal modeling, and includes basic **tools** for ...DesignWorkshop lets you **build** your own **3D models** for home design and ... Written by [Jane Bernardo](#)

<http://www.1stwebdesigner.com/design/free-3d-modeling-applications/>

## **30 Free 3D Modeling Applications | Bluefaqs**

Complex **models** can be constructed from simple **3D** primitives, or created using **3DCanvas'** Object **Building Tools**. **Modeling tools** are provided to deform, sculpt ... Written by Shawn Ramsey  
<http://bluefaqs.com/2009/05/30-free-3d-modeling-applications/>

## **Blender** <http://www.blender.org/>

Blender is a free and open source modeling and animation application that is great for modeling. The essentials of using this tools is having Interface, Modeling, Rigging, Rendering, Animation, UV Unwrapping, Shading, Physics and Particles, Imaging and Compositing, Real Time 3D/Game Creation, and Phyton scripting.

**Pros:** Great variety of features

Easy access of online help

Non-overlapping interface

**Cons:** More on the advanced users ---- Overwhelming features

# Applications- Animation Software Available for PBL-STEM

Free Computer Animation Programs - 2D Animation Software

**Software:** Animator-9 3.6 **License:** Free

**Comments:** Make animated GIFs from your digital camera.

[http://www.download.com/Animator-9/3000-2186\\_4-909432.html?tag=lst-0-12](http://www.download.com/Animator-9/3000-2186_4-909432.html?tag=lst-0-12)

**Software:** AniS 1.0 **License:** Free

**Comments:** Simple image manipulation for the web.

[http://www.download.com/AniS/3000-2410\\_4-10173883.html?tag=lst-0-9](http://www.download.com/AniS/3000-2410_4-10173883.html?tag=lst-0-9)

**Software:** Beneton Movie GIF **(Read a Review from Animation@About.com!)**

**License:** Free

**Comments:** Basic GIF animation software.

<http://www.benetonsoftware.com/>

**Software:** Cylekx 2.9 **(Read a Review from Animation@About.com!)** **License:** Free

**Comments:** Graphics and animation program.

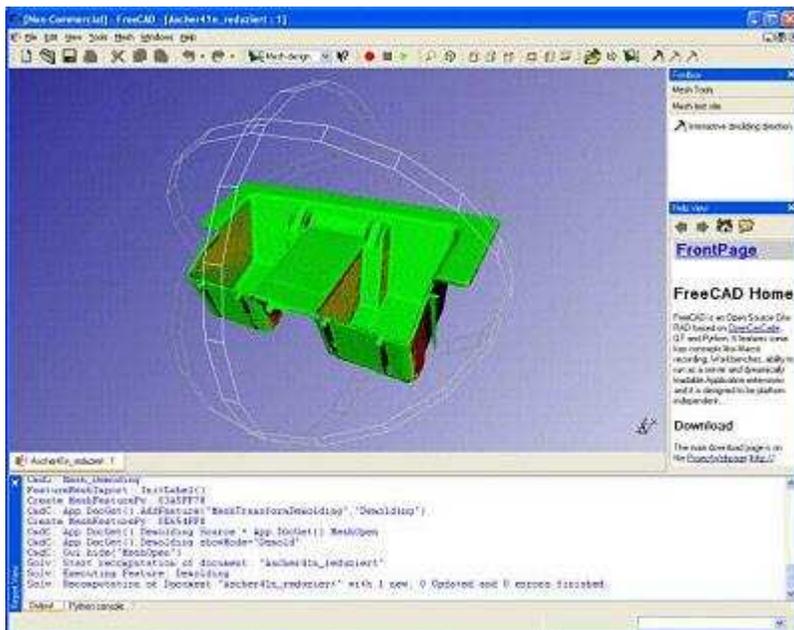
<http://www.cylekx.net/>

**Software:** Flash Media Show **(Read a Review from Animation@About.com!)**

**License:** Free (Standard Edition)

**Comments:** Flash slideshow builder/exporter.

[http://download.cnet.com/Flash-Media-Show-Standard/3000-2186\\_4-10832607.html](http://download.cnet.com/Flash-Media-Show-Standard/3000-2186_4-10832607.html)



**Software:** FotoMorph **(Read a Review from Animation@About.com!)** **License:** Free

**Comments:** Image morphing and animation software.

[http://download.cnet.com/FotoMorph/3000-2186\\_4-10845768.html?tag=mncol](http://download.cnet.com/FotoMorph/3000-2186_4-10845768.html?tag=mncol)

**Software:** GifSplitter 2 (**Read a Review from Animation@About.com!**)

**License:** Free

**Comments:** Simple GIF animation and splitting program.

[http://download.cnet.com/GifSplitter/3000-2186\\_4-10387995.html](http://download.cnet.com/GifSplitter/3000-2186_4-10387995.html)

**Software:** Jumpwel **License:** Free

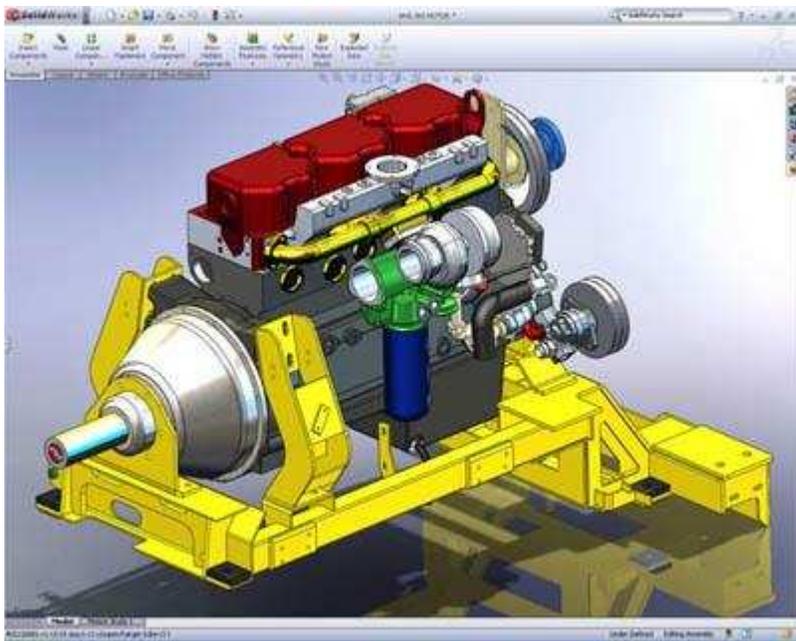
**Comments:** Basic object manipulator for use in HTML; uses Java applets.

[http://www.download.com/Jumpwel/3000-2186\\_4-10262586.html?tag=lst-0-7](http://www.download.com/Jumpwel/3000-2186_4-10262586.html?tag=lst-0-7)

**Software:** Sqirlz Lite 1.1d **License:** Free

**Comments:** Animated image distorter that exports in AVI format.

[http://www.download.com/Sqirlz-Lite/3000-2186\\_4-10368066.html?tag=lst-0-2](http://www.download.com/Sqirlz-Lite/3000-2186_4-10368066.html?tag=lst-0-2)



**Software:** Sqirlz Morph 2.1 (**Read a Review from Animation@About.com!**)

**License:** Free

**Comments:** Animated image morpher and blender. Capable of outputting in Flash

[http://download.cnet.com/Sqirlz-Morph/3000-2186\\_4-10304209.html](http://download.cnet.com/Sqirlz-Morph/3000-2186_4-10304209.html)

### 3D Animation Software

**Software:** Cyberdelia (**Read a Review from Animation@About.com!**) **License:** Free

**Comments:** 3D Animation with support for exporting into Macromedia

[http://www.download.com/Cyberdelia/3000-2186\\_4-10169778.html?tag=lst-0-10](http://www.download.com/Cyberdelia/3000-2186_4-10169778.html?tag=lst-0-10)

# Chapter 16.

## Testing - Experimenting- Simulations

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Image: The Prius Energy Coaster | GreenCupboards [www.greencupboards.com](http://www.greencupboards.com) JPEG Image

Applying knowledge - Students engage in preparation activities that set the stage for the learning ahead. [Mini-experiences in each of job roles](#) Mini-Engineer Experience-Students test design ideas using online simulations.

Expanding knowledge - Observation and reflection after using the On-Line, Web applications, simulators, construction and projects. This is a critical element of the expanding knowledge process for students to experience.

# Software Exploration

( Courtesy of Jason Digital Lab )- <http://www.eduweb.com/portfolio/earthsystems/>



Coaster Creator is an interactive game that explores the science behind roller coasters. Students must use their knowledge of potential energy and kinetic energy as they design their own coaster. Rapid energy transfer is the key to roller coaster thrills. Guide students to understand that if there is too much kinetic energy, their coaster will crash, and if there's too little, it will stall.

## Essential Question

How can models help us to predict the nature of objects and systems that we cannot see?

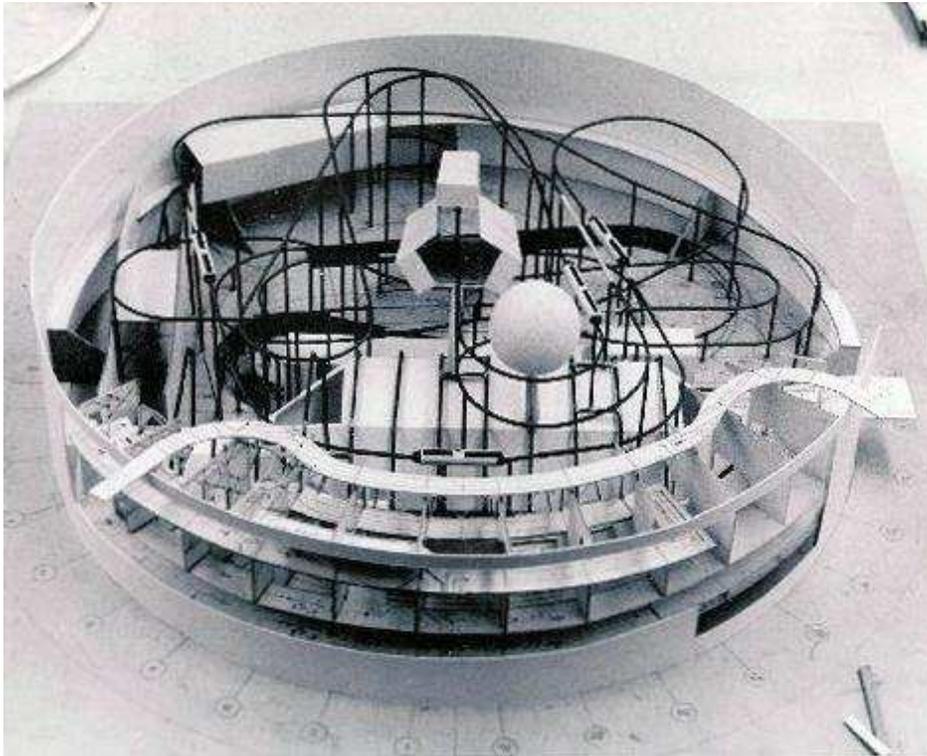
Encourage students to reflect on this and self-generated questions before, during, and after game play.

( Credit to BrainPOP and BrainPOP's Licensees)

## Making Magic: How Computers Influenced Roller Coaster Design

- **William M. Watkins, Former Disney Chief Mechanical Engineer**
- 
- A former Disney engineer talks about the design process and decisions made in the design of Disney's coasters Space Mountain and Big Thunder Mountain Railroad in [this interesting article](#).

<http://progresscityusa.com/2010/07/11/making-magic-how-computers-influenced-roller-coaster-design/>



<sup>3</sup>. Allears. WDW images. [www.allears.net/](http://www.allears.net/) JPEG file

To design a ride such as Space Mountain to fit in a confined space, be smooth and have the capacity to accommodate a large number of passengers each day, it is necessary to accurately calculate speeds and timing. In order to avoid the possibility of collisions between vehicles, the track is divided into zones which are on shorter time intervals than that in which the cars are dispatched and each zone is protected by brakes. The speeds, and thus the timing of vehicles, is a function of changes in elevation, and the various drag factors that tend to slow the vehicle down.

**WTK (want to know): Questions that have been developed in the past:**

**What I want to know:**

How much money does it take to build a great theme park or roller coaster ride?

•

What are the different kinds of careers in the theme park /amusement park industry?

•

How and where do they build theme park/ roller coasters?

•

How many accidents and deaths have been involved in theme park /amusement parks?

•

Where was the first theme park built? Who thought of it and where was it located?

•

When did theme park /amusement parks first come into existence?

•

Who are some famous inventors?

•

Do other countries have big theme park /amusement parks like the United States?

•

What is the fastest speed and highest drop of all the roller coasters?

•

How fast can you go on a roller coaster and still be safe?

•

How do they test rides to make sure they are safe?

•

What is the oldest theme park /ride still in existence?

•

Does the government monitor the theme park /amusement park industry?

•

How many people puke on rides on any given day in the park?

•

Why are some people thrill seekers and others can't even ride the Ferris wheel?

•

What makes people motion sick?

•

How do you go about designing a theme park /roller coaster?

•

Have lawsuits have been filed in the last 30 years for accidents in theme parks-what were the outcomes?

•

How much math do you need to know to design a ride/attraction?

•

What are all the types of materials that go into a attractio/ride?

•

What attraction/rides of the future will look like (like the futuristic car shows)?

What kind of education do you need to be a theme park/attraction/ ride designer?

## >> Laying the Groundwork

Students engage in preparation activities that set the stage for the learning ahead.

### Expanding Knowledge

The project moves ahead with mini-experiences in each of job roles on a theme park attractions, attraction, rides or coaster design team.

Students use their knowledge as they engage in mini architect (math), engineer (science), public relations (language arts), and researcher (social studies) tasks that prepare them for the culminating project. This allows all students to experience all job roles and learn the valuable information embedded in each.

- [Mini-Engineer Experience](#) > Students test design ideas using online simulations and then create maquettes (small model of an intended work) , or 3-D models of a theme park attraction, ride or coaster design.

- [HowStuffWorks "Roller Coaster Physics"](#)
- <http://science.howstuffworks.com/engineering/structural/roller-coaster3.htm>

- [Amusement Park Physics -- Design a Roller Coaster](#)
- <http://www.learner.org/interactives/parkphysics/coaster/>

<sup>34</sup>. Web Image: Learner.ORG: <http://www.learner.org/interactives/parkphysics/coaster/> Screen Shot- JPEG Image

## • Web 2.0 Coaster Simulations

Roller Coaster <http://puzzling.caret.cam.ac.uk/game.php?game=roller>

Grade Levels: 5-12- See potential energy convert to kinetic energy in this interactive activity from WGBH that shows a roller coaster in action.



Interactive - Energy in a Roller Coaster Ride

Design a **Roller Coaster**. Try your hand at designing your own **roller coaster**.

**Roller Coaster Simulator - Design Your Coaster**

**ADS in this site**

[Free Technology for Teachers: Roller Coaster Simulator - Design ...](#)



35. Web Images - This page <http://puzzling.caret.cam.ac.uk/> Screen Shot JPEG Image

**Funderstanding**, a learning systems design firm, offers a free roller coaster design activity. The object of the *Roller Coaster Simulator* activity is ...

<http://www.freetech4teachers.com/2010/06/roller-coaster-simulator-design-your.html#.UfB6o22-2ac>



Funderstanding, a learning systems design firm, offers a free roller coaster design activity. The object of the [Roller Coaster Simulator](#) activity is to get the coaster through the track without any roll-backs. To that end the [Roller Coaster Simulator](#) allows users to design the height and spacing of the rise and fall of a roller coaster track. Users can also adjust the speed of coaster, the mass of the coaster, the friction of the coaster on the track, and the strength of the gravitational pull on the coaster.

<http://www.funderstanding.com/slg/coaster/>

**Roller coaster physics** provide a fascinating look into how **roller coasters** work. Learn about **roller coaster physics** and how coasters use the laws of energy.

[www.funderstanding.com/slg/coaster/](http://www.funderstanding.com/slg/coaster/)

## Roller Coaster Physics

### Investigation - PhET Contribution School Campaign

<http://phet.colorado.edu/en/contributions/view/3027>

#### Downloadable files

- [Roller Coaster Physics Investigation.doc](#) - 56 kB

Or you may [download](#) all files as a compressed zip archive.

#### Submission Information

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**School / Organization** St Mary's County Public Schools

For Teachers > Browse Activities > Roller Coaster Physics Investigation   
Activity Sheet-Downloadable files - [Roller Coaster Physics Investigation.doc](#) - 56 kB

Or you may [download](#) all files as a compressed zip archive.

## Self-Paced Lesson - [Energy Transfer in a Roller Coaster](#)



In this blended lesson designed to enhance literacy skills, students examine energy forms in moving objects and discover how changes from one form to another move cars through a roller coaster ride.

<sup>37</sup>. Above image: File:Maurer Söhne X-Coaster SkyLoop model (IAAPA 2009).jpg - Wikimedia Commonscommons.wikimedia.org

### LAB Activity provided courtesy of PhET University of Colorado

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Period: \_\_\_\_\_

#### Online Simulation Lab → ROLLER COASTER PHYSICS

**Purpose:** *The purpose of this simulation lab is to strengthen your understanding of energy conservation in real-world applications. You will use a skateboarder and his park to represent the roller coaster and its track. You will observe many other physics concepts at work as well.*

#### Pre-Lab Inquiry

##### What Do You Think?

*You are asked to design a new roller coaster. It is totally up to you to determine what the riders will experience. The only rule is that the coaster obeys the laws of physics. Take a minute and brainstorm about a design you would like.*

1. Name three adjectives that will describe your roller coaster.
2. Describe three features your roller coaster will have that will attract riders.
3. Name three variables that will affect the type of experience a rider will have. EXPLAIN.
4. Name three concepts of physics that the roller coaster must obey in order to be successful. EXPLAIN.
5. Draw a side-view sketch of your roller coaster design below.

## Concept Review

*Write out an explanation for each question below.*

6. Define potential and kinetic energy.
7. Describe when potential and kinetic energy are at their highest on a roller coaster.
8. How does conservation of energy apply to roller coasters?
9. How does friction affect a roller coaster?
10. What is responsible for the apparent change in weight that riders experience on coasters?

## Internet Lab Activity

Open up the University of Colorado, PhET Energy Skate Park simulation:

1. Go to <http://phet.colorado.edu/>
2. Click "Play with Sims...>"
3. Click the "Energy Skate Park" icon
4. Click "Run Now!"
5. Spend ONE MINUTE to explore the simulation and familiarize yourself with the controls.
6. Click the "Reset" button in the top-right corner. Begin the exploration below.

### **Exploration Questions**

*Use the simulation to answer the questions below.*

1. Does the skater hit the same height on the opposite sides of the track? (Checkmark the "Show Grid" button to help you determine this!)
  - a. What must be true about the system for this to be possible?
  - b. Click the "Track Friction >>" button to adjust the friction settings. What do you observe about the skater as you adjust the setting?
2. Now, turn on the energy Pie Chart and Bar Graph. (You may need to move things around a little to see everything.)
  - a. On the visual aids, what color represents potential energy and which is kinetic energy?
  - b. When does the skater have the highest amount of kinetic energy? Potential energy?
  - c. When does the skater have the lowest amount of kinetic energy? Potential energy?
  - d. Describe how the bar graph changes as the skater moves along the track.
  - e. Explain which visual aid (pie chart or bar graph) helps you understand conservation of energy better, and why.
  - f. Keep your preferred visual aid open for the remainder of the investigation.

# Build Your Roller Coaster

Use the simulation to build and test your roller coaster design from the Pre-Lab Inquiry.

1. If you made any changes during the Exploration Questions, click "Reset" again.
2. Right-click the track and select "Roller Coaster Mode". This keeps the skater attached.
3. Notice that you can zoom out to give yourself a wider view. You may want to do this as you build your coaster.
4. Drag in new pieces of track and manipulate the curves until you closely match your pre-lab sketch.
5. Drag and drop the rider to the location of the beginning and observe. **DO NOT MAKE CHANGES YET.**
  - a. The ride probably was not successful on the first attempt. If not, what physics concept(s) was violated?
    - a. Identify several adjustments you need to make.
6. After making the initial adjustments, try the ride again. Continue making adjustments until the ride becomes successful (rider makes it from one end to the other completely - does not have to make it back through).
7. Raise your hand and show the teacher your successful design.
8. Draw a side-view sketch of your successful design below.
9. Label the points of acceleration on your sketch.
  - a. Down arrow = slowing down
  - b. Up arrow = speeding up
  - c. Circle arrow = changing direction
10. Click the "Track Friction >>" button and adjust the setting.
11. Run the rider through your track again and observe the changes.
  - a. Did the rider make it to the end?
    - a. What do you notice differently about the pie chart and/or bar graph?
12. Describe the changes you need to make to your design, as a result of the presence of friction.
13. Make the necessary adjustments until you achieve a successful ride with friction.
14. Raise your hand and show the teacher your friction-savvy coaster.
15. Draw a side-view sketch of your friction-savvy coaster below.

## Post-Lab Questions:

1. List and explain the differences between each of your sketches.
2. At the top of a hill on the ride, most of the energy is \_\_\_\_\_ and at the bottom of the hill, most of the energy is converted into \_\_\_\_\_.
3. What are the equations for potential and kinetic energy?
4. If you were an engineer of an actual roller coaster, what information would you need to know in order to ensure that your coaster would be safe?
5. Would it be possible to predict the speeds that a coaster will reach before it's ever placed on the track? How?
6. The most thrilling roller coasters usually contain vertical loops. What keeps the riders in their seats when they go upside-down?
7. Consider going around a horizontal turn to the right. If the coaster suddenly slipped off the track, what path would it follow? Draw a top-view sketch below.
8. You should have drawn the coaster following a straight line after it slipped off the track. Since that is the path it would take without the track, there must be an unbalanced force causing it to accelerate (turn) around the bend. What direction is that force pointing? Draw a top-view sketch of the force vectors below.

**Above lab activity provided courtesy of PhET University of Colorado**

## Energy Skate Park - PhET - University of Colorado Boulder

**Roller Coaster Physics Investigation** This contribution has received a Gold Star because it is a high quality ... Energy **Simulation**

**Web LINK HERE:** <http://phet.colorado.edu/en/simulation/energy-skate-park>

### Energy Skate Park



**Download** 2,790 kB

**Run Now!**

**Embed**

Version: 2.13 (change log)

### LOTS of MATH

Learn about conservation of energy with a skater dude! Build tracks, ramps and jumps for the skater and view the kinetic energy, potential energy and friction as he moves. You can also take the skater to different planets or even space!

### TEACHING RESOURCES

#### Main Topics

- Energy
- Conservation of Energy
- Kinetic Energy

## Teaching Resources -Main Topics

- Energy
- Conservation of Energy
- Kinetic Energy
- Potential Energy
- Friction

<sup>38</sup>. Image left Screen shot Web: **Web LINK:** <http://phet.colorado.edu/en/simulation/> JPEG Image

### Sample Learning Goals

- Explain the Conservation of Mechanical Energy concept using kinetic and gravitational potential energy.

Tips for Teachers: The [teacher's guide](#) (pdf) contains tips created by the PhET team.

## [Discovery Kids :: Games - Build A Coaster](#)

Put together the tracks of your own *roller coaster* scream machine.

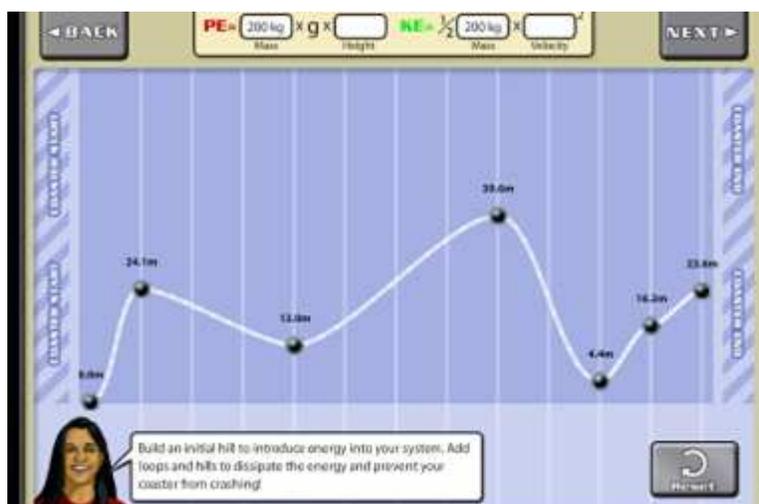


<http://kids.discovery.com/games/build-play/build-a-coaster>

36. Image: Screen Shot: Discovery Kids-  
<http://kids.discovery.com/games/> JPEG Image

## [EXCELLENT GAMEUP | COASTER CREATOR - BrainPOP](#)

[www.brainpop.com](http://www.brainpop.com) > [GAME UP](#) > [SCIENCE GAMES](#)



Students use BrainPOP resources and an interactive game to experiment with potential and kinetic energy.

<http://www.brainpop.com/games/coastercreator/>

42. Image: Screen Shot: BrainPop: <http://www.brainpop.com> JPEG Image

# Potential and Kinetic Energy Lesson Plan: Coaster Creator Game

6-8, 9-12

[More Sharing Services Share](#)

In this lesson plan, which is adaptable for grades 6-12, students use an online simulation to design their own roller coaster car and track which uses just the right amount of energy to get a coaster going but make sure it stops in time. Students will observe real-time transfers of energy between kinetic, potential, and dissipated energy. They will also learn to interpret the data generated by their coasters in order to iterate their coaster design, try for great success, and improve their score.

---

*engineers help*  
**SHAPE THE FUTURE**

## **Hands-on Activity: Building Roller Coasters**

Activity source: © 2007 [TeachEngineering.org](http://www.teachengineering.org). Used with permission. Original activity at: [http://www.teachengineering.org/view\\_activity.php?url=http://www.teachengineering.org/collection/duk\\_/activities/duk\\_rollercoaster\\_music\\_act/duk\\_rollercoaster\\_music\\_act.xml](http://www.teachengineering.org/view_activity.php?url=http://www.teachengineering.org/collection/duk_/activities/duk_rollercoaster_music_act/duk_rollercoaster_music_act.xml)

### **Summary**

- Students build their own model roller coasters using pipe insulation and marbles.
- They analyze the roller coasters using physics principles.
- Examine conversions between kinetic and potential energy.
- Examine frictional effects to design roller coasters that are completely driven by gravity.
- A class competition is held to determine the most innovative and successful roller coasters.

**Engineering Connection** – This activity includes engineering analysis and partial design.

- During the design of their model roller coasters, students encounter many of the issues that actual roller coaster engineers encounter.
- In order to build a working roller coaster, students must recognize the constraints placed on their designs and the design of real roller coasters by the basic laws of physics.
- Their ability to understand and work with these constraints is paramount to the success of their roller coasters.

An example  
student-built marble  
rollercoaster. →



Image source: © 2007 [TeachEngineering.org](http://www.teachengineering.org). Used with permission.

### Pre-Requisite Knowledge

Students need basic prior knowledge about forces, particularly gravity and friction

- Familiarity with kinetic and potential energy.
- Should also know Newton's Second Law of Motion
- Understand basic concepts of motion, such as position, velocity, and acceleration.
- 

### View the "[Physics of Roller Coasters](http://www.teachengineering.org/view_lesson.php?url=collection/duk_/lessons/duk_rollercoaster_music_less/duk_rollercoaster_music_less.xml)" lesson prior to the activity

*Lesson source:* © 2007 [TeachEngineering.org](http://www.teachengineering.org). Used with permission. Original lesson at:

[http://www.teachengineering.org/view\\_lesson.php?url=collection/duk\\_/lessons/duk\\_rollercoaster\\_music\\_less/duk\\_rollercoaster\\_music\\_less.xml](http://www.teachengineering.org/view_lesson.php?url=collection/duk_/lessons/duk_rollercoaster_music_less/duk_rollercoaster_music_less.xml)

### Learning Objectives

After this activity, students should be able to:

- Explain why it is important for an engineer to know how a roller coaster works.
- Explain in physics terms how their roller coaster works.
- Discuss the effects of gravity and friction in the context of their roller coaster designs.
- Use the principle of conservation of energy to explain the layout of roller coasters.
- Identify points in a roller coaster track at which the car has maximum kinetic and potential energy.
- Identify points in a roller coaster track where the car experiences more or less than one g-force.
- Identify points in a roller coaster track where the car accelerates and decelerates.

**Vocabulary/Definitions:** Define the following vocabulary terms:

<b>force</b>	Any push or pull.
<b>gravity</b>	A force that draws any two objects toward one another.
<b>speed</b>	How fast an object moves. Is equal to the distance the object travels by the time it takes.
<b>velocity</b>	A combination of speed and the direction in which an object travels.
<b>critical velocity</b>	The speed needed at the top of a loop for a car to make it through the loop without leaving the track.
<b>acceleration</b>	How quickly an object speeds up, slows down or changes direction. Is equal to change in velocity divided by time.
<b>friction</b>	A force caused by rubbing between two objects.
<b>potential energy</b>	Energy stored by an object, ready to be used. (In this lesson, we use gravitational potential energy, which is directly related to the height of an object and its mass.)
<b>kinetic energy</b>	The energy of an object in motion, which is directly related to its velocity and its mass.
<b>gravitational constant</b>	The acceleration caused by Earth's gravity at sea level. Is equal to $9.81 \text{ m/sec}^2$ ( $32.2 \text{ ft/sec}^2$ ).
<b>g-force</b>	The force exerted on an object by the Earth's gravity at sea level. Also known as gravitational force.

## Materials List

Each group needs:

- 2-meter (6 foot) long foam tube (1/2" pipe insulation) cut in half lengthwise (Usually, one side of the tube is comes perforated, making it easy to use scissors or utility knife to cut through this perforation and the other side of the tube to form two halves, thus, one tube works for two groups.)
- glass marble
- wooden marble
- steel marble
- paper or paper cup
- roll masking tape
- set of markers, crayons or pencils
- blank sheet of paper
- stopwatch
- Roller Coaster Specifications Worksheet
- Suggested Scoring Rubric

## Introduction/Motivation

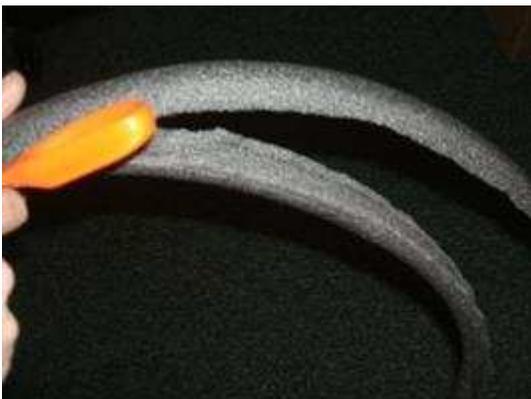
- During today's activity, you are going to design your own roller coasters using foam tubes and marbles.
- Start by drawing your roller coaster on paper before building it.
- Name your roller coaster and make a sign for it.
- (At this point, show students photographs of some real roller coasters to remind them of the possibilities for their own coasters. See examples at <http://www.ultimaterollercoaster.com/coasters/pictures/>.)

## Background Concepts

- The top of the first hill must be the highest point on the roller coaster.
- Cars move fastest at the bottoms of hills and slowest at the tops of hills.
- Friction converts useful energy into heat and must be minimized.
- G-forces greater than 1 occur at the bottoms of hills and g-forces less than 1 occur at the tops of hills.
- Cars must have a certain velocity at the top of loops to avoid falling.

## Before the Activity

- Gather materials and make copies of the worksheet and scoring rubric (for each student or each group).
- Cut each tube in half lengthwise, so each group receives 1 length of tube that is channel-shaped. Use scissors or a utility knife to cut through the perforated side of the tube to form two half tubes. Give each group one of these halves. See the process in the photos below:



Images source: © 2007 [TeachEngineering.org](http://TeachEngineering.org). Used with permission.

## Teacher Information

- Review the TeachEngineering lesson, "[Time for Design](#)," which outlines the engineering design process. Following the design process while building their roller coasters helps students learn exactly how roller coaster engineers solve problems.
- Give each student a copy of the scoring rubric for the class competition.
- Then have groups start designing their roller coasters on paper.
- Look over their drawings to ensure that the proposed designs are physically possible.
- If not, point out those aspects of the roller coaster they may want to rethink and give them time to iterate their designs.
- The glass marble simulates a normal car while the wooden marble and the steel marble represent empty cars and full cars, respectively.
- Students earn points for each type of marble that successfully completes the track and lands in the cup.

## With the Students

- Divide the class into groups of three or four students each.
- Have students draw their roller coasters on paper, name them, and make signs for them. This may take up to 30 minutes.
- Give students the foam tube, masking tape and cup and let them build their roller coasters using classroom materials.
- Expect students to build their first design in 10 minutes or less. Use the cup to catch the marble at track end.
- Give students marbles so they are able to test their roller coasters and make any necessary changes. This is the most time-consuming step and students may need up to 45 minutes to redesign their tracks.
- Hand out a stopwatch to each group and give them time to complete the worksheet, in which they determine certain specifications of their roller coasters.
- Have each group present its roller coaster to the class and use the rubric to help test the roller coasters for the class competition.

## Attachments

- [Roller Coaster Specifications Worksheet \(pdf\)](#)
- [Roller Coaster Specifications Worksheet \(doc\)](#)
- [Suggested Scoring Rubric \(pdf\)](#)
- [Suggested Scoring Rubric \(doc\)](#)

## Safety Issues

- **Make sure students do not swallow or throw the marbles.**
- Slipping on marbles on the floor could be dangerous. Have students immediately pick up any fallen marbles.

## Troubleshooting Tips

If students have difficulty getting their roller coasters to work:

- Make sure that the highest point of the roller coaster is at the beginning.
- Reduce friction by checking that the track is wide enough for the marbles to pass.
- Any track deformation occurring when marbles are rolled down the track results in a loss of energy, so make the roller coaster as stable as possible by taping it to supports (textbooks, walls, desks, chairs, shelves) at several points.

# Assessment

## Activity Embedded Assessment

Check that each group understands how and why its roller coaster works (if it works). If a roller coaster is not working, ask students what they think the problem is. See if they can explain problems such as "It's not high enough" or "The marbles rub too much" in physics terms such as "It doesn't have enough potential energy because it's not high enough," or "The friction between the marble and the track is too great."

## Post-Activity Assessment

- Have each student group complete the [Roller Coaster Specifications Worksheet](#).
- Have students identify some critical points of the roller coaster.
- Have students share other specifications such as height and the number of loops and turns.

## Activity Scaling to Higher/Lower Grade Levels

For higher grade levels:

- Introduce equations for potential and kinetic energy.
- Have students calculate both forms of energy and verify the law of conservation of energy.
- Explore loops along with the concept of critical velocity.
- Find the starting height of a roller coaster necessary to complete a loop of a given height.

For lower grade levels:

- Eliminate much of the physics exploration behind the lesson content.
- Have students build their own roller coasters to discover for themselves many of the concepts that are discussed in detail at higher grade levels.
- Students may be capable of understanding some basic explanations of friction and gravity.

Thank you to [TeachEngineering.org](#) and contributor Duke University for permission to reprint this lesson and activity.

*Physics of Roller Coasters* lesson:

[http://www.teachengineering.org/view\\_lesson.php?url=collection/duk\\_/lessons/duk\\_rollercoaster\\_music\\_less/duk\\_rollercoaster\\_music\\_less.xml](http://www.teachengineering.org/view_lesson.php?url=collection/duk_/lessons/duk_rollercoaster_music_less/duk_rollercoaster_music_less.xml)

*Building Roller Coasters* activity:

[http://www.teachengineering.org/view\\_activity.php?url=http://www.teachengineering.org/collection/duk\\_/activities/duk\\_rollercoaster\\_music\\_act/duk\\_rollercoaster\\_music\\_act.xml](http://www.teachengineering.org/view_activity.php?url=http://www.teachengineering.org/collection/duk_/activities/duk_rollercoaster_music_act/duk_rollercoaster_music_act.xml)

>>> Credit to and thank you to Engineering K-Ph.D. Program, Pratt School of Engineering, Duke University for the above content.

## >> Additional Resources:

### **Coaster Crafter: Build. Ride. Scream! and the Real World**

One of the ways that games promote learning and engagement is by being *relevant*. While the coasters in *Coaster Crafter: Build. Ride. Scream!* obviously exist only in the virtual world, they are representations of some things that many students care about greatly in the real world – roller coasters and amusement parks. Here are some resources that can help you both increase the relevance of the STEM content presented in the game and deepen your students' learning.

Plan a visit to a nearby amusement park to experience friction, acceleration, gravity and all the rest of a coaster's charms... with the help of NASA. They offer [this 140+ page guide](#) on planning, preparing and guiding your middle grade students through a fun-and-fact-filled trip to the amusement park.

Have students visit "[Roller Coasters: Inventing the Scream Machine](#)" to learn more about the design and the history of roller coasters. Ask students to consider the ways coasters have been designed and built over time. *What kinds of resources were available? What kinds of technology? Why could today's roller coasters only be built today? What might coasters be like in the future?*

And here are some more sites to help you extend your students' learning:

- This [How Stuff Works site](#) covers everything about coasters – from physics to components to history. They even give tips for first-time riders.

[Discovery Channel's Building the ultimate - Rollercoaster \(NL subs .▶ 23:31](#)  
Sep 28, 2012 - Uploaded by Vdaraentertainment

The latest in *roller coaster* engineering and technology....  
[More videos for Building the Ultimate Roller Coaster »](#)

[Building the Best Roller Coaster - Glencoe](#)  
[www.glencoe.com/sites/common\\_assets/.../ca\\_alg1\\_unit4\\_student.html](http://www.glencoe.com/sites/common_assets/.../ca_alg1_unit4_student.html)

Unit 4 WebQuest - Internet Project. *Building the Best Roller Coaster*. Introduction | Task | Process | Guidance | Conclusion | Questions. Introduction Each year ...

Coaster Images- [Images for Building the Ultimate Roller Coaster](#)

[Building the ultimate roller coaster - Vicphysics](#)  
[www.vicphysics.org/documents/events/coaster.doc](http://www.vicphysics.org/documents/events/coaster.doc)

*Roller coaster*. The *roller coaster* originated in Russia over 400 years ago, they built wooden slides covered with ice and people would slide down them on small ..

>>> Credit to and thank you to Engineering K-Ph.D. Program, Pratt School of Engineering, Duke University for the above content.

## **Reflection Assignment:**

**What did I learn:**

**What mistakes did I make?**

**What did I learn from my mistakes?**

**What would I do differently?**

**How can I apply what I learned to our project?**

# Chapter 17. Engineering/Research

## The People Behind the Park

(Information in this chapter provided courtesy of Steve Alcorn web site and his 2 books)

### 7 Search Engines you never heard of

A-pg 236

**Engineering** - The People Behind the Park

pg 239

**Who Makes Your Theme Park? : Meet The Engineers Types of Engineers**

pg 239

Real World Resources

pg 243

41. Image below: : *ObamaPacman* <http://bamapacman.com> JPEG File



**Investigating to build foundation knowledge** about Disney theme park attractions, rides and coasters. Students explore who the individuals are that design, build and operate the Theme Parks.

**Expanding knowledge** of Disney theme park attractions, rides and coaster design from investigations. Students engage in mini architect (math), engineer (science), public relations (language arts), and researcher (social studies) tasks that prepare them for the group design challenge in Phase Five.

**ASSIGNMENT:** One class period is devoted to exploring and searching for information about individuals that design, build and operate the "Theme Parks."

## Engineering - The People Behind the Park

You will use any or all of the search engines that are introduced on pages 199.

Search the items on page 200-204 and understand who the engineers are and what they do.

Look over the list of the individuals that design, build and operate the "Theme Parks."

Have a class discussion with the "Directors" of each group leading the discussion. The following 4 (four) pages of information require a one sentence description in SIMPLE terms/language that describe the job function. Let the students direct and decide how to solve the problem.

If you time is limited-search for the following using the 7 search engines:

Imagineer - Mickey 10 Commandments - Ride Control Engineers

Show Control Engineers - Computers vs. PLCs



7 Search Engines you never heard of

**INSTRAGROK**

<http://www.instagrok.com/>



| [blekko](#)

615 - eBizMBA Rank | 9,000,000 - Estimated Unique Monthly Visitors | [499](#) - Compete Rank | [631](#) - Quantcast Rank | [715](#) - Alexa Rank.

Most Popular Search Engines |



| [Lycos](#)

1,094 - eBizMBA Rank | 4,300,000 - Estimated Unique Monthly Visitors | [837](#) - Compete Rank | [347](#) - Quantcast Rank | [2,097](#) - Alexa Rank.

Most Popular Search Engines |



| [Dogpile](#)

1,707 - eBizMBA Rank | 2,900,000 - Estimated Unique Monthly Visitors | [700](#) - Compete Rank | [876](#) - Quantcast Rank | [3,545](#) - Alexa Rank.

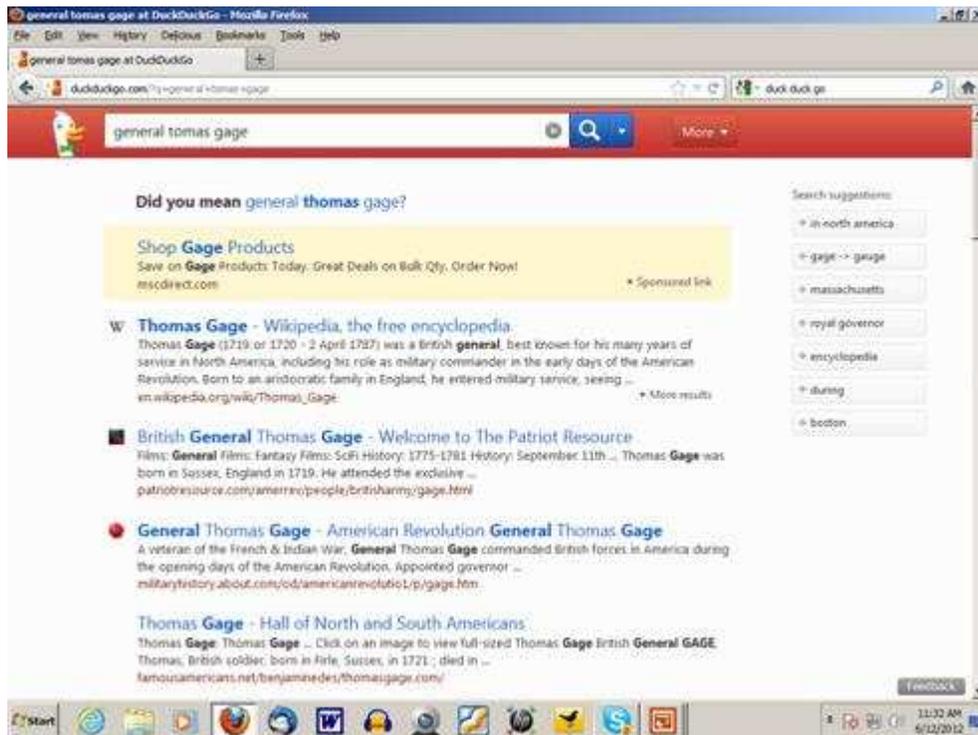
Most Popular Search Engines |



| [Info](#)

1,980 - eBizMBA Rank | 2,600,000 - Estimated Unique Monthly Visitors | [371](#) - Compete Rank | [286](#) - Quantcast Rank | [5,283](#) - Alexa Rank.

Most Popular Search Engines |



## **Engineering - The People Behind the Park**

(Following Information/data provided courtesy of **Steve Alcorn** web site/on-line class-**Theme Park Design Workshop**-(C) 2009 Steve Alcorn and his two books)

This lesson is about people. People are a theme park's most important asset. It takes people to create a theme park; that's what this class is about.

But it also takes people to operate a theme park: to run the rides, keep them working, keep it clean, and keep it stocked with interesting merchandise and palatable food. As theme park engineers, we need to design our park with these people in mind. In a sense, they are our customers. If they can't run their park efficiently, we haven't done our jobs right.

Of course, there's an even more important group of people: our guests. Everything we put into our theme park needs to be designed with them in mind. Our theme park must lure them in, and keep them coming back, or there will be no one to pay the bills!

This lesson looks at each of these groups of people. By understanding each of them we will be able to design a better park.

### **Who Operates The Parks**

Operations

Maintenance

Food Service

Merchandising

Management

### **Who Makes Your Theme Park?**

Creative People

Technical People

## **Meet The Engineers Types of Engineers**

Mechanical Engineers

Architectural Engineers

Structural and Civil Engineers

Ride Control Engineers

Show Control Engineers

Audio/Video Engineers

Lighting Designers

Special Effects Designers

(Above Information/data provided courtesy of Steve Alcorn web site/on-line class-**Theme Park Design Workshop-**  
(C) 2009 Steve Alcorn and his two books)

## **Who's The Boss?**

Systems Engineers

Project Engineers

# **The Show Control Engineer- Types of Show Control**

Real Time Show Control

Scripted Show Control

## **You Want Me to Control What?**

People Counters

Countdown Clocks

Synchronization

Special Effects

Pumps

## **The Ride Control Engineer**

All Things That Move

Vehicles

Synchronization

Safety

Computers vs. PLCs

PLCs (Programmable Logic Controllers)

Redundancy

Single and Multiple Point Failures

Cycle Testing

Break Beams

Video Surveillance

Murphy's Law

## **Monitoring, Safety and Maintenance**

Monitoring

Pressure Mats

Things That Go Boom

Design for Maintenance

## **A/V Engineer**

"Pink" Noise

Super Black and Retrograde Technology

## **Audio**

Audio Sources

Amplification

Speakers and PA

## **Video**

Video Sources

Video Monitoring

Displays

Projection

## Lighting and Effects

Lighting

Special Effects

## Nuts and Bolts

Mechanical Engineering

Systems Engineering

## Details, Details

Planning & Scheduling

Safety and ADA Compliance

Technical Writing

Finance

(Above Information/data provided courtesy of Steve Alcorn web site/on-line class-**Theme Park Design Workshop-**  
(C) 2009 Steve Alcorn and his two books)

## Real World Resources - Explore these sites if you have time-

(Following Information/data provided courtesy of Steve Alcorn web site/on-line class-**Theme Park Design Workshop-**  
(C) 2009 Steve Alcorn and his two books)

Real World Resource <http://www.iaapa.org/>

Real World Resource:Wire from a UK supplier <http://www.elwirecraft.co.uk/questions-about-el-wire/>

Real World Resource: TEA site [www.teaconnect.org](http://www.teaconnect.org)

Real World Resource: <http://www.yesterland.com/>

Real World Resource: <http://www.landmarkusa.com/landmark/Home.html>

Real World Resource: <http://www.alcorn.com/>

Real World Resource: Screamscape <http://www.screamscape.com/>

Real World Resource: <http://entertainmentengineering.com/>

Real World Resource: EdwardsTechnologies <http://www.edwardstechnologies.com/>

Real World Resource: DAFE <http://www.dafe.org/>

Real World Resource <http://www.thrillnetwork.com/>

Real World Resource: Electrosonic <http://www.electrosonic.com/>

Real World Resource: Technifex <http://www.technifex.com/>

Real World Resource: Birket Engineering <http://portal.birket.com/>

Real World Resource: BRC Imagination Arts <http://brcweb.com/>

Real World Resource: Amusement Today  
<http://www.amusementtoday.com/>

Real World Resource: Theme Park Career Center

[The Walt Disney Company Home | Jobs and Careers](#)

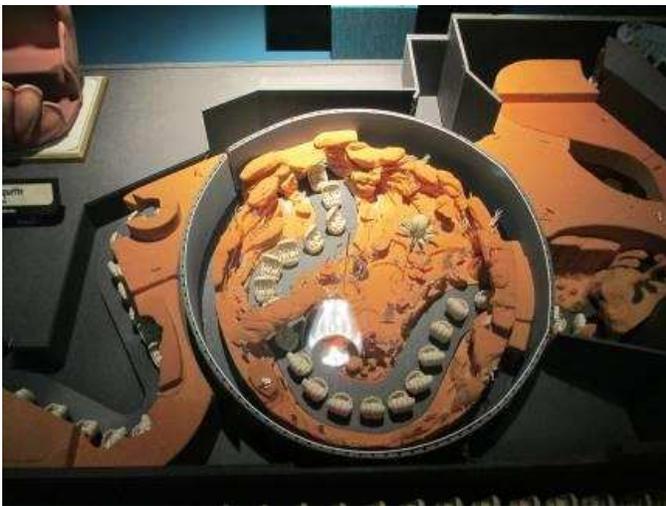
<http://disneycareers.com/en/default/>

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Chapter 18.

# Design-Models-Quick Build

Ride Vehicles - Types - What type fits your attraction?	pg 247
Models -Quick Build - Parts-Tools- Quick Make-wire & cable sticks	pg 251
Quick Build - Parts - Pipe Cleaners	pg 252
Quick Build - Sample Models -Quick Build - Paper	pg 253
Quick Build - Sample Models -Quick Build - Clay and Styrofoam	pg 254
Sample Coaster Build Projects	pg 255
Samples for "Disney Imagineering" model for "Blue Sky"	pg 255
>> Architect - <i>Models - Mock-ups</i>	pg 256

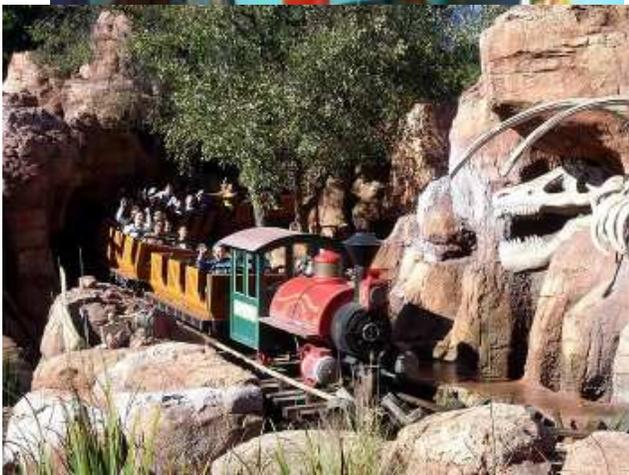


<sup>11</sup>. Images above- Disney World. Personal photograph by Howie DiBlasi. 1-25-2011

**Applying knowledge** - Students engage in preparation activities that set the stage for the learning ahead. [Mini-experiences in each of job roles](#) Mini-Engineer Experience-Students test design ideas using online simulations

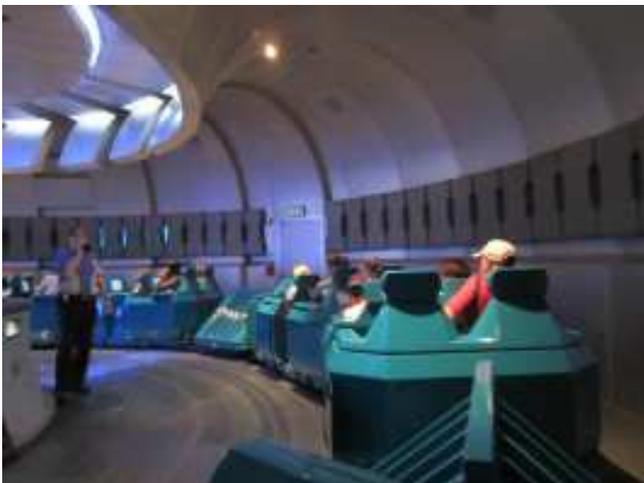
**Expanding knowledge** - In the design and construction of Disney theme park attractions, rides and coaster models are created. A PAPER model with wire wrap (pipe cleaners) will be created by each team. Development will begin on the public relations/presentation model. Images below display various types of wire to use to form your attraction guide wire or coaster layout. Staples are to attach and hold down the wire to the base

**What type of ride vehicle will be in your attraction?**



**What type of ride vehicle will be in your attraction?**

Sketch your ideas here:

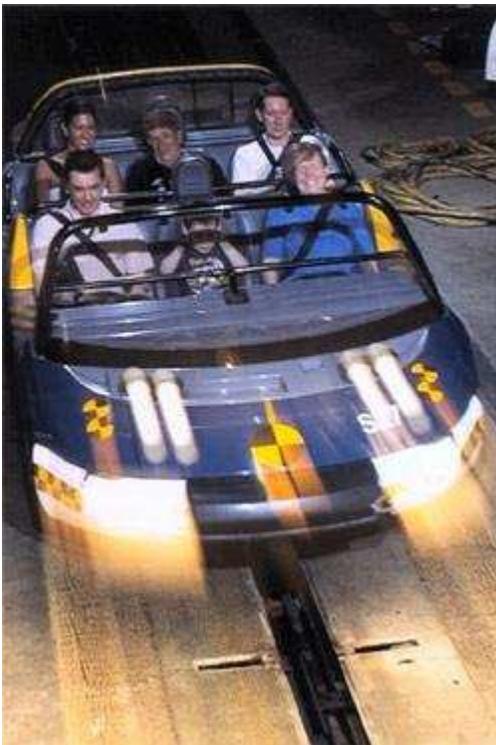


**What type of ride vehicle will be**

in your attraction?



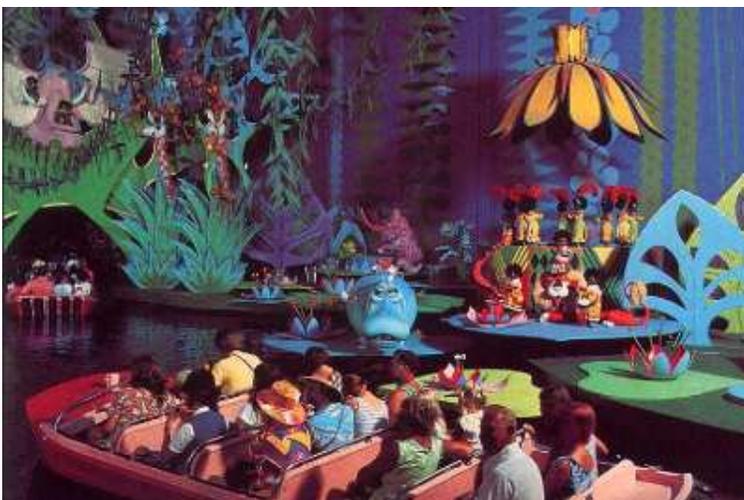
Notes and sketch your ideas here:



What type of ride vehicle will be in your attraction?

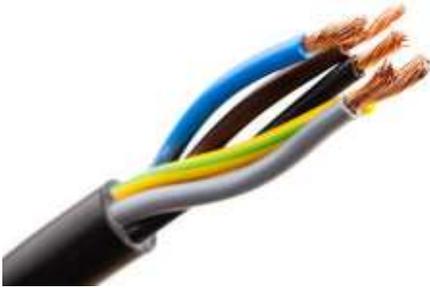


Sketch your ideas here:



cable sticks

Models-Coaster-Ride - Parts-  
Tools- Quick Make-wire &



## Cable TV Staples to connect to wires together to make coaster rails

<sup>44</sup>. Images this page: IDEAL INDUSTRIES, INC. Cable Staples [www.idealindustries.com](http://www.idealindustries.com) JPEG Image

**Select the type of material you would like for your model to be made of.** Clay, metal, some people even make them out of Popsicle sticks and toothpicks! Create a list of all the materials

which you selected in the previous step, and purchase them. These can be found in most arts and crafts stores.

## Craft Sticks

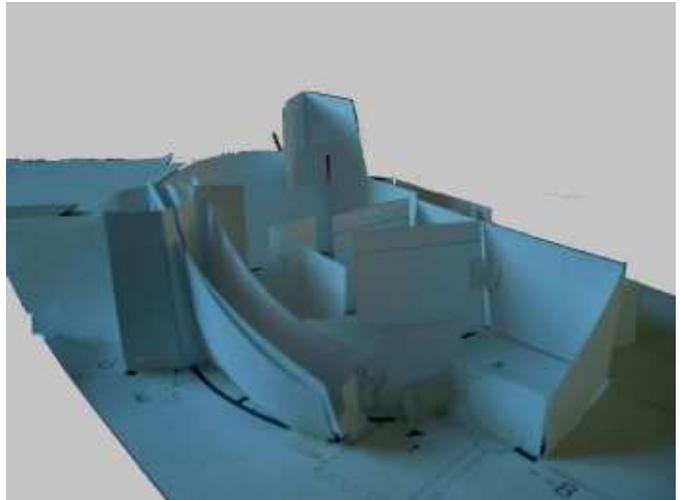


## Pipe Cleaners



<sup>40</sup>. Images this page: Craft Tools-Craft Stick Critters| Disney Family.[family.go.com](http://family.go.com) JPEG Image

## Models - Quick Build - Paper



## Magical Castle - Small World Paper Models



19. All images this page: intercot. WDW images. [www.intercot.com](http://www.intercot.com) JPEG file

11. Images below- Disney World. Personal photograph by Howie DiBlasi. 1-25-2011

## Models-Quick Build - Clay



## Quick Build - Styrofoam



## Mine Train Thru Nature Wonderland



<http://nwrr.blogspot.com/>

## Samples for "Disney Imagineering" model for "Blue Sky"



Sample coaster rails using staples to connect



Sample coaster design using PVC pipe and rails

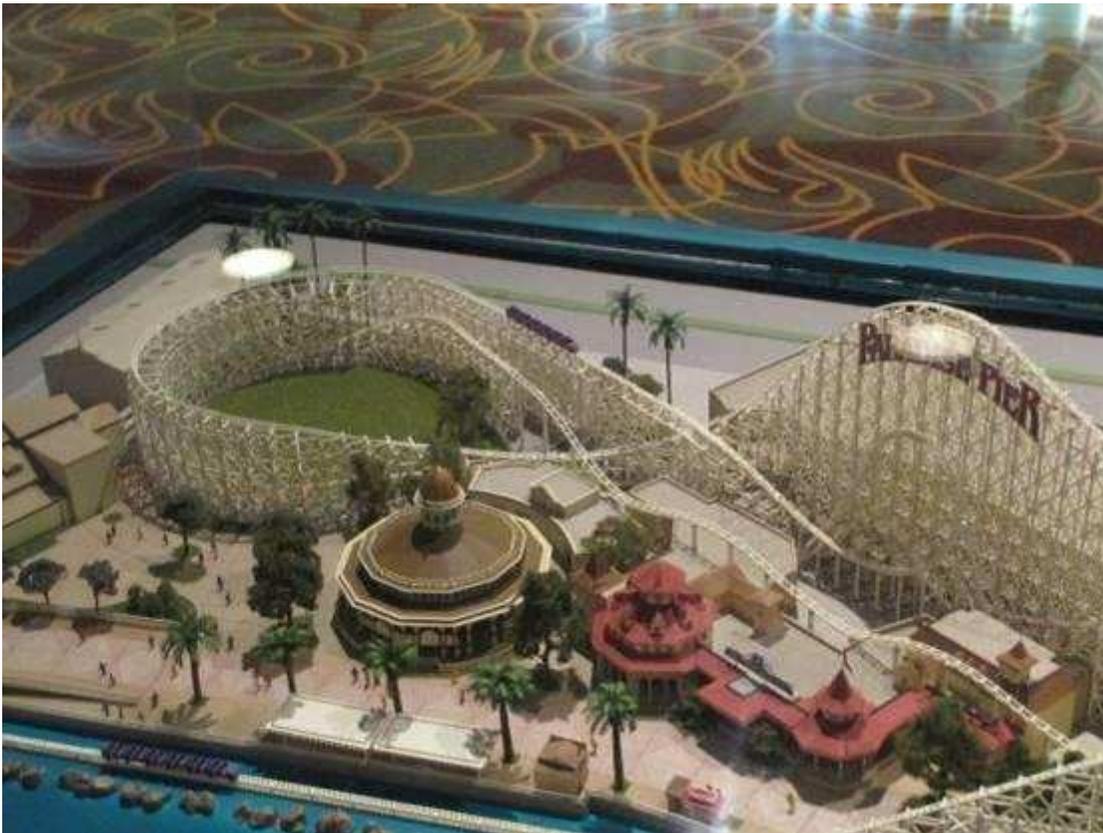


Gorilla Glue Cardboard Contest Winners

<http://www.instructables.com/id/Gorilla-Glue-Cardboard-Contest-Winners/>

# Samples for "Disney Imagineering" model for "Blue Sky"

<sup>11</sup> Images below- Disney World. Personal photograph by Howie DiBlasi. 1-25-2011

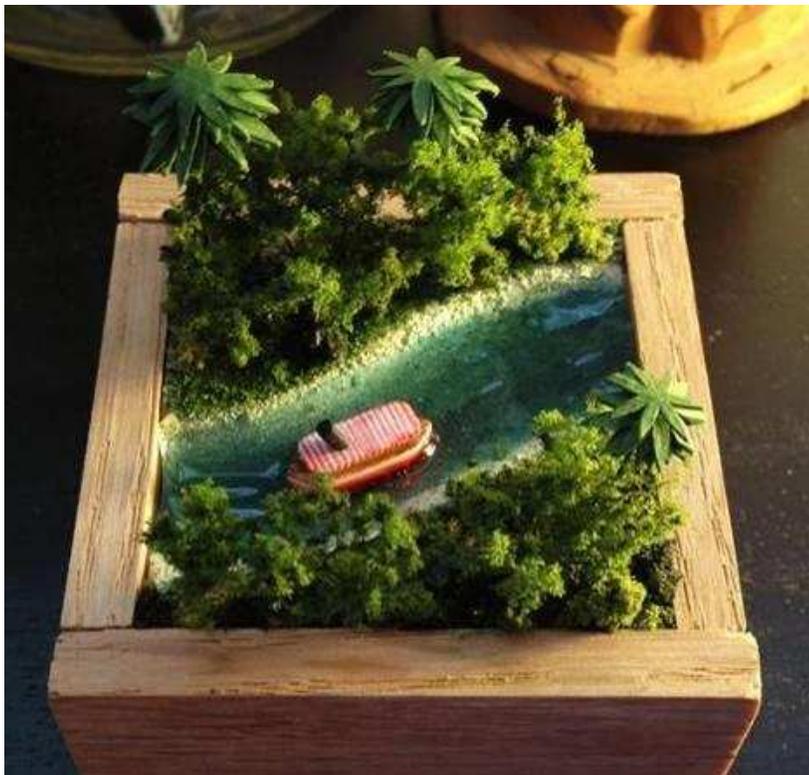


<sup>11</sup> Images above and left- Disney World. Personal photograph by Howie DiBlasi. 1-25-2011



Cars Land- Disney California Adventure (above)

>> Architect - Models - Mock-ups



-Tools-Model-Scale-  
Software- Application –  
Design Tools  
[Scale Models -  
Imagineering Disney -](#)

– The Imagineering *Disney* Blog  
... *Disney* Fun Fact of the Day ....  
collection of Sam's behind-the-  
scenes photos of the *model-*  
*making* process.

After having such a great time  
making a [tiny Jungle Cruise  
model](#), I decided to make a tiny  
model of a couple of other  
favorite attractions.

<http://www.imagineeringdisney.com/blog/tag/scale-models>

12. Disney World. Personal photograph by Howie DiBlasi. 4-28-2012



## Disneyland Scale Models

14. Disney World. Personal photograph  
by Howie DiBlasi. 10-17-2012

<http://www.imagineeringdisney.com/blog/2009/11/1/2-fantastic-disneyland-scale-models.html>



More incredible additions to Sam Towler's stunning scale model of Disneyland's extinct Mine Train Thru Nature's Wonderland.

## Mine Train Model Thru Nature Wonderland



14. Disney World. Personal photograph by Howie DiBlasi. 10-17-2012

## Disney World Fantasy Land - 2013



14. Disney World. Personal photograph by Howie DiBlasi. 10-17-2012

## Original concept model - "Splash Mountain"

# Chapter 19.

## Dreaming Walt Disney Style

Dreaming Walt Disney Style

pg 261

**Model Construction- Which one will I use?**

**A-pg 262**

**Presentation - Create A Draft of the public relations/presentation model**

**A-pg 263**



Photo credit to: [www.dlptownsquare.com](http://www.dlptownsquare.com) La Place de Rémy

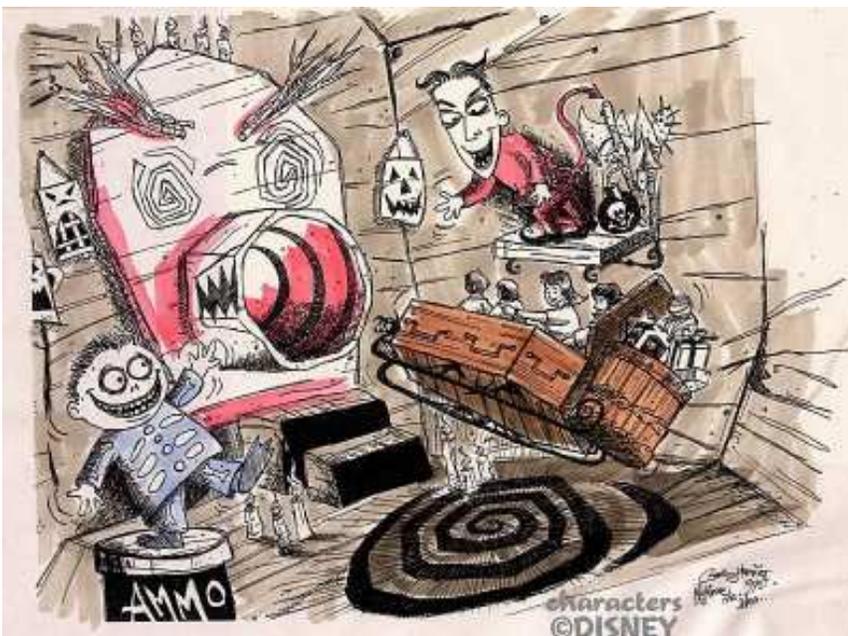


Photo credit to: World That Never Was: Nightmare Before Christmas| [modernmouseradio.com](http://modernmouseradio.com)

## Dreaming Walt Disney style

### Petaluma High School graduates place second in Walt Disney's 19th annual Imaginations competition

<http://www.petaluma360.com/article/20100708/COMMUNITY/100709581>

From the time he was 2, Petaluman Kyle Gee dreamed of one day becoming a Walt Disney Imagineer. This summer, his dream got one step closer to becoming reality.

Gee and fellow Petaluma High School graduate Imogene Chayes came in second place in Walt Disney Imagineering's 19th annual Imaginations Competition.

The competition is designed to encourage college students to consider careers in creative and technical fields, including digital arts, engineering and architecture. Participants design a theme-park attraction, new experience, restaurant, hotel or theme park land.



Gee and Chayes' entry, "Elephant Graveyard Escape," was designed for the Africa section of Disney's "Animal Kingdom."

Carnegie Mellon University's team of finalists in Walt Disney Imagineering's 19th Imaginations Competition are from left, Cassie Li, Imogene Chayes, Tema Yaravitz and Kyle Gee.  
Walt Disney Imagineering

By [Yovanna Bieberich](#)

ARGUS-COURIER STAFF



"I heard Kyle was entering the contest and he knew I could do the artwork, so he asked me to help him out," said Chayes, a costume design major and recent graduate of the Fashion Institute of Design and Merchandising in Southern California.

"Since high school, I have been checking into what kinds of jobs were available at Disney and I stumbled on the link to the Imaginations Competition," said Gee, an engineering major at Carnegie Mellon University in Pennsylvania. "At the time,

the guidelines said you could be an artist or theater arts or architecture major, but not an engineering major, which was what I planned to be. I kept checking back and eventually the requirements changed to include engineering majors. I decided I wanted to do it and gathered a team together."

**>> Watch the Video->>>Arch Model Walk Thru** - Radiator Springs  
Kathy Mangum discusses Radiator Springs at What's New/What's Next presentation at Disneyland Resort <http://www.youtube.com/watch?v=qExNR6Fh-Co>

## Model Construction- Which one will I use?

Virtual :

3D- Sketch-up model -

Physical:

Wire shape

Foam

Paper

Craft

FOAM Pipe insulation

Other \_\_\_\_\_

# Draft-Plan For The Final Presentation

(will include the following):

**Team Name** \_\_\_\_\_

Members names on the team

**Assignment presentation for each member of the team**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

**The "Driving Question" is: SAMPLE:** How can we design a new "Disney Theme Park Attraction" that will be: Engaging; Exciting; and that will increase park attendance and revenue and will involve the STEAM concept.

**The "Driving Question" is:** \_\_\_\_\_

**Name of the attraction:**

**What Disney Park" will the attraction be in? Why?**

Magic Kingdom

Animal Kingdom -

Hollywood Studios -

EPCOT

**What "Land: of the park does the attraction/ride fit in? Why?**

**Designed for an audience of**

Kids ages 2-5

Kids ages 6-10

Teens

Adults

Senior citizens

All

**Attraction is classified as a :**

Thrill Coaster

Edutainment

Show Entertainment

Adventure

Sit down

**What type of ride/attraction is it?**

- |                                  |               |                 |
|----------------------------------|---------------|-----------------|
| A. Gravity rides                 | B. Boat rides | C. Simulators   |
| D. Guide Rail / Track            | E. Dark rides | F. Carney rides |
| G. Walk through/Sit Down/Theatre | H. You drive  |                 |

**One or two sentence to describe your attraction**

**Story and "Theme" - Tell me the rough outline story**

**Back story of the attraction**

**Story behind the queue**

**What is the " Storytelling " DETAILS -piece of the "Themed" attraction?**

**Describe the basic 'Flow' of the attraction from start to finish**

**What is your "Weenie"?**

**Weenie-**Your Weenie" Walt Disney said: " *What you need is a weenie, which says to people 'come this way.' People won't go down a long corridor unless there's something promising at the end. You have to have something the beckons them to 'walk this way.'*"

**How do the guests enter the attraction?**

**Do you have an "Interactive Queues" in a your attraction? What is it?**

**Describe your Interactive queue if you have one**

**One sentence open line in the attraction guide**

**One sentence closing line in the attraction guide**

**Four paragraphs that describe the attraction in detail**

**How did you "PLUS" the attraction?**

**Audio/Music/Sound for the presentation**

**How will you use and what role does "Animatronics" play?**

**Research** on the patent that applies

**Technical report** highlighting specific features of the ride

**Artistic rendition** of the ride

**Sketches / Drawings / Model renderings**

**3-D Drawing of the attraction**

**Optional:** (Depending on time frame used) A blueprint and Marquette (a small [model](#) ) three dimensions for either a sculptural or an architectural project. (to scale) of your group's attraction and design

**Blueprint and/or Marquette**

**PR/magazine flyer** that will market your attraction/ride to the general public

One 8 x 10 Graphic Flyer - used to attract the guests to your NEW attraction- PR/magazine that will market your attraction/ride to the general public.

- must include 3-D drawing of the attraction
- one sentence open line in the attraction
- one sentence closing line in the attraction guide
- four paragraphs that describe the attraction in detail

**Persuasive techniques that “sell” your design to the committee/authentic audience.**

**Describe how STEAM-Science; Technology; Engineering; Art; Math are included and implemented in the project.**

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# Chapter 20.

## Assessments - Public Relations-Presentations

Multiple Types of Assessment in PBL	pg 269
Performance Assessment	pg 270
27 Assessment Using Rubrics	pg 271
<b>Guiding Reflection Before/During/After</b>	<b>A-pg 272</b>
Presentation of Knowledge and Ideas	pg 272
The Ongoing Challenges of Assessment	pg 273
Summative Assessments	pg 274
5 tips for presenting project learning to a 'public audience'	pg 274
<b>TED Talks Suggestions-Make an outline and script</b>	<b>A-pg 276</b>
<b>The presentation must include the following...</b>	<b>A-pg 278</b>
<b>Presentation Check list &amp; Notes</b>	<b>A-pg 279</b>
SAMPLE Presentation Docs-Ultimate Attraction Guide	pg 280

**THIS ?**



or **THIS?**

## Multiple Types of Assessment in PBL

With multiple purposes for problem-based learning, it is important to *consider a variety of types of assessment* opportunities.

### ▶ Written Examinations

Traditional written examinations can be conducted either as closed-book or open-book examinations. Questions should be designed to ensure transference of skills to similar problems or subject domains ([Ritchie, 1996](#)).

### ▶ Concept Maps

Much of the learning that goes on during problem based learning is more than just a compilation of facts. As such, written examinations may not be an adequate measure of student growth. Requiring students to generate concept maps, in which they depict their knowledge through the creation of identified nodes and links, may present another option to determine their cognitive growth ([Ritchie, 1996](#)).

### ▶ Peer Assessment

Because life outside the classroom usually requires working with others, peer assessment is a viable option to measure student growth. Providing students with an evaluation rubric often helps guide the peer evaluation process. This process also emphasizes the cooperative nature of the PBL environment ([Ritchie, 1996](#)).

### ▶ Self Assessment

An important element of problem based learning is to help students identify gaps in their knowledge base in order for more meaningful learning to result. Self-assessment allows students to *think more carefully* about what they know, what they do not know, and what they need to know to accomplish certain tasks ([Ritchie, 1996](#)).

The goal of assessment in problem-based learning is for students to understand the goals of the lesson and eventually be able to assess their own work. This type of self-assessment and the formative assessment allows the teacher to get feedback from which he can modify his instruction. Formative assessment is a must for problem- and project-based learning. Students must be given opportunities to participate reflective self-assessment and given a chance to make revisions based on the assessment ([Torp & Sage, 1998](#)).

The tutor must stimulate the self-monitoring process by asking questions such as "Is there something more you need to know at this point?" and "Are you certain of what you are saying or do you feel as though this is something you ought to review?" ([Williams, 1992](#))

### ▶ Facilitator/Tutor Assessment

The feedback provided by tutors should encourage the students to explore different ideas. It is important that facilitators *not dominate* the group--they should *facilitate* learning and exploration. Assessment should include comments about the individual's interaction with her group and her cognitive growth ([Ritchie, 1996](#)).

### ▶ Oral Presentations

Because so much of work life revolves around presenting ideas and results to peers, oral presentation in problem-based learning provides students an opportunity to practice their communication skills. Presenting findings to their group, the class, or even a real-life audience can help strengthen these skills ([Ritchie, 1996](#)).

### ▶ Reports

Written communication is another skill important for students. Requiring written reports allows students to practice this form of communication ([Ritchie, 1996](#)).

### ▶ Observation & Dialogue

The teacher is responsible for observing students and obtaining evaluative data about their strengths and areas that need improvement. Occasionally, the teacher should ask students to summarize--individually, or in writing--the connection between a particular hypothesis and the available data without looking at the board. Students should also be evaluated with respect to their problem-solving skills, communication, and interaction with members of the group ([Williams, 1992](#)).

## ▶ Performance Assessment

Performance assessment is focused on students' ability to apply knowledge in ill-defined, ambiguous contexts that demand judgment ([Wiggins, 1993](#)).

- **Performance-based:** Involving a *performance or demonstration*, usually for a real audience and useful purpose;
- **Generative:** Performance assessments have meaning for learner, producing information, a product, or a service;

- **Seamless & Ongoing:** Performance assessment is part of instruction and vice versa; students learn during assessment;
- **Equitable:** Performance assessments are culturally fair.

### ▶ Assessment Using Rubrics

It is important that students know what they'll be expected to do in long-range, and complex projects. Rubrics that describe quality expectations also help challenge students to do their best.

Educators using instructional rubrics assess process, performance, and progress by delineating the various categories associated with assessment tasks and learning activities, the different levels of performance, and the indicators describing each level and then rating student performance that show their learning ([Whittaker, Salend, & Duhaney, 2001](#)).

Instructional rubrics can benefit students by helping them do the following:

- Understand the qualities associated with a specific task or assignment.
- Develop their critical-thinking skills.
- Self-assess their work.

Also, rubrics can help teachers:

- Clarify and communicate their expectations.
- Link assessment and instruction.
- Establish standards of excellence.
- Evaluate and grade their students' work.

Guidelines for Using Rubrics ([Whittaker, Salend, & Duhaney](#))

- Discuss with others how performance is assessed.
- Examine sample assignments to identify exemplary features.
- Make sure the rubric is understandable, feasible, fair, unbiased, credible, and individualized.
- Teach and encourage students to use the rubric Evaluate students' assignments using the rubric.
- Evaluate and revise the rubric.

## Guiding Reflection Before/During/After

*Project-based learning is a compelling instructional approach for engaging students in authentic tasks that connect knowledge and skills across disciplines. The "Disney-PBL Project" is a detailed case study designed for teachers wanting an inside look at the development and implementation of an interdisciplinary project enriched by technology. Students move from learning content-specific knowledge and skills to applying what they learn in a group design task. Ultimately, student teams must convince a theme park to accept their design through persuasive presentations.*

Reflection refers to active, intellectual thinking for monitoring one's own learning activity and process. A "debriefing" with students at the end of a project helps students take what they have learned and transfer it to the next project or assignment.

Use "Reflection" activities to discuss the "Big Idea" and "Driving Question", as well as focus on the process and the outcomes of a project:

- What did we learn?
- Did we collaborate effectively?
- What skills did we learn?
- What skills do we need to practice?
- What was the quality of our work?
- Where can we improve?

These reflective activities can be implemented before, during and after the PBL project.

## Presentation of Knowledge and Ideas -Common Core

- [CCSS.ELA-Literacy.SL.9-10.4](#) Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.
- [CCSS.ELA-Literacy.SL.9-10.5](#) Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
- [CCSS.ELA-Literacy.SL.9-10.6](#) Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grades 9–10 Language standards 1 and 3 [here](#) for specific expectations.)

# The Ongoing Challenges of Assessment

Classroom Guide: Top Ten Tips for Assessing Project-Based Learning

This classroom guide is intended to inspire and expand your thinking about effective assessment for project-based learning.

The tips are organized to follow the arc of a project. First comes planning, then the launch into active learning, and then a culminating presentation. Reflection is the final stage. Download this today and get started!

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What's Inside the PDF?

1. Keep It Real with Authentic Products
2. Don't Overlook Soft Skills
3. Learn from Big Thinkers
4. Use Formative Strategies to Keep Projects on Track
5. Gather Feedback -- Fast
6. Focus on Teamwork
7. Track Progress with Digital Tools
8. Grow Your Audience
9. Do-It-Yourself Professional Development
10. Assess Better Together
11. BONUS TIP: How to Assemble Your PBL Tool Kit

DOWNLOAD Edutopic PDF HERE:

<http://www.edutopia.org/10-tips-assessment-project-based-learning-resource-guide>

## Common Core:

- **1.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.**
- **1.2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.**

## Summative Assessments

A summative assessments will be used at the end of the PBL unit to evaluate students' cumulative learning based on mastery of skills and knowledge outlined in the project rubric.

The audience can also be a panel of parents or community leaders, artists or other teachers in the building. It simply must be people who can give an informed response due to their personal expertise or experience. When studying the growth of cities, the students can design a city and then have city planners come in to listen to their ideas. Bring in members of the town council to listen to ideas about violence and safety. Ask someone from the local museum or waste treatment plant to visit. There are any number of people who could support the work of the students; in many cases, they just need to be asked. Knowing that “real” experts are going to be looking at their work is very powerful for students. It validates their efforts and gives significance to each step of the process.

The audience can also be contacted through email and letters, writing a proposal or an opinion to a lawmaker or town official also provides authenticity to the work. Having done this with students in the past, they are excited about the writing process, but they often do not get personal responses, so if the final product involves a letter, I would also have some sort of forum where each group of students presents their position to an audience to receive more immediate feedback.

Finding the audience is a significant part of the planning for an effective PBL, one that can cause the level of engagement and excitement about the project to greatly increase.

## Following is from:

[Bianca 'Jim' Hewes @BiancaH80](#)

High school English teacher, author, blogger, wife of [@waginski](#)

## 5 tips for presenting project learning to a ‘public audience’

I've probably blogged about this before, but I'm going to do it again because over the last two weeks I've had experiences that remind me of the centrality of an authentic public audience for PBL. Rigorous, effective and meaningful PBL involves a ‘public audience’ according to BIE. It is one of their 8 essentials of PBL:

Students present their work to other people, beyond their classmates and teacher – in person or online. This “ups the stakes,” increasing students’ motivation to do high-quality work, and adds to the authenticity of the project.

Obviously for a very busy high school teacher who is responsible for 6 classes all from different age groups can make finding a public audience a real challenge – it can even seem like a chore! I've noticed that often this is the one element of PBL that is neglected simply because it seems too hard or too ‘high risk’ – students end up just presenting to their class or posting products to

the web. My colleagues often say that I am 'brave' when I plan for my students to share their learning with an audience outside of the school. I think what they really mean is 'crazy'. It can seem completely insane, especially when you are well aware that your students may not have created/designed a product that is impressive in and of itself. Often the product itself does not reflect the process of learning taken to get to that end result. Sometimes teachers are embarrassed that a public audience will judge the students harshly on what they see, or even the students themselves are nervous or embarrassed about sharing their product that they feel doesn't meet their idealised vision of what they planned. BUT this is exactly why we need to have our students share with a public audience. They need to experience that reflection on learning, that self-evaluation of their product and why it does or doesn't meet their expectations. They need to be given the opportunity to explain the learning process involved in designing their product – whatever it may be. They need to learn to publicly value that learning is a process. We need them to step up and take ownership of their ideas, their experiences, their effort and their potential failures. It is through this process of public reflection that students develop the skills needed to be life-long learners.

However, there is something important to remember when planning to share learning with a public audience. Just like in the classroom, a friendly, safe and welcoming culture is important when students present their ideas and work to an audience. We do not want our students working in a hostile and unfriendly learning environment and as such we do not want them presenting in an environment that is threatening or intimidating. It is essential that you create a fun and friendly mood for the presentation of learning. Here's five things you and your students can do to create a great mood for public presentations:

**1. Have students create the invitations.** Make sure that students are directly involved in inviting guests. You can even have students choose who the public audience will be. Students might want to design invitations to send to guests, or they might just want to help you write the email to be sent out.

**2. Have a practice presentation in the space.** If possible, get your students to have a trial run-through of their presentation. Just like adults, young people get nervous in front of an audience and feel better if they have rehearsed. Encourage the use of palm-cards if students are particularly nervous.

**3. Share your favorite bit.** Ask students to choose their very favourite part of their product (such as their favourite stanza from a poem, or paragraph from a story) and get them to share that with the audience. They might even like to share their favourite learning experience such as reading outdoors in the sunshine or editing their video using iMovie.

**4. Create a video.** If a student is particularly nervous about presenting in front of an audience, ease their fears by allowing them to record a voice-over on a slideshow or create a short video sharing their learning with the audience. This is especially helpful for those students who pretend to be 'unreliable' and don't show up at the presentation, when really they are suffering from anxiety that they don't wish to share with others.

**5. Decorate the venue and feed your guests!** Involve your students in creating a part atmosphere for the presentations. Learning shouldn't be boring and serious – it should be fun and engaging! Have students bring in a plate of food, make sure hot and cold drinks are available and even have some balloons or colourful displays around. Make sure that when you introduce yourself and your students that you are jovial and smiling. It really makes a difference!

Hopefully these tips will help you and your students feel more confident and relaxed when sharing their projects with a public audience! My next blog post will outline how I had a super successful final presentation with my Year 9 class, even though I expected it to be awful!

## **TED Talks Suggestions- Make an outline and script**

### What is the best structure for a talk?

There are many theories on the best structure for a great presentation. ([Nancy Duarte presents one here.](#)) There's no single trick to it, but here is at least one structure that we've found to work particularly well:

1. Start by making your audience care, using a relatable example or an intriguing idea.
2. Explain your idea clearly and with conviction.
3. Describe your evidence and how and why your idea could be implemented.
4. End by addressing how your idea could affect your audience if they were to accept it.

Whatever structure you decide on, remember:

1. The primary goal of your talk is to communicate an idea effectively, not to tell a story or to evoke emotions. These are tools, not an end in themselves.
2. Your structure should be invisible to the audience. In other words, don't talk about how you're going to talk about your topic - just talk about it!

### *Introduction*

A strong introduction is crucial.

- Draw in your audience members with something they care about.
  - If it's a topic the general TED audience thinks about a lot, start with a clear statement of what the idea is.
  - If it's a field they never think about, start off by invoking something they do think about a lot and relate that concept to your idea.
  - If the idea is something fun, but not something the audience would ever think about, open with a surprising and cool fact or declaration of relevance (not a statistic!).
  - If it's a heavy topic, find an understated and frank way to get off the ground; don't force people to feel emotional.
- Get your idea out as quickly as possible.
- Don't focus too much on yourself.

- Don't open with a string of stats.

### *Body*

In presenting your topic and evidence:

- Make a list of all the evidence you want to use: Think about items that your audience already knows about and the things you'll need to convince them of.
  - Order all of the items in your list based on what a person needs to know before they can understand the next point, and from least to most exciting. Now cut out everything you possibly can without losing the integrity of your argument. You will most likely need to cut things that you think are important.
    - Consider making this list with a trusted friend, someone who isn't an expert in your field.
- Spend more time on new information: If your audience needs to be reminded of old or common information, be brief.
- Use empirical evidence, and limit anecdotal evidence.
- Don't use too much jargon, or explain new terminology.
- (Respectfully) address any controversies in your claims, including legitimate counter-arguments, reasons you might be wrong, or doubts your audience might have about your idea.
- Don't let citations interrupt the flow of your explanation: Save them for after you've made your point, or place them in the fine print of your slides.
- Slides: Note anything in your outline that is best expressed visually and plan accordingly in your script. See **Step 4**.

### *Conclusion*

- Find a landing point in your conclusion that will leave your audience feeling positive toward you and your idea's chances for success. Don't use your conclusion to simply summarize what you've already said; tell your audience how your idea might affect their lives if it's implemented.
- Avoid ending with a pitch (such as soliciting funds, showing a book cover, using corporate logos).
- If appropriate, give your audience a call to action.

### *Script*

Once you're settled on your outline, start writing a script. Be concise, but write in a way that feels natural to you. Use present tense and strong, interesting verbs.

# The presentation must include the following:

➤ NAME your team

**What "Land: of the park does the attraction/ride fit in? Why?**

Magic Kingdom - Animal Kingdom - Hollywood Studios - EPCOT

**What type of ride/attraction is it?**

A. Gravity rides                      B. Boat rides                      C. Simulators  
D. Guide Rail / Track                E. Dark rides                      F. Carney rides  
G. Walk through/Sit Down/Theatre   H. You drive

**Designed for an audience of**

Kids ages 2-5                      Kids ages 6-10                      Teens  
Adults                              Senior citizens                      All

**Attraction is classified as a :**

Thrill                      Coaster                      Edutainment                      Sit down                      Show

**One or two sentence to describe your attraction**

**Story and "Theme"**

**What is the " Storytelling " piece of the "Themed" attraction?**

**Do you have an "Interactive Queues" in a your attraction? What is it?**

**Describe the basic 'Flow' of the attraction from start to finish**

**Weenie-**Your Weenie" Walt Disney said: " *What you need is a weenie, which says to people 'come this way.' People won't go down a long corridor unless there's something promising at the end. You have to have something the beckons them to 'walk this way.'*"

**Blueprint and/or Marquette**

(a small model or study in three dimensions for either a sculptural or an architectural project. (to scale) of your group's attraction and design

**Research** on the patent that applies

**Artistic rendition** of the ride

How will you use and what role does "**Animatronics**" play?

How you are "**Plusing**" the attraction

**Technical report** highlighting specific features of the ride

**PR/magazine flyer** that will market your attraction/ride to the general public

Persuasive techniques that "sell" your design to the committee/authentic audience.

**APPENDIX A: One/Two week lesson plan**  
**Imagineering Classrooms\*** R2.32  
S.T.E.M - S.T.E.A.M - P.B.L. - I.B.L.

\* >>> One or Two Week Lesson Plan IE. Five hours - Ten hours

## 1. Introduction to class:

Strategies to accomplish our goal- What is our goal?

**How do we, as new "Disney Imagineers" design a safe, exciting, themed attraction with an interactive "Queue" to increase attendance and "Theme Park" revenue.**



"We make the magic." That's our motto at Walt Disney Imagineering, and it's a belief that permeates everything we do. From castles, mountains and mansions to fireworks spectacles, Imagineers are the creative force behind the iconic Disney attractions and experiences that our guests have come to know and love. We combine our rich storytelling legacy with the latest technology to breathe life into beloved Disney stories and characters in our theme parks, resorts, cruise ships and other Walt Disney Parks and Resorts experiences around the world. With one foot in the present and another in the future, Imagineers continue to push the boundaries of creativity, innovation and possibility as we create new experiences and new forms of entertainment for our guests of today, tomorrow and beyond.

**PLAY Disney VIDEO:** <http://wdi.disneycareers.com/en/default/>

**You Tube** [https://www.youtube.com/watch?v=MAE\\_OgMrkaQ](https://www.youtube.com/watch?v=MAE_OgMrkaQ)

# TOPICS

1. Introduction to class.
2. Norms
3. Define-Discussion
4. Does the PBL Project . . . ?
5. Know the Difference Between PBL and Projects
6. PBL: Project "Balanced" Learning
7. Five stages of Knowledge
8. Requirements: Disney Theme Park Attraction Design Team Tasks
9. Making of a Disney Themed Attraction
10. STEM teacher Donna Migdol
11. Pre-Assessment - What do I know - What do I not Know?
12. Skills Database
13. Creative Project Managers
14. HR Department - Hire the Imagineers
15. Organizing a Team
16. Final Assessment – Presentation: Requirements
17. Scoring Rubric for Oral Presentations
18. Interactive Assignment: What can we learn from the past?
19. Solutions and Statements
- 20. Building FOUNDATIONAL Knowledge**
21. Investigating to build foundation knowledge - Type of Attractions
22. Special Effects: Audio-Video-Music-Lighting
23. Blue Sky
24. Assignment: I think we should...Design a attraction that would.....
25. Exploring Communication-Collaboration-Web Tools

26. Mickey's Ten Commandments: Expanding Knowledge
27. Assignment- Explore Parks and Maps
28. Storytelling
29. "Creating the Story"
30. Disney - Ultimate Attraction Guide
31. Create the three critical pieces of you "Themed Attraction"
32. Describe the basic 'Flow" of the attraction from start to finish
33. Exploring Web Tools -Sketch Software: [Sketchpad](#)
34. A Pirate's Life for You
35. Craft a story line for your attraction. One paragraph - three sentence maximum.
36. Develop Your "PITCH"
37. Exploring Web Tools - Storyboard Software
38. Exploring Web Tools - Google Draw
39. Images for Story and Storyboards
40. "Weinie"
41. Queue - Interactive: What are interactive queues?
42. Assignment: Poster Attraction Design: Telling Our Story Visually
43. Testing and Experiments: Laying the Groundwork
44. Patent search-Research
45. Exploring Web Tools - Slide Show Creator - Presentation Tools
46. Check List: 5 Minute Presentation Check list & Notes
47. Concept Art
48. Web 2.0 Drawing Tools for Every Level
49. Design-Models-Quick Build
50. Rubric
51. How will we do our pitch?
52. Showtime

## 2. Norms

- Think Different
- Relevant and collaborative conversations- Stay on task
- Comments brief and to the point
- Professional and respectful to one another
- Follow time schedule
- Provide a diverse set of ideas and problem-solving approaches
- All participants have a relevant voice
- Thinking is solution driven
- Open minded discussion, and everyone provides input

## 3. Define-Discussion

1. What Is S.T.E.M - S.T.E.A.M - P.B.L. - I.B.L.
2. What is MakerSpace
3. Stages of PBL
4. STEM in the classroom
5. What PBL is NOT
6. Why PBL and STEM

## 4. Does the PBL Project . . . ?

- FOCUS ON SIGNIFICANT CONTENT
- DEVELOP 21st CENTURY SKILLS
- ENGAGE STUDENTS IN IN-DEPTH INQUIRY
- ORGANIZE TASKS AROUND A DRIVING QUESTION
- ESTABLISH A NEED TO KNOW
- ENCOURAGE VOICE AND CHOICE
- INCORPORATE REVISION AND REFLECTION
- INCLUDE A PUBLIC AUDIENCE

## 5. Know the Difference Between PBL and Projects

[Andrew Miller](#) Educational Consultant and Online Educator (Thank you for permission to re-print

- With PBL, **the project itself is the learning**, not the "dessert" at the end.
- If you are doing projects in the classroom, you may or may not be doing PBL. In fact, many teachers think they are doing PBL, but are actually doing projects.
- PBL-you are **teaching through the project**, not teaching and *then doing the project*.
- Want a **quick way to see if you're meeting the essential elements of PBL**....Check the Buck Institute for Education's [PBL Project Checklist](#).
- [http://www.bie.org/tools/freebies/project\\_essentials\\_checklist](http://www.bie.org/tools/freebies/project_essentials_checklist)
- Make sure that you are **focusing on aspects** such as **inquiry, voice and choice, and significant content**.

<http://www.edutopia.org/blog/project-based-learning-getting-started-basics-andrew-miller>

## 6. **PBL: Project "Balanced" Learning**

By **Kami Thordarson**

[http://www.cfmediaview.com/lp1.aspx?v=6\\_1615814200\\_72284\\_20](http://www.cfmediaview.com/lp1.aspx?v=6_1615814200_72284_20)

Essential Question. Essential Questions are about big ideas. They spark conversation and create more questions. Through a well facilitated discussion leading from the Essential Question, you can often guide students to co-creating a [Driving Question](#) in the direction you want them to go, allowing students to own the learning. The Driving Question gives them the ending destination, but there could be many different routes that will get them there. A good PBL unit will have a well thought out Essential and Driving Question to get students started in the correct direction, but allow for student voice and choice to pave the trail. Developing guideposts along the way, such as check-ins to update their need to know and timelines, will help keep students moving towards their destination and keep them from getting lost in the weeds.

### **Balance of Skills:**

A teacher becomes a master conductor of a learning orchestra during a project. Each student has their own unique talents and instruments that they bring to the concert. Taking the time to blend those talents in a productive way is critical to each group's success. Starting out with teacher selected teams can help with balance. You can build in some self-selected group or whole group activities to help relieve any team tensions and allow students to gather new insights and perspectives as they move throughout the project. Since collaboration and communication are important skills in PBL, students need opportunities to recognize each other's talents and know where their own strengths and abilities can benefit their team.

As you are designing the project, also look to see that your scope is large enough to offer students a variety of work options. Think about how the project will integrate tasks for those linear thinkers as well as offer challenges for those divergent thinkers. While students need practice and exposure to new skills to build their creative confidence, it's also important that they have places where they can stretch and expand their natural talents. We may want to play every instrument, but there is usually one that draws us in and makes us shine. It's designing a delicate balance between those solo moments and blending all of the voices that creates a successful performance at the end.

### **Balance of Time:**

Time is usually the critical factor when planning a PBL unit. Instructional time already feels overcrowded with various curriculum demands and although PBL is an integration of subject areas, most classrooms are set up to teach subjects in isolation. In the planning phase, look for those skill based lessons that are needed to support the project and how those lessons can be integrated into those isolated subject lessons. Perhaps students will need to strengthen their nonfiction reading skills and need some different strategies for curating information. Spending time on focused skills before starting the project will help students make better use of their collaboration time. Gathering continual feedback through visual thinking strategies and quick formative assessments will help point out surprise areas where students may need more support or direct instruction. Projects nearly always take longer than you think so providing yourself a time cushion will lessen stress.

### **Balance of Group and Individual Work:**

Finally, a good project should balance group and individual work. Whenever I would introduce an assignment or project in my classroom, I would hear the same two questions: "Can we work with someone?" and "Do we have to work with someone?" Because PBL is focused on collaboration, group work is expected and often times students are set up in team units. However, in order to honor all working styles, it's important to include individual accountability as well as team accountability. Also, having a protocol in place for students to follow when needing adult help to problem solve group conflicts is also helpful. Students need to feel valued as team members but also feel that their individual efforts are being recognized.

Project Based Learning can feel like tight-rope walking. But with careful planning and practice, the well-orchestrated chaos can seem more like a walk in the park.

## 7. Five stages of Knowledge

\*Following was provided by Intel® Education and has been modified to reflect the project in the "Disney" modified form.

### Stage 1: Accessing prior knowledge about Disney theme park attractions, rides and coasters.



The unit begins with a short class introduction to inform students about the project and get them excited about what's ahead. Following the class introduction students will explore building blocks, to determine what they know and what they do not know about Disney Theme Parks. Information will be explored on why to pre-assess and the various types of assessment for the PBL project. Individuals will build their knowledge base and begin project-related work in each subject area class that draws upon what they already know or have experienced related to Disney Theme Park Attractions, other parks and coasters. The session concludes on how Walt Disney World creates new attraction/rides.

### Stage 2: Investigating to build foundation knowledge about Disney theme park attractions, rides and coasters.



Students engage in mini architect (math), engineer (science), public relations (language arts), and researcher (social studies) tasks that prepare them for the group design challenge in Phase Five. In addition the students will build foundation knowledge and understanding about Disney theme park attractions, rides and coaster design during the time allotted to view seven videos on theme park design and development by Disney Imagineers.

Brainstorming and collaboration tools will be explored. The design team will be created to include: Director; Disney expert; Researcher; Mind Mapper; Computer-skills expert; Art Designer; Story Teller; Engineer; Model Builder; Audio-Music editor; Recorder-note taker; Public Relations.



### Stage 3: Expanding knowledge of Disney theme park attractions, rides and coaster design from investigations.

Students explore the type of attractions, and investigate each for the four Disney parks and the rides and attractions. Students develop research skills in curriculum content area, learn about technical reading and writing, creating the story, explore storyboards, utilize Web 2 tools, and conduct experiments presenting and rehearsing the "Pitch".

### Stage 4: Applying knowledge to the design and construction of Disney theme park attractions, rides and coaster models using their mini architect and engineer experience.

Students will create 3D design, sketches and build models of their "Theme Park Attraction and Story". Students experience and connect their new understanding about Disney theme park attractions, rides and coaster design during a virtual field trip via video conference with a "Disney" Imagineer.



### Stage 5: Contributing knowledge to a group about Disney theme park attractions rides and coasters.

Student teams prepare a Disney theme park attraction, ride and coasters design proposal to an authentic audience.

<sup>13</sup>. All images this page-Walt Disney Company. <http://thewaltdisneycompany.com/> JPEG file

## 8. Requirements: Disney Theme Park Attraction Design Team Tasks

**1. Organizing a Team** - select your team members based on their skills. You need: 5-6 members that can: Direct and manage the group; Disney expert; Researcher - Google/search expert; Mind Mapper/Brainstorming; Computer-skills expert/Presentation; Art Designer; Story Teller; Engineer; Model Builder- Sketchup; Audio-Music editor; Recorder-note taker

**2. Blue Sky** - the name that Imagineers give to the theoretical planning process--the bouncing around of ideas about how to design, why to design and what to design. The idea board stage of Imagineering. Group will brainstorm ideas for theme park attractions--always keeping in mind the story line for the attraction. Sketch the overall attraction and then the individual segment. Queue - Interactivity -Type of ride-Story-Music/Audio- Surprise element- "Weinie" etc. Evidence of vision--what would happen if....Could we...Maybe we could.. or how about? What park will the attraction best fit in?

**3. Storytelling** - Evidence of Inspiration, creativity, creative space, Story Weaving, Development, Exposition Plan (what your story is about), Goals and Story Mechanics. Moves on to the storytelling phase--unlike most theme parks, Disney prides itself on telling stories throughout its entire enterprise. This can also encompass or lead into a research and development phase.

**4. Research** - Evidence of research and writing skills, search for knowledge, any systematic investigation to establish facts. Know how to Define the task, Locate information, Select resources, Organize notes and present the ideas. Discover who the individuals are that design, build and operate the Disney Theme Parks by researching, checking patent ideas, what has worked in the past--What's NEW today. What music might work--locate audio file and mp3 audio.

**5. Design - Architect - Models** - Design is the most lengthy, because it involves exceptionally detailed and technical planning. Evidence of descriptive writing, -sketches, drawing, rendition, topography, location of ride design of track and car, slope and model building. This is where the "engineer" part of "Imagineering" starts to come into play. Computer and 3D models are constructed to make the ride move from idea to reality.

**6. Testing** - Laying the Groundwork. Students engage in preparation activities that set the stage for the learning ahead. Expanding Knowledge. Mini-experiences in each of job roles Mini-Engineer Experience--Students test design ideas using online simulations and then create Marquette's (small model of an intended work) , or 3-D models of a theme park attraction, ride or coaster design.

**7. Engineering** -Evidence of technical writing skills, model building, construction, design, audio, video and multimedia. The team then takes the models and story and makes it all into a physical reality, building the ride. All of the following come into play: Creative People; Technical People; Systems Engineers; Project Engineers; Mechanical Engineers; Architectural Engineers; Structural and Civil Engineers; Ride Control Engineers; Show Control Engineers; Audio/Video Engineers; Lighting Designers; Special Effects Designers; Finance

**8. Effects** -How will the theme, story, design , music, lighting, sound and special effects all fit into the attraction?

**9. Closeout** - The ride is extensively tested and checked from every point, angle, location and experience. Once the testing is satisfied, it's time for closeout, where everything is finalized and the Imagineers move on to their next project. Evidence of project management, attention to details, checklists, quality assurance and report writing.

**10. Summative Assessments/Public Relations**-Evidence of persuasive writing skills, Presentation skills , Multimedia presentation software. Each person in the group MUST provide a section of the final presentation.

## 9. Making of a Disney Themed Attraction

**Activities:** [View a series of videos](#) about Disney Theme Park Attractions.

### **How Does Walt Disney World Create New Rides? Video**

>> **View this first :**

Get on a Soundtracker and strap on to discover how Disney Imagineers created this high speed, thrilling rock'n roll adventure, which lighting effects are unique to Walt Disney Studios Park. >>> **Making Of Rock'n' Roller Coaster starring Aerosmith at Disneyland Paris**

<http://www.youtube.com/watch?v=SRwRdmzjOIQ> 5:48 min

#### **Software Design EXAMPLE:**

**If time permits: View this next:** (Amazing animation that Steamboat Productions produced.

>>**Expedition Everest: Legend of the Forbidden Mountain YouTube**

<http://www.youtube.com/watch?v=WjnjfriAqW4> 9:51 min

After spending over three months working on this recreation, I have finally managed to finish Expedition Everest: **Legend of the Forbidden Mountain!** I tried to make everything as detailed and accurate as possible, but the complexity of this ride is so massive that I couldn't make everything 100% accurate. For example, the queue line has such weird angles that I had to sacrifice some details on the exterior of the gift shop and main entrance building. Also, the Yeti museum is so complex inside that I needed to rearrange it (those of you who know the attraction well enough will realize that there are some differences). Finally, the mountain itself is so structurally complicated that I had to sacrifice the way it looks on the exterior. Please realize that I did my absolute best to make this ride as accurate to the real thing as possible, so I hope that you will thoroughly enjoy it! <http://www.steamboatproductions.com/>

#### **Video Three - If time permits >>> View the following videos:**

America's Thrillmakers - Walt Disney World Intro VIDEO- An in depth look into the very popular thrill attractions at the Walt Disney World Resort. Watch as America's Thrillmakers take 6 guests and test them on Disney's array of thrill rides. Learn Imagineer's secrets, guest reviews of attractions and, most importantly, what exactly makes a thrill ride. "Hang on to yer hats and glasses, cause this here's the wildest ride in the wilderness!"

#### **Making Of Crush's Coaster -Paris au Parc Walt Disney Studios**

<http://www.youtube.com/watch?v=gdxJuaJA088>

## 10. STEM teacher Donna Migdol

>> **Class members will watch the following videos** (can assign this to view outside of class is desired)

### [Roller Coaster Physics](#)

In this *Teaching Channel* video, join STEM teacher Donna Migdol as she teaches her students problem-solving skills using a real-life roller coaster design challenge.

<http://www.pbslearningmedia.org/resource/tch12.sci.phys.stem.rollcoast/roller-coaster-physics/>

>>> **30 minutes**

## 11. Pre-Assessment - What do I know - What do I not Know?

1. Use next page and **hand out** to students ( see next page)
2. Participants **fill out the skills assessment** handout
3. Participants review their skills assessment and **prepare a 30 second elevator type delivery**



4. Make a [Sandwich Board](#)/Flyer to advertise the participants skills ( provide 8 x 10 card stock and COLOR Magic Markers)
5. Use string to **make a loop so they can hand it on their neck**

## 12. Skills Database:

Name \_\_\_\_\_

-I have the following skills:

You need to hire me because.....

- \_\_\_ I have experience in WRITING - Stories; Visual Literacy; Blogs
- \_\_\_ I can create and build things from cardboard
- \_\_\_ Give me paint, cardboard, sticks and pipe cleaners and I will CREATE a \_\_\_
- \_\_\_ I have experience in creating Digital Stories and in Visual Literacy
- \_\_\_ I have experience in creating Animation/Videos
- \_\_\_ I have experience in creating STOP-Motion Videos & Apps/Tools
- \_\_\_ I have experience in creating videos that tell a story
- \_\_\_ I know how to create a slide show in an application -OTHER than PowerPoint
- \_\_\_ I know how to EDIT and RECORD with Audacity
- \_\_\_ I know how to search with 3 DIFFERENT search engines to find IMAGES
- \_\_\_ I know how to SEARCH and Locate-specific You Tube videos
- \_\_\_ I know how to SEARCH and Locate-specific Disney songs on the Web
- \_\_\_ I am an "Artist"-I can use Google SketchUp;/TinkerCAD/AutoCAD/3D Draw
- \_\_\_ I have experience in building "Scale Models"
- \_\_\_ I know how to and like to "tinker" with things
- \_\_\_ I understand "High Tech stuff"
- \_\_\_ I play a musical instrument
- \_\_\_ I have over 150 songs and music on my iPod
- \_\_\_ I am an expert in \_\_\_\_\_

**My top skill is:** \_\_\_\_\_

**My second best skill is** \_\_\_\_\_

**My third best skill is** \_\_\_\_\_

**You should select me to be on YOUR team because**

\_\_\_\_\_

### 13. Creative Project Managers

You will select 4 Project Managers if you have 20-30 in the class

You will select 3 Project Managers if you have 15-20 in the class

You will select 2 Project Managers if you have 8-15 in the class

**Questions to ask the class:** If possible select 6 individuals - when selected, they move to the front of the class

1. Who has been to Walt Disney World or Disneyland Park 8-10 times
2. Who has been to Walt Disney World or Disneyland Park 5-7 times
3. Who has been to Walt Disney World or Disneyland Park 3-4 times
4. Who has been to Walt Disney World or Disneyland Park 2 times

**Questions to ask the 6 individuals-each person has 30 seconds to answer the question.** The remainder of the class will be selecting the 4 final Project Managers

1. Tell us who you are and what you do
2. Tell us about your experience in leadership and how to delegate jobs to individuals and solve problems
3. What is your favorite Disney Park and Why? IE EPCOT or Animal Kingdom
4. What is your favorite Disney Park LAND and Why
5. What is your favorite Disney attraction and Why
6. What is your favorite Disney Themed attraction and Why
7. Explain in 30 seconds why Disney creates a story to go with the attraction
8. I love Disney because.....

### 14. HR Department - Hire the Imagineers

1. Remaining students select the 4 Project Managers - Your decision on the process and how to select

6. **Participants make a CIRCLE** - The 4 **Project Managers move to the center of the circle**- You can decide if you want the Project Managers to take notes or some other method

2. Allow the **Project Managers 5 minutes to move around the circle**, view the [Sandwich Board](#) skills and **NO questions**- This simulates reading a Resume

3. Participants then go around the circle to **present their Skills in 30 Seconds** ( make sure they state their NAME)

4. **Project Managers have 2 min to go and select their team** -Move them to a corner so others know who has been selected and who is still in the job pool.

## 15. Organizing a Team - select you team members based on their skills. You need:

4-6 members that can: Direct and manage the group; Disney expert; Researcher - Google/search expert; Mind Mapper/Brainstorming; Computer-skills expert/Presentation; Art Designer; Story Teller; Engineer; Model Builder- Sketchup; Audio-Music editor; Recorder-note taker

**Who does what, where, when, why** -Disney hires a team that includes a cross section of wildly different disciplines in order to handle the construction of a new ride. These people are called "Imagineers," a word that combines "engineers" and "imagination."

**Individual Job Responsibilities** - You will be assigned a grade based on work at your chosen job. Although this is a group project, you will receive a grade for your work only. You may also earn bonus points based on how well your piece fits together with the other members of the group and how well you work together in your group.

<p><b>Director</b></p> <p>Responsible for ensuring that the Project Team completes the project. communication, including status reporting, risk management, escalation of issues that cannot be resolved in the team, and, in general, making sure the project is delivered in budget, on schedule, and within scope. Oversee journals of each job.</p>	<p><b>Disney Expert</b></p> <p>If possible this should be an individual that has been to Disney World at least 3 time and is familiar with the 4 parks. They will provide resources and background information for the team members.</p>
<p><b>Researcher</b> - Google/search expert  <i>Evidence of research and writing skills</i>            Journal entries            -sketches, pictures, and a daily log            Internet research documentation            Use of Publisher program to create magazine cover            -thesis statement portrayed on cover            -three articles to support a thesis            Use of a data base            -Search Web for "Patent Data"</p>	<p><b>Mind Mapper</b> - Brainstorming</p> <p><b>Brainstorming</b> is a group or individual creativity technique by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its member(s).            Desired qualities are:            Defer judgment,            Reach for quantity</p>
<p><b>Computer-Skills expert/Presentations</b></p> <p>Knowledge of MAC/PC software            Knowledge of Presentation software and telling the story to make a "Persuasive Presentation"</p>	<p><b>Art Designer</b></p> <p>-create/develop specific parts of an art piece or scene            -overall visual appearance and how it</p>

<p>Editing software skills</p>	<p>communicates visually          -stimulates moods, features, appeals to a target audience          -translate desired moods, messages, concepts, and underdeveloped ideas into imagery.          -imagining what the finished piece or scene might look like</p>
<p><b>Story Teller</b></p> <p>Know your audience          Wear your guest's shoes          Organize the flow of people and ideas          Create a weenie          Communicate with visual literacy          Avoid overload          For every ounce of treatment , provide a ton of fun</p>	<p><b>Engineer's Responsibilities</b></p> <p><i>Evidence of technical writing skills</i>          -sketches, pictures, and a daily log          Technical report to include:          -track design description ;research on design elements &amp; on materials; mathematical configurations ;safety measures ;forces          Correspondence with an expert via: interview, email, or online (optional)</p>
<p><b>Architect's/ Model Builder</b></p> <p><i>Evidence of descriptive writing</i>          Journal entries          -sketches or pictures, and a daily log          Scaled continuous side and top view          -correct labels for speed, distance, time, and forces          Realistic rendition of attraction including:          -outside environment-theme-topography          -design of track and car          Slope of first drop and angle of decent          - Create model to scale</p>	<p><b>Audio-Music editor</b></p> <p>Locate audio file on the Web          Create background music for the themed attraction &amp; final presentation.          Knowledge of audio editing software  <b>Records audio</b> data from various devices;          Sound editing functions include <b>cut, copy, paste, delete, insert, silence, trim</b> and more;          Audio effects include, <b>amplify, normalize, equalizer, envelope, reverb, echo, reverse, sample rate conversion</b> and much more;          Capable of using <b>CD ripper/Burner</b>;</p>
<p><b>PR Director/Presentation Responsibilities</b></p> <p><i>Evidence of persuasive writing skills</i>          Journal entries          -sketches, pictures, and a daily log          Presentation for the group          -multimedia presentation          Presentation should include:          -safety measures          -unique features          -highlight materials used          -highlight coaster specs &amp; car design          -some information from each of the other jobs</p>	<p><b>Recorder-Note taker</b></p> <p>Transcribe conversations as meeting take place recording information captured from another source.</p> <p>Familiar with several apps for MAC or PC to assist in the note taking/recording process</p> <p>Organizational and be able to process main ideas</p>

## 16. Final Assessment – Presentation: Requirements

>>>> **Major components to include the following:**

Name your group- Team Name - members names on the team

Name of the attraction

Story and "Theme"

One 8 x 10 Graphic Flyer - used to attract the guests to your NEW attraction- PR/magazine that will market your attraction/ride to the general public.

- Should we included a sketch, drawing or a 3-D drawing of the attraction (Your choice
- Sketch or drawing of the FLOW of teh attraction
- one sentence open line in the attraction & one sentence closing line in the attraction guide
- four paragraphs that describe the attraction in detail

Audience - Age Group or who is the attraction for

Persuasive techniques that "sell" your design to the committee/authentic audience.

Type of attraction

Back story of the attraction

How do the guests enter the attraction?

Story behind the queue

Interactive queue - what is it and how does it work?

How did you "PLUS" the attraction?

Do "Animatronics" figures play in the attraction?

A technical report highlighting specific features of the ride

Research on the patent that applies

Audio/Music for the presentation ( background music is fine

Will we use a video in the presentation?

An artistic rendition-Sketches / Drawings / Model renderings ( you can substitute web images

What is your "Weenie"?

Your Weenie" Walt Disney said:" *What you need is a weenie, which says to people 'come this way.' People won't go down a long corridor unless there's something promising at the end. You have to have something the beckons them to 'walk this way.'*"

**Optional:** (Depending on time frame used) A blueprint and Marquette (a small [model](#) )

Three dimensions for either a sculptural or an architectural project. (to scale) of your group's attraction and design

Assignment presentation for each member of the team - Who Does What?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

## 17. Scoring Rubric for Oral Presentations:

Category	Scoring Criteria	Total Points	Score
<b>Organization</b> (15 points)	The type of presentation is appropriate for the topic and audience.	5	
	Information is presented in a logical sequence.	5	
	Presentation appropriately cites requisite number of references.	5	
<b>Content</b> (45 points)	Introduction is attention-getting, lays out the problem well, and establishes a framework for the rest of the presentation.	5	
	Technical terms are well-defined in language appropriate for the target audience.	5	
	Presentation contains accurate information.	10	
	Material included is relevant to the overall message/purpose.	10	
	Appropriate amount of material is prepared, and points made reflect well their relative importance.	10	
	There is an obvious conclusion summarizing the presentation.	5	
<b>Attraction</b> ( 150 points)	Team Name – Introduce each team member on the team-providing their name and job	5	
	Name of the attraction	3	
	Audience - Age Group or who is the attraction for	3	
	Type of attraction	3	
	Back story of the attraction	10	
	One sentence: Opening line in the attraction guide	3	
	One sentence: Closing line in the attraction guide	5	

	How do the guests enter the attraction? How did you "PLUS" the attraction?	10	
	Story behind the queue	15	
	Weinie	5	
	Interactive queue	10	
	Four paragraphs that describe the attraction in detail	20	
	What role does the "Animatronic" figures play in the attraction	10	
	Sketches / Drawings / Model renderings	10	
	3-D Drawing of the attraction	10	
	Audio/Music used for or during the presentation	10	
	Video used during presentation: <b>BONUS Points if USED</b>	10	
	Slides or Slide or visuals used during the presentation	10	
<b>Presentation (40 points)</b>	Speaker maintains good eye contact with the audience and is Appropriately animated (e.g., gestures, moving around, etc.).	5	
	Speaker uses a clear, audible voice.	5	
	Delivery is poised, controlled, and smooth.	5	
	Good language skills and pronunciation are used.	5	
	Visual aids are well prepared, informative, effective, and not distracting.	5	
	Length of presentation is within the assigned time limits. FIVE MIN	5	
	Information was well communicated.	10	
<b>Total Score</b>	<b>Total Points</b>	<b>250</b>	

## >>> >>> 15 minutes

### 18. Interactive Assignment: What can we learn from the past

**Interactive Assignment** (Allow one class period for four small group discussions and one large group reports  
(Following Information/data provided courtesy of Steve Alcorn web site and his 2 books)

#### **Epcot: Walt Disney World - October 1, 1982**

EPCOT Center was constructed for an estimated \$800 million to \$1.4 billion and took three years to build (at the time the largest construction project on Earth). Covering an area of 300 acres (120 ha), it is more than twice the size of the Magic Kingdom. The parking lot serving the park is 141 acres (57 ha) (including bus area) and can accommodate 11,211 vehicles.

#### **Issues at opening day:**

**8:00 AM-** Card Walker gives opening dedication speech to 250 "first family", special invited guests, press and media. Due to space limitations, only press, special guests, and a hand-selected "first family" had been allowed inside the park to witness the dedication ceremony.

At the same time, fireworks were starting to brew about 100 yards away.

2,000 guests wait outside in 89-degree heat and humidity. Some guests booed through the front gate because they could not participate in the opening dedication.

The thousands of real guests were left in the sweltering parking lot.

Many complained. They thought that Disney should at least have set up a big television screen and loudspeakers.

Ninety minutes after the gates opened, a wheel in one of the cars on Spaceship Earth missed a cam and shut the attraction down.

About 200 guests were evacuated and the vehicle had to be "jogged back into the system" before the ride could restart. The park's signature attraction was closed for two hours, and then broke down again a few hours later.

Later in the morning, about 2,000 people were emptied from the Universe of Energy when a car suddenly stopped. The car was repaired, but the show halted again moment later when one of the attraction's twelve movie projectors broke down.

- Shortly afterward, the Circle Vision movie in Canada also went down.
- Then came the "lunch rush."
- Crowds swarmed every eatery.
- Several restaurants ran out of food - Lines grew to 30 minutes.
- Ale at the English pub ran out
- 45 minutes for a pastry at the French bakery.
- The sit-down restaurants filled up so fast, they stopped taking reservations.

#### **Into the afternoon, the problems mounted.**

- The down escalator quit working at the Imagination pavilion.
- In the World of Motion, the cars kept stopping and restarting. -The sound equipment performed just as poorly. Sometimes, the narration was garbled; other times it

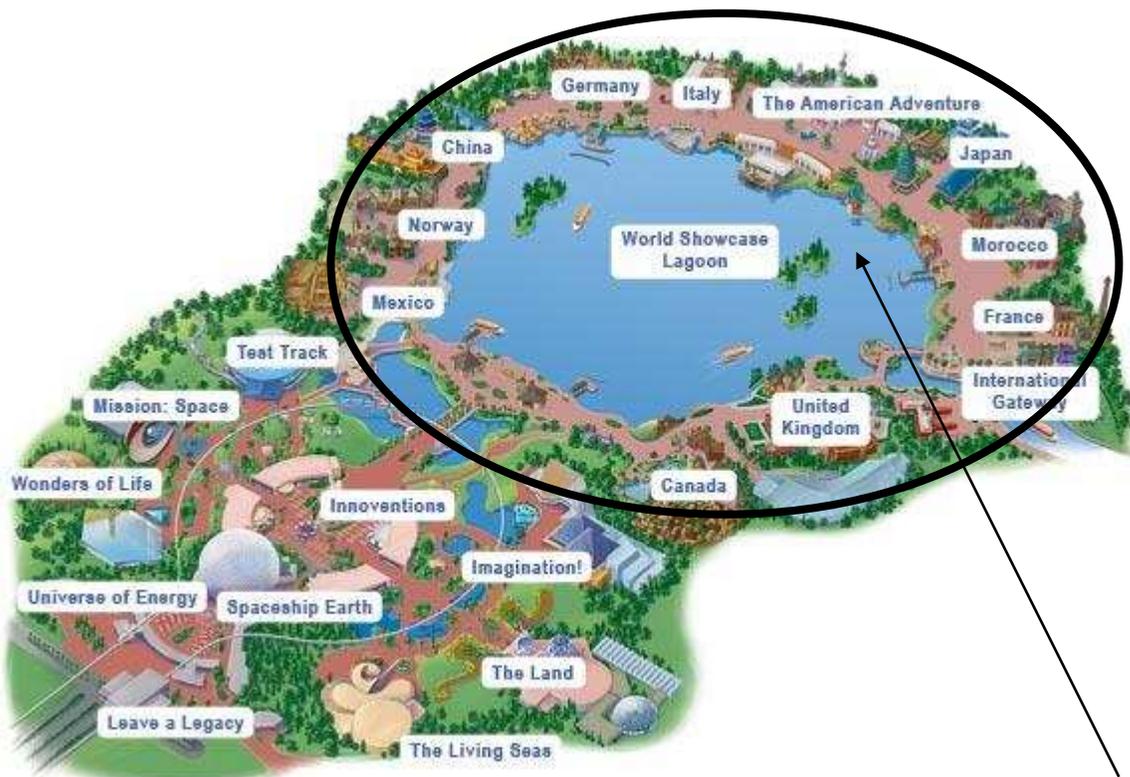
played too fast or was totally inaudible.

By this time, cast members were permanently positioned in front of the Energy pavilion to inform guests that the ride would reopen in two hours.

Every performance at the American Adventure was different, because its computer system was not yet fully integrated; forcing Imagineers to stand under the stage and physically operate parts of the show.

The Mexico boat ride, which was not expected to even be completed by opening day because it required so much electrical work, was one of the few attractions that didn't break down.

<sup>12</sup> Disney World Map. Personal photograph by Howie DiBlasi. 4-28-2012



**Guests were also physically exhausted: A stroll just around the lake was over a mile long.**

As the afternoon sun grew hotter, so did the guests. Visitors could be overheard grumbling about the constant breakdowns, the long lines, and boycotting EPCOT" to get their \$15 admission refunded.

They thought it was outrageous that they had to, pay a cover charge to spend the day doing nothing but standing in endless lines.

EPCOT Center had a fraction of the attractions of the Magic Kingdom yet twice the acreage, and therefore required an inordinate amount of walking.

Disney didn't release official attendance figures, but the outside estimate was upwards of 25,000 - nearly twice the number of expected guests.

## 19. Solutions and Statements:

List the main problems:

Group the problems- i.e. Food, PR, Ride etc.

Solution to the problems - list problem and solution

>>> **15 minutes**

## *20. Building FOUNDATIONAL Knowledge*

### **Understanding our team members - Disney Theme Park Attraction Questions-**

A. (You will need to rely on participants that have been to the Disney Parks 1-2-3 or more times)  
- **Answer the following questions:**

Applies to ANY of the Disney Parks: Magic K – Animal K – Hollywood S - EPCOT or Disneyland

- A. Best attraction/ride for THRILLS – WHERE-What Park
- B. Best attraction/ride for WOW – WHERE-What Park
- C. Best attraction/ride for EDUCATION – WHERE-What Park
- D. Best attraction for kids –4-8 years old – WHERE-What Park
- E. Best attraction/ride for BEST Queue – WHERE-What Park
- F. Best attraction/ride for Queue that needs to be fixed to make it better  
– WHERE-What Park
- G. Best attraction/ride for THEMING – WHERE-What Park
- H. Get rid of – WHERE-What Park
- I. Bring back – WHERE-What Park

>>>15 minutes

## 21. Investigating to build foundation knowledge - Type of Attractions

### A. Gravity rides



3.

Allears. WDW images. [www.allears.net/](http://www.allears.net/)  
JPEG file



Images and drawings this page - Allears. WDW images.  
[www.allears.net/](http://www.allears.net/) JPEG file

### B. Boat rides

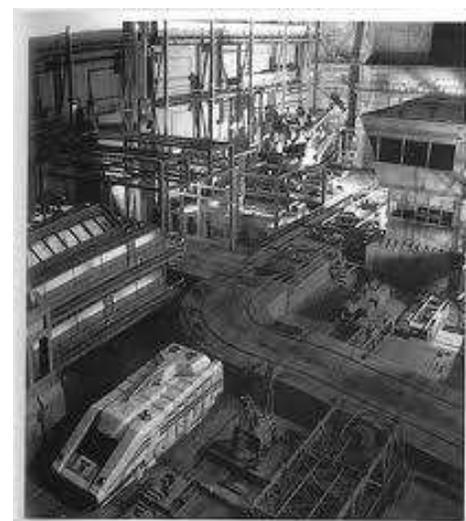


## B. Boat rides (continued)



3. Allears. WDW images. [www.allears.net/](http://www.allears.net/) JPEG file

## C. Simulators



17. All Images this page- WDW info. WDW images.



### D. Guide Rail / Track



17. All Images this page- WDW info. WDW images. [www.wdwinfo.com/](http://www.wdwinfo.com/) JPEG file

### D. Guide Rail / Track ( Cont )



12. Disney World. Personal photograph by Howie DiBlasi. 4-28-2012

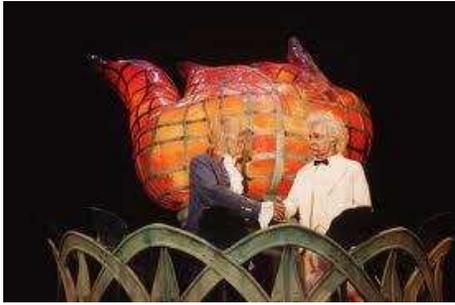
**E. Dark rides** ( some rides/attractions are combination of "Dark" & "Gravity")



**F. Carney rides**



**G. Walk through/Sit Down/Theatre**



## H. You drive



17. All Images this page- WDW info. WDW images. [www.wdwinfo.com/](http://www.wdwinfo.com/) JPEG file

>>> 15 minutes

## 22. Special Effects: Audio-Video-Music-Lighting

### 15 Coolest Special Effects In Disney World

<http://www.buzzfeed.com/cassierose117/15-coolest-special-effects-in-disney-world-fmhg>



Posted by [Cassie Ryan](#)

Thank you to : <http://www.wdwhints.com/2012/07/special-effects-used-within-haunted.html> for permission to link and re-print the article below.

#### 15. Sorcerers of The Magic Kingdom

Sorcerers of The Magic Kingdom is a park-wide, interactive game for sorcerers-in-training of all ages! Mystic portals are spread out across the park for guests to help Merlin defeat the ghastliest crew of Disney Villains, led by none other than Hades himself! Using magical key cards, the virtual portals appear in shop windows, wanted posters, and fireplaces. Different character cards, like Rapunzel's hair whip and Thumper's mighty thump, help you and Merlin defeat your next villain! Then you are sent off to your next location to continue being The Magic Kingdom's next hero!

Video here: [https://www.youtube.com/watch?feature=player\\_embedded&v=4BBOiT\\_Y-mA#t=0](https://www.youtube.com/watch?feature=player_embedded&v=4BBOiT_Y-mA#t=0)

#### 14. Expedition Everest



Expedition Everest in Disney's Animal Kingdom takes guests on a Himalayan adventure in search for the legendary Yeti! At almost 4 minutes long, this thrilling roller coaster includes it's own animatronic Yeti that terrifyingly claws and growls at riders as they zip by! Scary!

### 13. Mickey's PhilharMagic



Located in The Magic Kingdom, Mickey's PhilharMagic is the coolest 3D show a Disney lover could ask for! Combining all your favorite Disney characters and songs, Philhar takes you on a magic carpet ride with Mickey and all his musical friends!

### 12. Monster's Inc. Laugh Floor

Get ready to laugh! Mike Wasowski plays MC in this totally interactive comedy show where the audience plays the biggest part, and the monsters are totally

LIVE! Guests can even text in there own jokes to appear on the show! The Laugh Floor is located in The Magic Kingdom.

[https://www.youtube.com/watch?feature=player\\_embedded&v=IH8MCvYF6cU#t=0](https://www.youtube.com/watch?feature=player_embedded&v=IH8MCvYF6cU#t=0)



### 11. Dinosaur

Animal Kingdom takes guests back into the Cretaceous era to find some dinosaurs! In special time rovers, guests encounter over 10 super realistic (and super scary) animatronic dinos!



### 10. Star Tours

Hollywood Studios' Star tours takes guests on their very own spaceship to explore the world of the Star Wars films! Using flight simulation and projections, C-3PO leads the way through space, and every time you ride the journey is different!

## 9. The Twilight Zone Tower Of Terror

Disney's most magical hotel isn't The Grand Floridian, it's Hollywood Studios' Hollywood Tower Hotel. When lightning strikes the tower, guests are taken into the 5th dimension with some of the most advanced technology around! Before that famous drop, projections and mirrors are used to create some super creepy effects!



## 8. Enchanted Tales With Belle

This New Fantasyland attraction in The Magic Kingdom brings guests straight through Maurice's cottage to help Belle tell the story of Beauty and The Beast! After entering through a magic mirror, guests get to actually interact with the the enchanted Wardrobe and Lumiere!

[https://www.youtube.com/watch?feature=player\\_embedded&v=Z1PPoE-K9Eo](https://www.youtube.com/watch?feature=player_embedded&v=Z1PPoE-K9Eo)



## 7. Toy Story Midway Mania

Located in Hollywood Studios, Toy Story Mania! is a 4D interactive game and ride based on Disney Pixar's Toy Story trilogy. Guests wear 3D glasses and spin through virtual games to compete against each other. Disney used industrial ethernet technology to design and create the almost \$80 million ride! We have no idea what that means, but its super cool!

## 6. Mission: SPACE

When Disney puts barf bags right in front of your seat, you know something cool is about to happen! EPCOT's Mission: SPACE simulates space travel in a human centrifuge, spinning guests so fast, they feel weightless.



## 5. Soarin'

EPCOT's Soarin' is a high flying adventure that takes guests over the most beautiful sights in California, including Disneyland of course! This flight simulator uses a huge projection screen, blowing wind, and even smells to send guests straight into Cali!



## 4. Lights, Motors, Action! Extreme Stunt Show

The special effects in Hollywood Studios' Lights, Motors, Action! Extreme Stunt Show are more than just high tech, they're completely LIVE! These cars perform some of the coolest live stunts you'll ever see and then reveal how they're done with some movie magic!

[https://www.youtube.com/watch?feature=player\\_embedded&v=466SbWz2aig](https://www.youtube.com/watch?feature=player_embedded&v=466SbWz2aig)

## 3. Celebrate The Magic

Replacing the equally amazing "The Magic, The Memories, and You," "Celebrate The Magic," is a nighttime show in The Magic Kingdom that transforms Cinderella's Castle using high-tech projection technology, lighting, and pyrotechnics. This jaw-dropping spectacular leaves guests thoroughly heart-warmed and asking "how did they do that?!"

[https://www.youtube.com/watch?feature=player\\_embedded&v=JynisCVbox4](https://www.youtube.com/watch?feature=player_embedded&v=JynisCVbox4)



## 2. The Haunted Mansion

From hitchhiking ghosts, to singing busts, to (not?) stretching paintings, The Magic Kingdom's Haunted Mansion is full of special effects! From classic animatronics to modern high-tech projection technology, The Haunted Mansion's 999 happy haunts leave guests amazed!



## 1. Fantasmic!

Fantasmic is Disney's Hollywood Studios nighttime spectacular! With fireworks, live actors, water effects, pyrotechnics, music, boats, and incredible projections onto large walls of misting water, Fantasmic is the most visually magical and high-tech show around! And now, Fantasmic has introduced Glow With The Show technology that syncs the show up to special glowing ear hats!

[https://www.youtube.com/watch?feature=player\\_embedded&v=-MYjamO02Wo](https://www.youtube.com/watch?feature=player_embedded&v=-MYjamO02Wo)

>>> 30 minutes

## 23. Blue Sky -

the name that Imagineers give to the **theoretical planning process**--the **bouncing around of ideas** about how to design, **why to design and what to design.**

The idea board stage of Imagineering.

Group will **brainstorm ideas** for theme park attractions--always keeping in mind the story line for the attraction.

**Sketch the overall attraction** and then the individual segment. Queue - Interactivity - Type of ride-Story-Music/Audio- Surprise element- "Weinie".

Evidence of vision-what would happen if....

Could we...

Maybe we could.. or how about?

What park will the attraction best fit in?

## 24. Assignment: I think we should...Design a attraction that would.....

Because

Should be placed in the ..... park

Because

Should be in the ..... land/area

Because

They type of ride vehicle should be ..... Because

Story – Backstory would be ....

>>> 15 minutes

## 25. Exploring Communication-Collaboration-Web Tools



[Conceptboard – Online Whiteboard for Visual Collaboration](#)

**Conceptboard** is the online *whiteboard* app for your project: Visual team *collaboration* on ideas, drafts and documents simultaneously on your browser, tablet ...

( Provided courtesy of <http://cosketch.com/> No sign-up required for BASIC

## **CoSketch.com - Online Whiteboard Collaboration**

CoSketch is a multi-user online *whiteboard* designed to give you the ability to quickly visualize and share your ideas as images. No registration or plugins ...

## **Exploring Web Tools - Google Draw**

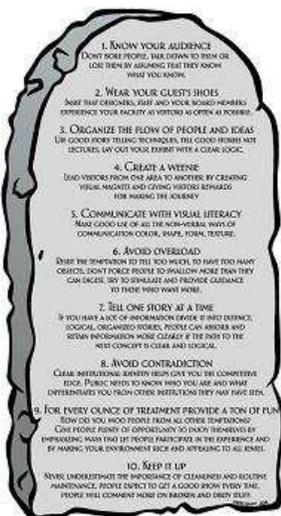
[Google Drawings - create diagrams and charts, for free.](#)

<https://docs.google.com/drawings/create>

Google Docs-Choose from a wide variety of shapes to create diagrams and charts. Free from *Google*.

**>>> 15 minutes**

## **26. Mickey's Ten Commandments: Expanding Knowledge**



Every theme park designer should know what's been done in the past. Benchmarks and precedents are extremely important. With that in mind, you should learn the ten guidelines to theme park design developed by Walt Disney Imagineering President Marty Sklar.

Image: David Weeks: The Ten Commandments Image. [davidweeksmagic.blogspot.com](http://davidweeksmagic.blogspot.com) JPEG file

- 1. Know your audience - Don't bore people, talk down to them or lose them by assuming that they know what you know.
- 2. Wear your guest's shoes - Insist that designers, staff and your board members experience your facility as visitors as often as possible.

3. Organize the flow of people and ideas - Use good story telling techniques, tell good stories not lectures, lay out your exhibit with a clear logic.

4. Create a weenie - Lead visitors from one area to another by creating visual magnets and giving visitors rewards for making the journey

5. Communicate with visual literacy - Make good use of all the non-verbal ways of communication - color, shape, form, texture.
6. Avoid overload - Resist the temptation to tell too much, to have too many objects, don't force people to swallow more than they can digest, try to stimulate and provide guidance to those who want more.
7. Tell one story at a time - If you have a lot of information divide it into distinct, logical, organized stories, people can absorb and retain information more clearly if the path to the next concept is clear and logical.
8. Avoid contradiction - Clear institutional identity helps give you the competitive edge. Public needs to know who you are and what differentiates you from other institutions they may have seen.
9. For every ounce of treatment , provide a ton of fun - How do you woo people from all other temptations? Give people plenty of opportunity to enjoy themselves by emphasizing ways that let people participate in the experience and by making your environment rich and appealing to all senses.
10. Keep it up - Never underestimate the importance of cleanliness and routine maintenance, people expect to get a good show every time, people will comment more on broken and dirty stuff.

**>>> 10 minutes**

## **27. Assignment- Explore Parks and Maps At A Glance - Walt Disney World**

- Magic Kingdom
- Hollywood Studios
- Animal Kingdom
- EPCOT

## **Disneyland - California Adventure**

**>>> 30 minutes**

## **28a. Storytelling**

### **Mythic Storytelling**

Though you may not be aware of it, whenever you're playing in any of Disney's many theme parks, the Imagineers who designed those parks are busy playing with your head. EVERY GUEST IS A HERO reveals for the first time how the artists and technical wizards of Walt Disney Imagineering have harnessed the magic of mythic storytelling to press all sorts of psychological buttons you never knew you had, inspiring you and millions of your fellow visitors to return to the parks again and again.

- [The Magic of Disney Parks Storytelling: Big Thunder ...](#)

by [Tyler Slater, Public Relations Manager, Disney Destinations](#) (Thank you for permission to re-print)

So, are you holdin' onto your hats and glasses? Ye-howdy, here we go!

According to legend, a supernatural force has dwelled deep within Big Thunder Mountain and would be angered by any trespassers. Many believed these ghostly tales were what largely kept the area uninhabited for many years. But when an old prospector found some gold nuggets along the mountain's slopes in the late 1860s, miners rushed to the town of Rainbow Ridge for their own chance to strike it rich.

For several years, Big Thunder Mountain Mining Company produced a large quantity of gold and the myths of a supernatural force remained simply legend. However, by 1883, the miners were forced to blast deeper and deeper into the mountain to continue producing profits. Shortly after the explosions began, strange things started happening: eerie noises echoed through the new shafts, cave-ins became frequent and equipment would mysteriously fail. As soon as the mine trains began rolling out of the station on their own, people started fleeing the area.

Today, the Big Thunder Mountain Mining Company welcomes guests to hop aboard a train, but beware – you just may experience the mountain's more supernatural forces and perhaps even stumble upon an explosive mine shaft.

Next time you hop on board Big Thunder Mountain Railroad, keep an eye out for the horseshoe at the entrance to the first mine shaft; you'll notice it hangs right-side-up to keep the luck inside. Nearing the end of the attraction, you'll enter another mine shaft with a "Keep Out" sign in front. There, you'll see another horseshoe, however this time, it is upside-down.

<http://disney parks.disney.go.com/blog/2014/04/the-magic-of-disney-parks-storytelling-big-thunder-mountain-railroad-at-disneyland-park/>

## Storyboard Software

### **Jeff Dixon-Author .... "Key To The Kingdom"**

"That is the power of a good story. It can encourage, it can make you laugh, it can bring joy. It will make you think, it will tap into your hidden emotions, and it can make you cry. The power of a story can also bring about healing, give you peace, and change your life!"

I was hooked on this story from page one, but that quote absolutely had me hook-line-sinker to the very end!

**That quote not only described lots of books that I have read lately, but it described the work of Jeff Dixon to a T. His work is mesmerizing!**

**28b. [Welcome to Storyboard That – The FREE online storyboard creator ...](#)**

Looking for an amazing, fun, free, and easy to use online *storyboard* creator? Storyboard That is a cutting edge Web 2.0 tool for rapidly creating amazing storyboards, no art skills needed. Great for business meetings and in the classroom .. **Free 14-Day Trial - Teachers - \$4.95 Per Month**



# 10 Great Tools for Storyboarding

Posted on by [mayraixavillar](#)

<http://mayraixavillar.wordpress.com/2012/11/05/10-great-tools-for-storyboarding/>

## 29. >> "Creating the Story "

" Let's take an example. A roller coaster careens through a darkened room over a faintly illuminated cityscape. Enthralling? Not really, there's no story.

**Take two.** A rock band is late for a concert at the Hollywood Bowl. They invite you to hop in their limo and go careening through the Hollywood Hills and all around the L.A. freeway system to make it on time. That's the story behind Disney MGM's Rock 'n Roller coaster, and it works.

**How about this one:** you climb aboard a BART subway train. It pulls out of the station, then begins to shake as an earthquake strikes. Fires erupt, and a flood comes cascading down the tunnel, extinguishing the flames and splashing over the train. Exciting? I guess. But not completely fulfilling. Why? They forgot to tell us why we were getting on the train, where it was going, and what our mission was. The name of this attraction at Universal Studios Florida is Earthquake, so we knew what to expect when we got on. But there was no underlying story to get us involved. "

**"Here are two more real ones, one that doesn't work, one that does:**

A boat glides through a dark tunnel. It passes a volcano, people at a bazaar trying to sell us things, Mayan ruins, dancing dolls with colorful costumes, and fiber-optic fireworks.

A boat glides through a dark tunnel. It passes a ship full of pirates and a fort. A battle is underway. Cannon balls whiz overhead, and explosions dot the water. Farther along the pirates have seized the village and are auctioning off the women, stealing treasures, and setting fire to the buildings. As we barely escape from the burning timbers we see prisoners still trapped in the jail, trying to lure a dog into bringing them the keys to their cell.

Which ride has a story, the Mexico pavilion at Epcot or Pirates of the Caribbean?

Sometimes the story is just too complicated for the ride. The Lord of the Rings makes a great book and movie trilogy, but would it make a good ride? Of course not. Rides with more complicated storylines are often best implemented using simulators. Here it is customary to have a narrator – often the driver – who can summarize the adventure as it proceeds. And since simulator rides can be as long as ten minutes, there's more opportunity to convey the story."

## 9 Creative Storytelling Tools That Will Make You Wish You Were A Student Again

By Kim Fortso <http://thejournal.com/articles/2012/10/22/9-storytelling-ipad-apps-and-web-tools.aspx>

### 1. [Popplet](#)

Virtual mind-mapping tool that allows users to create digital mind webs by embedding content from the internet. The app features bright colors and clean design, and can nudge students along as they create their own narratives by serving as a brainstorming tool. Some use it to frame a story-[students] can map out their writing.

### 2. [My StoryMaker](#)

Colorful characters (think pirates and little blue men), whimsical props and scenery and an endless number of ways to put them together. "My StoryMaker lets you scaffold what you're doing with the app," Bellow said. "For instance, if you have two characters--a witch and a genie holding an apple--you can click on the genie and say 'give,' and the app will write, 'The genie gives the apple to the witch,'" Bellow explained. "But what I love most about it is that you can actually alter the story in any way you want. You can incorporate vocabulary words and all sorts of material." Full disclosure: it's kind of fun for adults, too.

### 3. [StoryLines for Schools](#)

Described as a "game of 'telephone' with pictures" on the iTunes store. Encourages students to develop stories collaboratively. One student types a sentence on the mobile app before passing it to a classmate, who illustrates an interpretation of the sentence. A third student describes the sketch, and so forth. Bellow recommended that StoryLines for Schools be used as a "story-planning app"

>>> **Assignment** : Develop an attraction concept.

This blue-sky phase is fun, because reality hasn't yet intruded on our plans

## 30. Disney - Ultimate Attraction Guide

©Disney. All rights reserved. All content and sample illustrations provided by WED Imagineering and Walt Disney Company. **NOTES:** The sample descriptions below are examples of a PR description to draw park attendees to your attraction.

### **Expedition Everest** - Legend of the Forbidden Mountain®



Careen through the Himalayan mountains on a speeding train while avoiding the clutches of the mythic Abominable Snowman.

**Beware the Legend** - Folklore has it that a fierce guardian monster protects the Forbidden Mountain.

For years, the Royal Anandapur Tea Company shipped its tea by train through the Forbidden Mountain pass. After a series of mysterious accidents were blamed on the dreaded Yeti monster, the railroad closed. Today, the railway is operating again, thanks to a group of local entrepreneurs—Himalayan Escapes, Tours and

Expeditions— who offer curious travelers transportation to the base camp on the scenic mountain.



Yet there are some who believe the legend to be true and that the Yeti will do everything in its power to protect the sacred realm of the Himalayas. Visitors beware.

**Climb the Mountain** - Embark on a thrilling expedition through the icy peaks of the Himalayas.

Venture inside a Tibetan-style stone structure at the foot of towering Mt. Everest and make your way past the booking office of Himalayan Escapes – Tours and Expeditions. Wander past a small temple and a cozy general store before exploring a museum dedicated to the study of the Yeti, the mysterious snow monster said to inhabit the Himalayas.



**The Adventure Begins** - Board a weather-beaten train and ascend a series of rolling hills overlooking a serene green forest. Climb a steep incline and navigate through a ceremonial stone tunnel before reaching the summit. Once at the “top of the world,” hold on tight as you pick up speed and race inside the dreaded mountain.

**An Unexpected Encounter** - Without warning, your train screeches to a halt: A broken and twisted track appears in front of you. Brace yourself as your train unpredictably begins to race

backward into the darkened mountain, furiously swooping up into a double-looping turn. Inside the windswept passage, the shadowy figure of a growling creature can be seen on a cavern wall. It is the Yeti—the legend is real.

Hurl 80 feet down the base of the cursed mountain and swoop in and out of murky caves and along jagged rocky ledges as you race to escape the dreaded monster before he catches up with you. Will you make it back to civilization safely?

**Or will the Yeti claim another victim?**

All images this page<sup>-5</sup>. Magical Getaway. WDW images. [www.magicalgetaway.com/](http://www.magicalgetaway.com/) JPEG file

## 31. Create the three critical pieces of you "Themed Attraction"

Example: WONDERLAND by [Eva](#)

This ride dives into the rich, imaginative world of Lewis Carroll's Wonderland and the nonsensical characters that inhabit it.

### **BACKSTORY**

The eccentric, yet earnest Seeker has found what he believes to be the journal of Lewis Carroll, and has been dissecting it word by word ever since. To the logical, untrained eye the journal reads mostly as nonsensical scribbles. But the Seeker knows in his heart there is truth behind the madness. He is determined to find the 'Wonderland' Carroll describes and prove its existence to the world!

### **QUEUE**

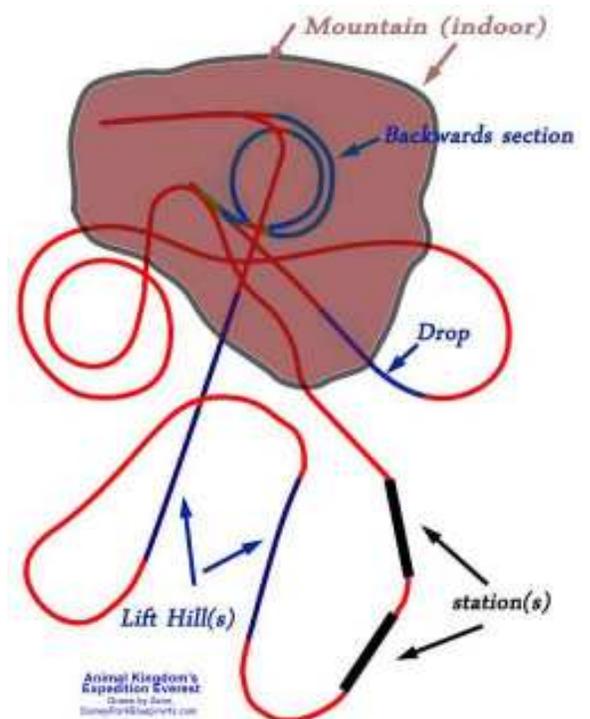
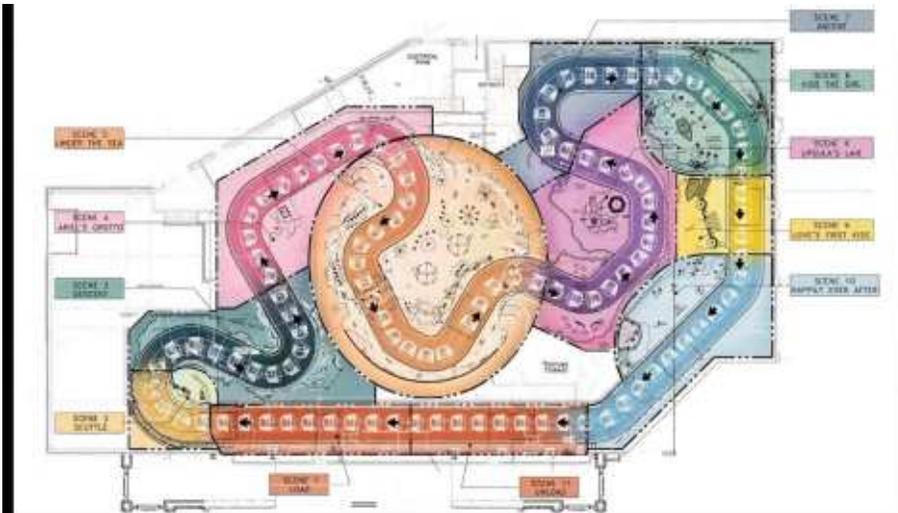
The Seeker is looking for a team to find Wonderland with him. In the queue, the guests will be introduced to the backstory and all the while leading up to the Seeker's laboratory. Once the guests arrive at the pre-show, they meet the Seeker where he congratulates as being specially selected for this mission! He has spent years developing an invention that will take you deep into Wonderland itself, the only trouble is he needs the right team to pilot the machine while he monitors the controls remotely. The guests are the only people mad enough to be trusted for such an important quest! With no time to delay, he urges the guests to board the machine so he can finally set it on its magical course.

### **RIDE**

The ride itself will be a combination of classic dark ride storytelling and modern thrill ride elements. The ride vehicle will be fast moving, with sharp turns and level changes, but not as extreme as a gravity and iron ride so the story can be appreciated and understood.. The ride story will be geared more towards the elements of the Tim Burton film than the classic tale experienced in the current Alice in Wonderland dark ride. Additionally this ride will not feature Alice as the main character but rather focus on Wonderland itself, from Lewis Carroll's perspective. By doing this, the hope is to attract a wider audience base, specifically more mature guests.

>>> 15 minutes

32. Describe the basic 'Flow' of the attraction from start to finish



>>> 15-30 minutes

### 33. Exploring Web Tools -Sketch Software [Sketchpad](#)

Sketchpad is a cool platform that you can use to make awesome drawings using text and a wide range of colors and patterns.

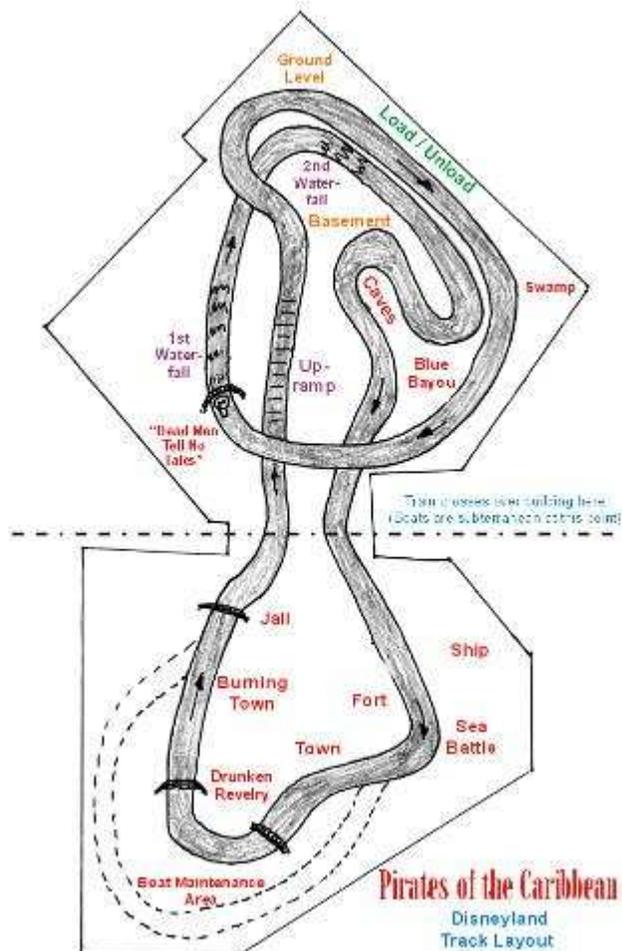
<http://mudcu.be/sketchpad/>

### 34. A Pirate's Life for You

Wander a meandering alleyway within a Spanish fortress and board a small barge for a spellbinding high-seas adventure. Escape through a shadowy grotto past the ghostly catacombs of fallen pirates and swoop down a small rushing waterfall—your passageway to the Golden Age of Piracy. Behold boisterous buccaneers drunk on the spoils of plunderin' during a 9-minute cruise amid the Old World. Sing along as windswept pirates serenade you with their classic anthem, "Yo Ho, Yo Ho (A Pirate's Life for Me)." And even spy a sly Captain Jack Sparrow from The Pirates of the Caribbean film series along the way!

#### If Ye Be Seekin' Adventure...

Take off on a treacherous voyage to the 17th century, when rowdy rogues and rascallions ruled seaport towns along the Spanish Main under the watchful eye of "Jolly Roger."



>>> 15 minutes

### 35. >>> Assignment :

*Craft a story line for your attraction. One paragraph - three sentence maximum.*

## Example:

A roller coaster careens through a darkened room over a faintly illuminated cityscape. Enthralling? Not really, there's no story.

**Take two.** A rock band is late for a concert at the Hollywood Bowl. They invite you to hop in their limo and go careening through the Hollywood Hills and all around the L.A. freeway system to make it on time. That's the story behind Disney MGM's Rock 'n Roller coaster, and it works.

**Take three:** A boat glides through a dark tunnel. It passes a volcano, people at a bazaar trying to sell us things, Mayan ruins, dancing dolls with colorful costumes, and fiber-optic fireworks.

## 36. Develop Your "PITCH"

A good storyboard artist is a good storyteller. The drawings do not have to be pretty, but they must have the meaning and the feelings behind the idea. A good storyboard artist is a good pitchman. Walt Disney, they say, was an amazing pitchman/storyboard artist. Walt's great ability was his passion and vision behind the pitch. The storyboard pitch is one of the great performance arts developed in the 20th century at Disney (yet no one ever gets to see it). The use of storyboards is one of the reasons Walt Disney's early films were so remarkable; the practice was soon copied.

**"At our studio we don't write our stories, we draw them."  
— Walt Disney**

With storyboarding you tell the story in the simple form (storyboard reels) before entering the more complex form. The storyboard lets the whole team in on what's going on with the production. The storyboard is "an expensive writing tool, but an inexpensive production tool." The storyboard can cut out a lot of unnecessary work. Storyboards allow you to see what is not working (and toss the bits out that don't work).

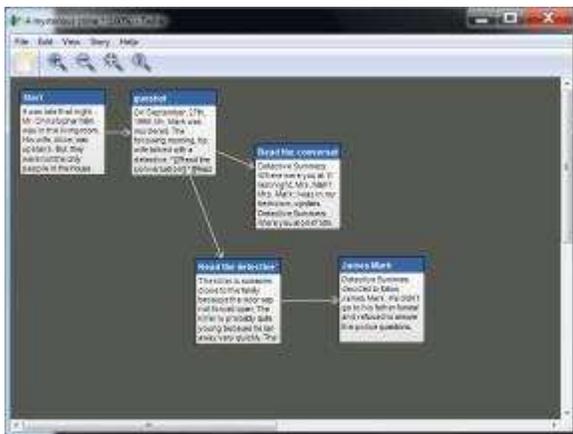
>>> 30 minutes

## 37. Exploring Web Tools - Storyboard Software

Free iPad Apps Drawing apps: [Paper](#) , [Bamboo paper](#) and [SketchBook Express](#)

### [Popplet](#)

Virtual mind-mapping tool that allows users to create digital mind webs by embedding content from the internet. The app features bright colors and clean design, and can nudge students along as they create their own narratives by serving as a brainstorming tool. Some use it to frame a story-[students] can map out their writing.



### [Twine](#)

This is a quite simple and free application to create a non-linear story that allows you to graphically organize how your scenarios will unfold. You can read Cathy Moore’s impressions about Twine [here](#) and watch [this video](#) to get started. In the flowchart view, each page or scene is displayed in small boxes that are linked according to the learner's options. So as you write your story, you build a map of possible paths. The final output is a single web page that you can share with stakeholders and something that works as a functional prototype too.

## 38. Exploring Web Tools - Google Draw

[Google Drawings - create diagrams and charts, for free.](#)

<https://docs.google.com/drawings/create>

Google Docs

Choose from a wide variety of shapes to create diagrams and charts. Free from Google.

Tools: Web 2.0 Drawing Tools for Every Level

Tools: Kids 3D Draw: TinkerCad

Tools” Sketch-up: [Google Sketch Up](#)

Tools: [Google Sketchup - Tutorials - How To get Started](#)

## 39. Images for Story and Storyboards

### Search by Image – Inside Search – Google

[www.google.com/insidesearch/features/images/searchbyimage.html](http://www.google.com/insidesearch/features/images/searchbyimage.html)

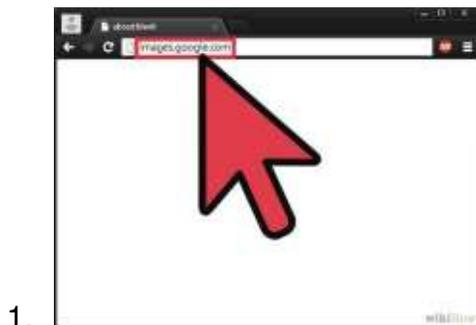
Drag and drop an *image* from the web or your computer into the *search* box on *images.google.com*. ... Select the *image* you want to *use* to start your *search*.

## How to Search by Image on Google

Two Methods: [Using the Google Images Website](#) [Using the Right-Click Menu \(Chrome and Firefox\)](#)

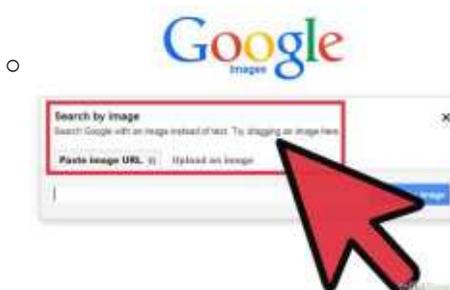
With Google's Search by Image tool, you no longer need to begin the image search with a word or a phrase. You can now begin with an actual image that you see on the web, or that you have on your computer, to search for similar images or to find out more information about that specific image.

### Method 1 of 2: Using the Google Images Website



**Open the Google Images website.** Visit [images.google.com](http://images.google.com) in your computer's web browser.

- You cannot "Search by Image" using Internet Explorer 8 or earlier. You must be using Google Chrome, Firefox, Internet Explorer 9 or newer, or Safari.<sup>[1]</sup>

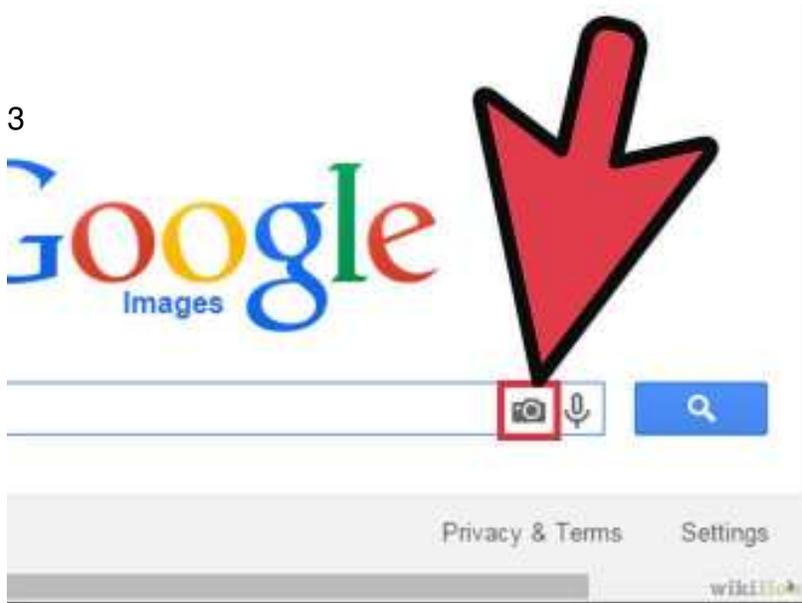


- You can search by image from a mobile device if you are using the mobile version of Google Chrome. Press and hold an image on a website and select "Search Google for this image" from the menu that appears.

**Click the Camera icon on the right side of the search box.** This will open the Search by Image tool.

2.

3



**Select how you want to add an image.** There are three ways you can search by an image:

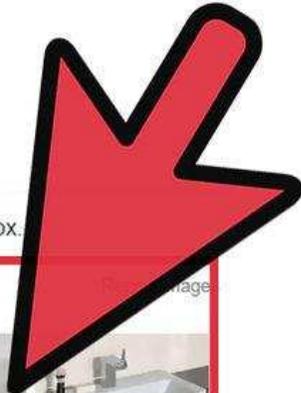
- Paste image URL - You can paste any copied URL (address) for an image online.
- To get an image's URL from any website, right-click on the image and select "Copy image address" or "Copy image URL". Once the URL is copied, click the field in the Search by Image tool and press **^ Ctrl+V** (Windows) or **⌘ Cmd+V** (Mac) to paste the URL.
- Upload an image - Click the **Choose file** button and browse for the image on your computer. Once you select an image, it will be uploaded to Google Search, which may take a few moments.

○



Image size:  
1600 × 1200

No other sizes of this image found.



○  
○

Tip: Try entering a descriptive word in the search box.

### Visually similar images

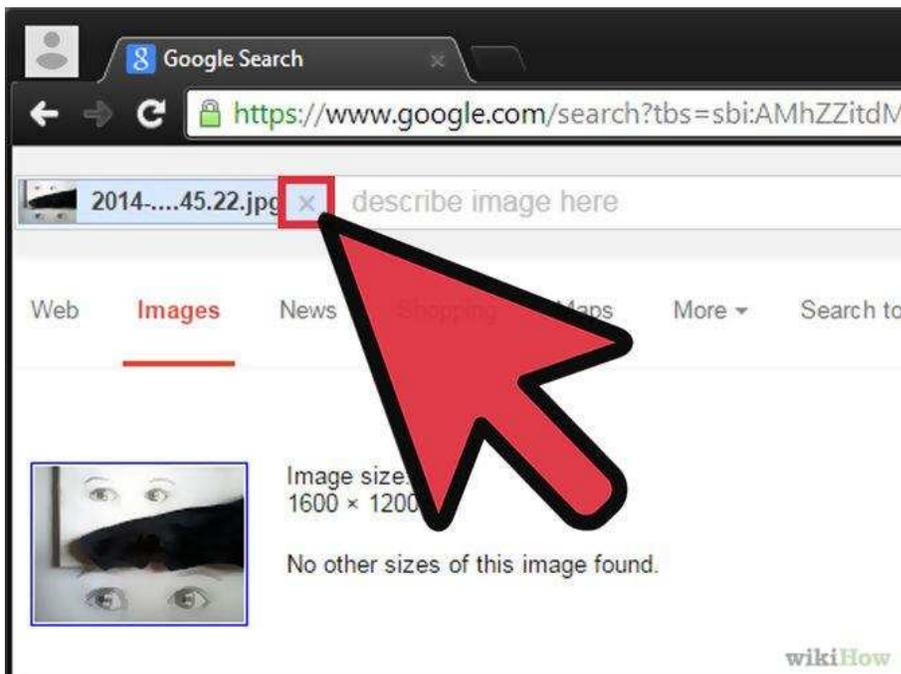


wikiHow

○

- Drag and drop an image - If you have a folder open with the image you want to search for, you can simply drag and drop it into the Search by Image tool to upload it.

**Browse the results of the image search.** After the image is uploaded the search results will be displayed. Google will attempt to determine the original creator of the image based on search results, and will also display images that are visually similar. This can be very useful for finding additional images for a set. Beneath the similar image results, you'll see a list of pages that have the same image on them.



**Stop searching by the image.** If you no longer want to search by that image, you can click the "X" next to the image name in the Google Search bar.

wikiHow

## Method 2 of 2: Using the Right-Click Menu (Chrome and Firefox)

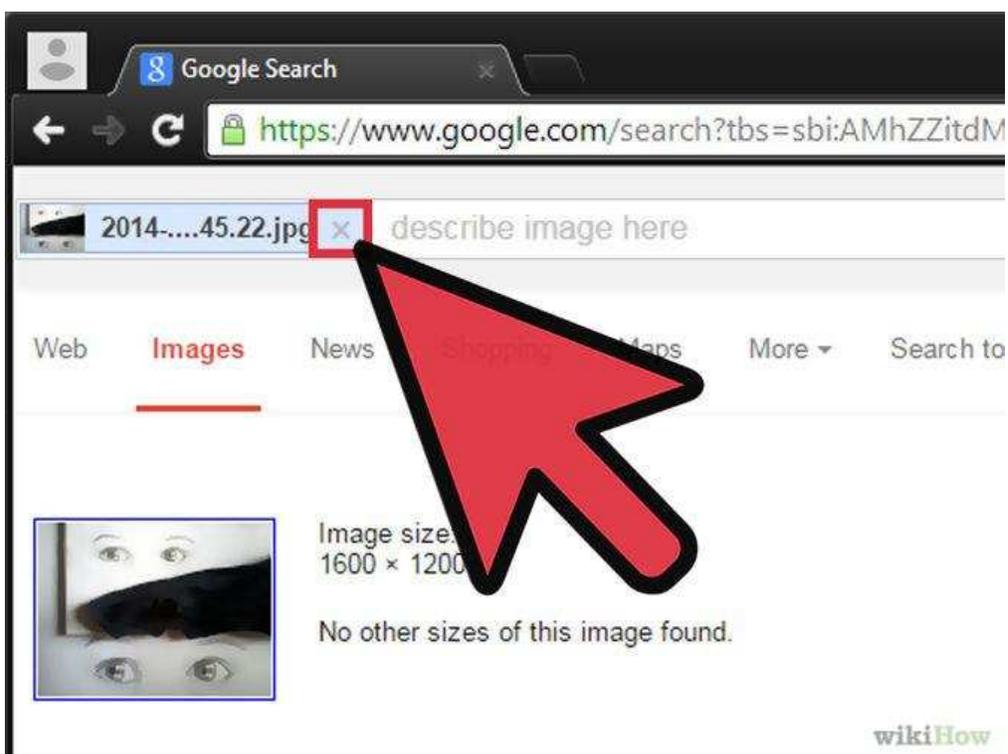
**Right-click on an image on a website.** You can only do this using Google Chrome, or by installing the Firefox "Search by Image" extension.

- [Click here for instructions on installing Firefox extensions.](#)
- You can't right-click to search by image in any other web browsers.

**Select "Search Google for this image".** This will open a new tab with the Google Images search results.

**Browse the results of the image search.** After the image is uploaded the search results will be displayed. Google will attempt to determine the original creator of the image based on search results, and will also display images that are visually similar. This can be very useful for finding additional images for a set. Beneath the similar image results, you'll see a list of pages that have the same image on them.

**Stop searching by the image.** If you no longer want to search by that image, you can click the "X" next to the image name in the Google Search bar.



## 40. "Weenie"

While developing the new theme park Walt Disney remembered that he could lead the dog wherever he wanted with a "weenie", so this is the term he coined for describing to his Imagineers how to get the guests to go to certain places and directions. Unfortunately Lady died while at a vet visit around the time Disneyland was opening of a blood clot.

All the parks have what is referred to as a "weenie". Magic Kingdom of course has Cinderella Castle while Epcot has Spaceship Earth. The Animal Kingdom has the Tree of Life and Hollywood Studios has the Sorcerers Hat. But those are only the big ones, there are many more located throughout the parks to find and explore. What are some of your favorite "weenies"?

>>> **15 minutes**

## 41. Queue - Interactive Queues: What are interactive queues?

Interactive queuing system is one that will keep guests entertained while they wait for one of the park's attractions.

Disneyland has the immersive **Indiana Jones Adventure** ride, and I'm happy to stand in it's painstakingly themed queue which includes interactive elements that run through it. The queue truly feels like an extension of the ride.

**Haunted Mansion** : The best reason to walk through the entire queue? Hunny walls! create music, and books that slide in and out from a library wall. There is a pipe organ that can be played by touching the keys, with the song "Grim Grinning Ghosts" emanating from it. Tombstones that used to be in the graveyard to the left of the Haunted Mansion entrance are now scattered throughout - some are close enough to touch.

"It works as our warm-up act essentially for the show, but it also takes time while people are working through that and so it keeps them entertained while they're waiting," Garlington said.

"We do study the psychology, try to understand what our guests are thinking and make sure that we're keeping them happy as they move through the lines."

Disney employs more than 75 industrial engineers who help the company with queue management at its parks around the world, said Marilyn Waters, director of media relations at Walt Disney Imagineering.

>>> 30 minutes

## 42. Assignment : Poster Attraction Design - Telling Our Story Visually -

Design a poster/flyer to promote you new attraction

[The Best 8 Tools to Create Posters for your Classroom](#)

1- [Poster My Wall](#)

2- [Befunky](#)

3- [Picassa](#)

4- [Art Skills](#)

5- [Muzy Thoughts](#)

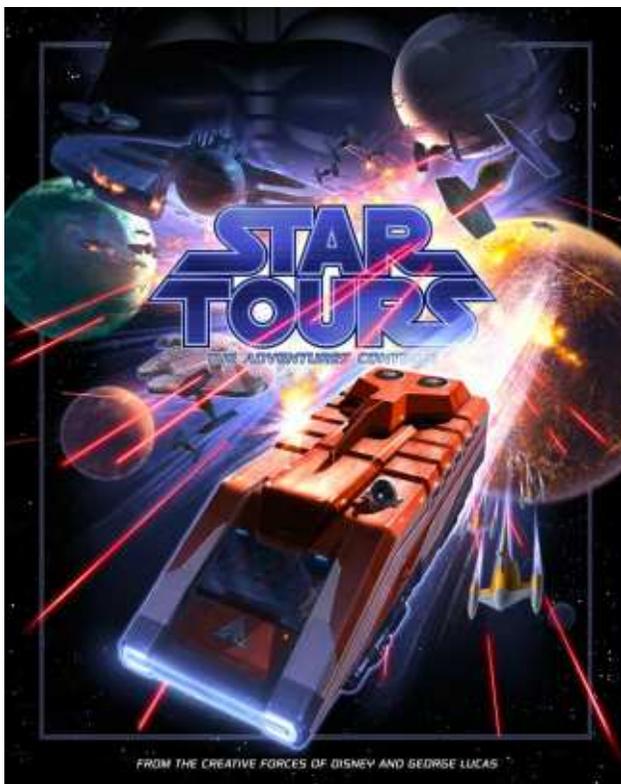
6- [Posterini](#)

7- [Smore](#)

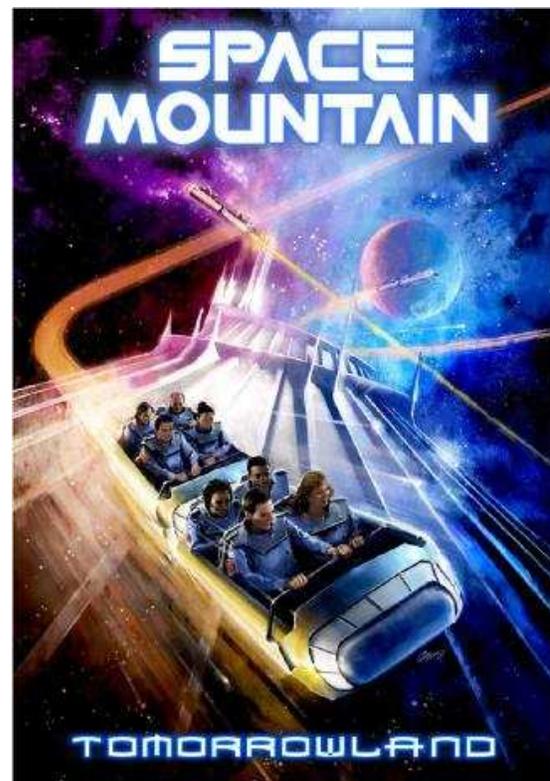
8- [Zeem](#)

**Sample to explore**

### Disney Attraction Posters



325



>>> 30 minutes

## 43. Testing and Experiments >> Laying the Groundwork

Students engage in preparation activities that set the stage for the learning ahead.

### Expanding Knowledge

The project moves ahead with mini-experiences in each of job roles on a theme park attractions, attraction, rides or coaster design team.

Students use their knowledge as they engage in mini architect (math), engineer (science), public relations (language arts), and researcher (social studies) tasks that prepare them for the culminating project. This allows all students to experience all job roles and learn the valuable information embedded in each.

AMUSEMENT PARK PHYSICS  
What are the forces behind the fun?

DESIGN A ROLLER COASTER

Height of the first hill    Shape of the first hill    The exit path    Height of the second hill    The loop

**Your Roller Coaster**

Why did your design succeed or fail? Find out about each step in your coaster design in your safety inspection.

(Note: This page will tell you the solutions. If you want to keep working on your coaster, click on a piece in the diagram above.)

YOUR SAFETY RATING:  
YOUR FUN RATING:

- [Mini-Engineer Experience](#) > Students test design ideas using online simulations and then create Marquette (small model of an intended work) , or 3-D models of a theme park attraction, ride or coaster design.

- [HowStuffWorks "Roller Coaster Physics"](#)
- <http://science.howstuffworks.com/engineering/structural/roller-coaster3.htm>
- [Amusement Park Physics -- Design a Roller Coaster](#)
- <http://www.learner.org/interactives/parkphysics/coaster/>

Roller Coaster Physics



**Investigating to Build and Expand Foundation Knowledge** about Disney theme park attractions, rides and coasters. Students develop research skills , learn about technical topics in Engineering, technical reading and writing, and conduct experiments in math and science that build understanding about force and the laws of motion.

### >>> Making it real -

Assignment: Explore the following links to understand Disney Technology, design and patents

**Check these out - Interesting Disney Patents:**

<http://www.hiddenmickeys.org/Patent/Patent.html>

<http://www.oitc.com/Disney/Patent/Patent.html>

**Six Degrees of Walt Disney** -- Patent Search Illuminates a Legend

<http://blog.globalpatentsolutions.com/bid/28838/Six-Degrees-of-Walt-Disney-Patent-Search-Illuminates-a-Legend>

**FLYING ENTERTAINMENT VEHICLE:**

Anthony Paul Dohi et al

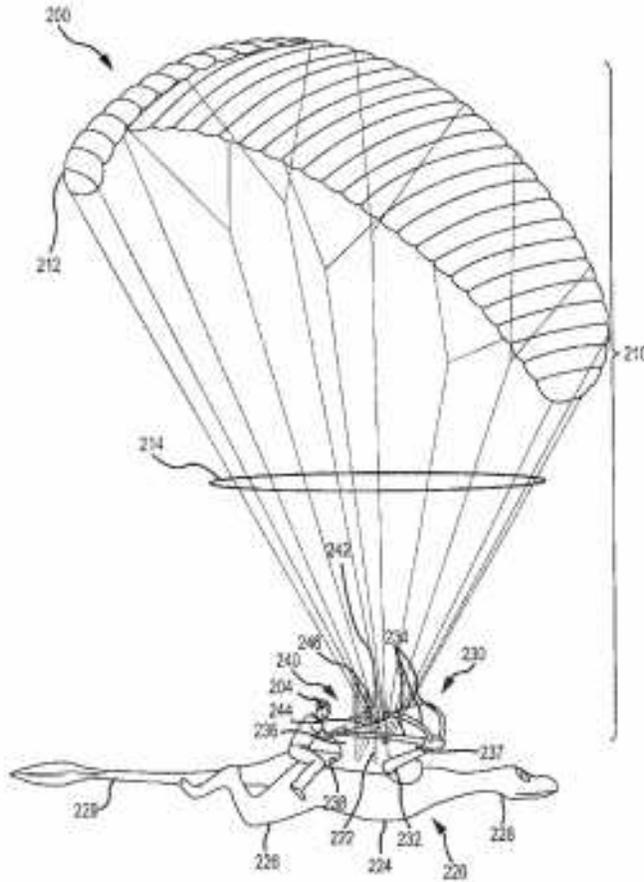
<http://www.google.com/patents?id=W5bZAAAAEBAJ&printsec=drawing&zoom=4#v=onepage&q&f=false>

# BETAMOUSE #48 – Flying Entertainment Vehicles

## Related U.S. Application Data

(60) Provisional application No. 61/176,484, filed on May 7, 2009.

be supported on or by the vehicle  
be lift neutral. The show elements  
ers away from the lift system such  
the lift or features that cause the



Hello fellow aeronautic enthusiasts, this week we bring you an episode on [FLYING ENTERTAINMENT VEHICLES](http://betamouse.net/flying-entertainment-vehicles/), a ***patent awarded to Walt Disney Imagineering R&D unit. Can you say, flying audio-animatronics?!?*** We can. And we shall talk about it.

<http://betamouse.net/flying-entertainment-vehicles/>

[What could Dragons possibly have to do with New Fantasyland?](#)

A few months ago some [photos of flying dragon](#) themed ultra-light plane were spotted over Bakersfield, CA. The photos were taken by Bakersfield resident Tammy K and posted on her [Facebook page](#), then picked up by the media. The word on the street was that this was for a secret project for the Magic Kingdom's new Fantasyland expansion. I found that odd, because so far no dragon themed

Patent Application Publication Nov. 11, 2010 Sheet 1 of 14

attraction has been announced for the park.

Now, Disney Parks Blog author Gary Buchanan has created a blog and a viral video about a dragon that looks suspiciously like the flying device spotted in California.

The ESSENTIAL QUESTION IS:

**How do we, as new "Disney Imagineers" design a safe, exciting, themed attraction with an interactive "Queue" to increase attendance and "Theme Park" revenue.**

**>>> 30 minutes**

## **45. Exploring Web Tools - Slide Show Creator - Presentation Tools**

### **10 Sites To Make Free Photo Slideshow Online With Music**

(Thank you for permission to reprint from [CarlCheo.com](http://CarlCheo.com), a technology blog that features great software, tools, and websites.)

Wish to share your memorable trips or events to your friends and family? Photo slideshow is always a great way to make your pictures look more interesting. You don't need any advanced photo or video editing skills to create an excellent and professional looking slideshow. These websites will do the job for you. Simply upload your photos/videos, choose your favorite theme, and share the cool photo slideshow to anyone on the Internet.

**EXAMPLE:** Kizoa <http://www.kizoa.com/>



Kizoa is a free slideshow and [collage maker](http://www.kizoa.com/).

You can also store and edit your photos in Kizoa. Similar to Roxia PhotoShow, it has tons of extra features that allow you to add transitions, effects, text, music, animations, etc. In a hurry? No problem. Upload your photos and let Kizoa to randomly select the transitions that will be played between your photos to create a slideshow in 3 clicks.

You can also convert your photo slideshow into video to share it on Youtube.

## 46. Check List: 5 Minute Presentation Check List & Notes

Depends if you are doing 1 day-5 days or 10 days or semester project (modify as needed)

Check List - Who does what? >>>> **Major components to include the following:**

- Name your group- Team Name - Introduce members names on the team and job
- Name of the attraction
- Story and "Theme"
- One 8 x 10 Graphic Flyer - used to attract the guests to your NEW attraction- PR/magazine that will market your attraction/ride to the general public.
- Should we included a sketch, drawing or a 3-D drawing of the attraction (Your choice)
- Sketch or drawing of the FLOW of the attraction
- One sentence open line in the attraction & one sentence closing line in the attraction guide
- Four paragraphs that describe the attraction in detail
- Audience - Age Group or who is the attraction for
- Persuasive techniques that "sell" your design to the committee/authentic audience.
- Type of attraction
- Back story of the attraction
- How do the guests enter the attraction?
- Story behind the queue
- Interactive queue - what is it and how does it work?
- How did you "PLUS" the attraction?
- Do "Animatronics" figures play in the attraction?
- A technical report highlighting specific features of the ride
- Research on the patent that applies
- Audio/Music for the presentation ( background music is fine)
- Will we use a video in the presentation?
- An artistic rendition-Sketches / Drawings / Model renderings ( you can substitute web images)
- What is your "Weenie"?

Your Weenie" Walt Disney said: " *What you need is a weenie, which says to people 'come this way.' People won't go down a long corridor unless there's something promising at the end. You have to have something the beckons them to 'walk this way.'*"

**Optional:** (Depending on time frame used) A blueprint and Marquette (a small [model](#) )

Assignment presentation for each member of the team - Who Does What?

- |    |    |    |
|----|----|----|
| 1. | 2. | 3. |
| 4. | 5. | 6. |

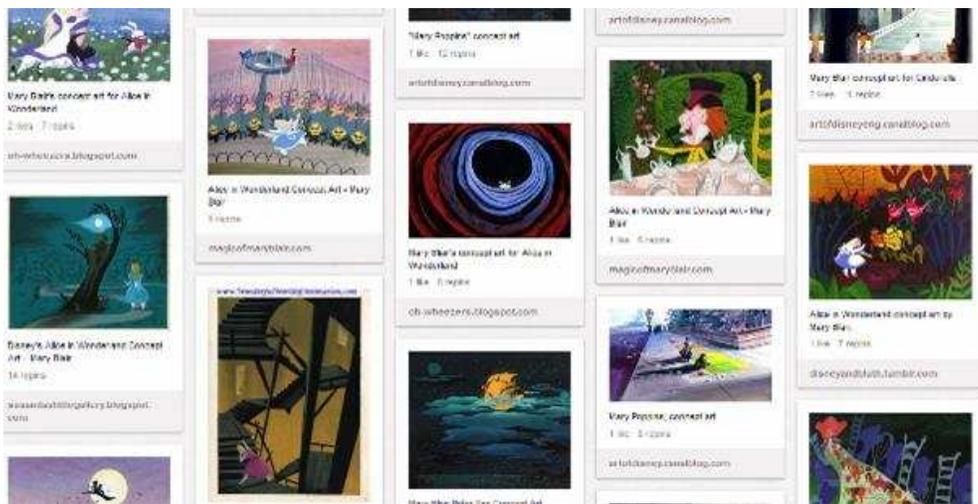
**>>> 15 minutes**

## 47. Concept Art

Applying knowledge to the design and construction of Disney theme park attractions, rides and coaster models using their mini architect and engineer experience. Students will create "Concept Art", 3D design, sketches and build models of their "Theme Park Attraction and Story". Students experience and connect their new understanding about Disney theme park attractions, rides and coaster design during a virtual field trip via video conference with a "Disney" Imagineer.

### Disney Concept Art - Pinterest

Disney concept art by Mary Blair and Eyvind Earle Disneys Sleeping Beauty ... Disney Studios concept piece Animation Art concept piece of Tinkerbell <http://pinterest.com/laurenrhayes/disney-concept-art/>



**>>> 15 minutes**

## 48. Web 2.0 Drawing Tools for Every Level

**Draw Island** - One of the better digital art sites to come around. Draw Island allows a user to create a custom drawing and then even animate it. <http://drawisland.com/>

**Drawz It** <http://www.drawzit.com/> Simple, online drawing application, **Drawz It**. Easy and perfect for young students. do not have to create accounts . Import pictures, add shapes or draw with the pencil. You can easily add

text and choose from a selection of “rubber stamps.” When finished with a drawing, click share it. You will be given a link to the JPG image.

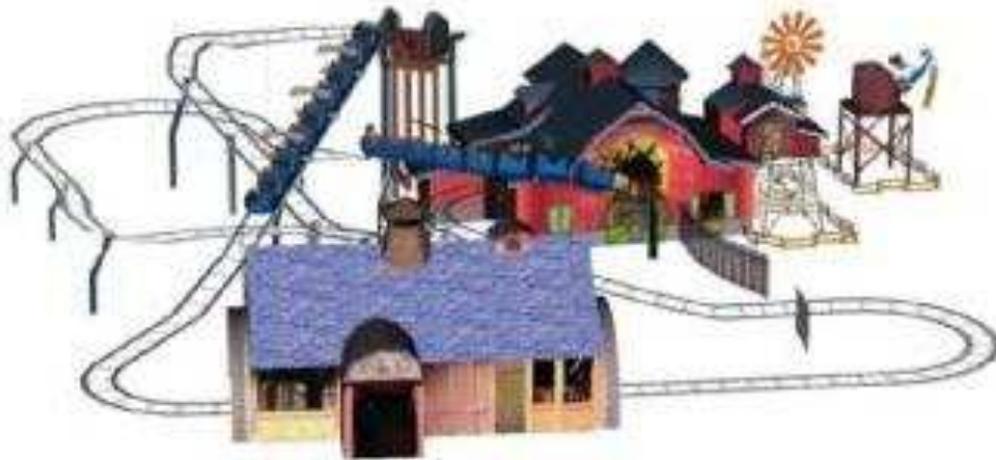
**Queeky** <http://www.queeky.com/> is an advanced drawing application suitable for older students. Accounts are required and the basic membership level is free. Numerous powerful tools are included for the budding artist to experiment with. Brushes, charcoals and much more allow for amazing drawing capabilities. Multiple layers are also possible and demonstrate the power of digital art. Designed for older students.

**MugTug SketchPad** <http://mudcu.be/sketchpad/> Is Drawz It is too simple-Queeky is too complicated? Try [MugTug SketchPad](http://mudcu.be/sketchpad/). Great user interface and just enough tools for the middle-years students. Tools can be customized; set diameter, hardness, flow and opacity of the brush tool.

**SketchUp-Make** Recommended for primary and secondary education; ***Free to use for any educational purpose***; Build and share 3D models; Find and download models from Sketchup's 3D Warehouse; Work offline when there's no internet connection <http://www.sketchup.com/download>

## Sketch of FULL attraction: **The Barnstormer at Goofy's Wiseacre**

[The Barnstormer at Goofy's...](#) by [Walt Disney World](#) The Barnstormer at Goofy's...



<http://sketchup.google.com/3dwarehouse/details?mid=d6ea59749226cb59fea692e0a2674411>

3D Warehouse Results Sorted by relevance Results 1 - 12 of about 43 for Pooh's



**pooh pee**  
by [C](#)  
1st try  
[Download Model](#)



**Pooh's Playful Spot**  
by [Walt Disney World](#)  
Pooh's Playful Spot is a...



**Pooh Corner**  
by [Venkatesham](#)  
Pooh Corner  
[Download Model](#)



**The Many Adventures of Winnie...**  
by [Walt Disney World](#)  
The Many Adventures of Winnie...



**Winnie the pooh style tree...**  
by [SmellyPizza](#)  
I'm not sure why sumone would...  
[Download Model](#)



**Pooh**  
by [caca](#)  
C'est un cacca très heureux  
[Download Model](#)



**Pooh's Playful Spot...**  
by [Danny](#)  
Located in Disney World Of...  
[Download Model](#)



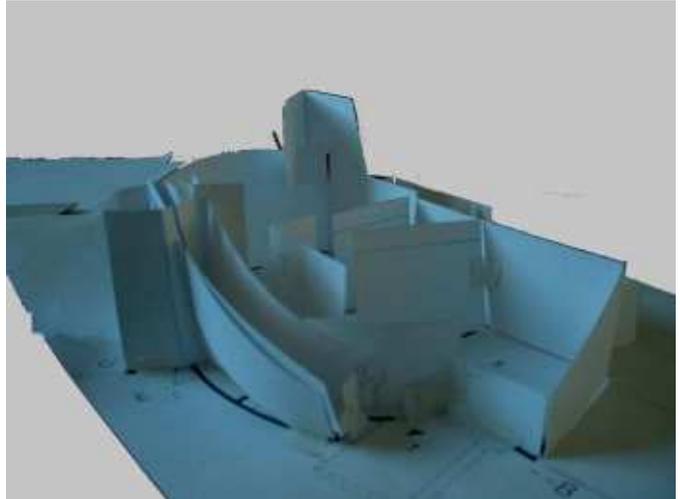
**pooh**  
by [aron](#)  
POOH  
[Download Model](#)

 **Trimble** 3D Warehouse  
powered by 

<http://sketchup.google.com/3dwarehouse/search?uq=0797089932779026395412515&scoring=m>

>>> 30 minutes

## 49. Design-Models-Quick Build - Paper



Models-Quick Build - Clay





Quick Build - Styrofoam



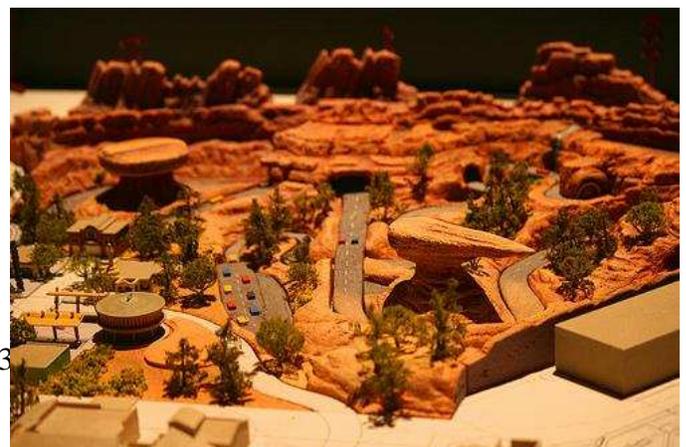
Samples for "Disney Imagineering" model for "Blue Sky"

Mine Train Thru Nature Wonderland

<http://nwrr.blogspot.com/>



11. Images below- Disney World. Personal photograph by Howie DiBlasi. 1-25-2011



## Model Construction- Which one will I use?

Virtual : 3D- Sketch-up model -  
Physical:

Wire shape

Foam

Paper

Craft

FOAM Pipe insulation



>>> 15 minutes

## 50. Rubric

[http://www.readwritethink.org/files/resources/lesson\\_images/lesson416/OralRubric.pdf](http://www.readwritethink.org/files/resources/lesson_images/lesson416/OralRubric.pdf)

TRAIT	4	3	2	1
<b>NONVERBAL SKILLS</b>				
EYE CONTACT	Holds attention of entire audience with the use of direct eye contact, seldom looking at notes.	Consistent use of direct eye contact with audience, but still returns to notes.	Displayed minimal eye contact with audience, while reading mostly from the notes.	No eye contact with audience, as entire report is read from notes.
BODY LANGUAGE	Movements seem fluid and help the audience visualize.	Holds movements or gestures that enhances articulation.	Very little movement or descriptive gestures.	No movement or descriptive gestures.
POISE	Student displays relaxed, self-confident nature about self, with no mistakes.	Makes minor mistakes, but quickly recovers from them; displays little or no tension.	Displays mild tension; has trouble recovering from mistakes.	Tension and nervousness is obvious; has trouble recovering from mistakes.
COMMENTS:				
<b>VERBAL SKILLS</b>				
ENTHUSIASM	Demonstrates a strong, positive feeling about topic during entire presentation.	Occasionally shows positive feelings about topic.	Shows some negativity toward topic presented.	Shows absolutely no interest in topic presented.
ELOCUTION	Student uses a clear voice and correct, precise pronunciation of terms so that all audience members can hear presentation.	Student's voice is clear. Student pronounces most words correctly. Most audience members can hear presentation.	Student's voice is low. Student incorrectly pronounces terms. Audience members have difficulty hearing presentation.	Student mumbles, incorrectly pronounces terms, and speaks too quietly for a majority of students to hear.
COMMENTS:				
<b>CONTENT</b>				
SUBJECT KNOWLEDGE	Student demonstrates full knowledge by answering all class questions with explanations and elaboration.	Student is at ease with expected answers to all questions, without elaboration.	Student is uncomfortable with information and is able to answer only rudimentary questions.	Student does not have grasp of information; student cannot answer questions about subject.
ORGANIZATION	Student presents information in logical, interesting sequence which audience can follow.	Student presents information in logical sequence which audience can follow.	Audience has difficulty following presentation because student jumps around.	Audience cannot understand presentation because there is no sequence of information.
MECHANICS	Presentation has no misspellings or grammatical errors.	Presentation has no more than two misspellings and/or grammatical errors.	Presentation has three misspellings and/or grammatical errors.	Student's presentation has four or more spelling and/or grammatical errors.
COMMENTS:				

**What is it?** This rubric helps teachers guide students in grades 9-12 in making effective presentations in a project, and it can be used to assess their performance. Alignment with CC ELA standards for Speaking and Listening is noted.

**Why do we like it?** This rubric describes an aspect of communication that is especially emphasized in PBL: presenting to an audience. We think it is clear, concrete, and student-friendly. It shows how CCSS can be met through PBL.

**How can you use it?** Use this rubric to guide students and assess their work, or to inform your thinking as you create your own assessment tools. Schools and districts can adopt or adapt this rubric for use across all classrooms.

[http://bie.org/object/document/9\\_12\\_presentation\\_rubric\\_ccss\\_aligned](http://bie.org/object/document/9_12_presentation_rubric_ccss_aligned)

## Scoring Rubric for Oral Presentations:

Category	Scoring Criteria	Total Points	Score	
<b>Organization (15 points)</b>	The type of presentation is appropriate for the topic and audience.	5		
	Information is presented in a logical sequence.	5		
	Presentation appropriately cites requisite number of references.	5		
<b>Content (45 points)</b>	Introduction is attention-getting, lays out the problem well, and establishes a framework for the rest of the presentation.	5		
	Technical terms are well-defined in language appropriate for the target audience.	5		
	Presentation contains accurate information.	10		
	Material included is relevant to the overall message/purpose.	10		
	Appropriate amount of material is prepared, and points made reflect well their relative importance.	10		
	There is an obvious conclusion summarizing the presentation.	5		
<b>Attraction ( 150 points)</b>	Team Name – Introduce each team member on the team-providing their name and job	5		
	Name of the attraction	3		
	Audience - Age Group or who is the attraction for	3		
	Type of attraction	3		
	Back story of the attraction	10		
	One sentence open line in the attraction guide	3		
	One sentence closing line in the attraction guide	5		
	How do the guests enter the attraction?	10		

	How did you "PLUS" the attraction?	10	
	Story behind the queue	15	
	Weinie	5	
	Interactive queue	10	
	Four paragraphs that describe the attraction in detail	20	
	What role does the "Animatronic" figures play in the attraction	10	
	Sketches / Drawings / Model renderings	10	
	3-D Drawing of the attraction	10	
	Audio/Music used for or during the presentation	10	
	Video used during the presentation	10	
	Slide or visuals used during the presentation	10	
<b>Presentation (40 points)</b>	Speaker maintains good eye contact with the audience and is appropriately animated (e.g., gestures, moving around, etc.).	5	
	Speaker uses a clear, audible voice.	5	
	Delivery is poised, controlled, and smooth.	5	
	Good language skills and pronunciation are used.	5	
	Visual aids are well prepared, informative, effective, and not distracting.	5	
	Length of presentation is within the assigned time limits. FIVE MIN	5	
	Information was well communicated.	10	
<b>Total Score</b>	<b>Total Points</b>	<b>250</b>	

>>> **30 minutes**

## **51. How will we do our pitch: Questions to ask:**

Can we finish in 5 min

Will we use Web tools?

Will we use Google Docs-Draw?

Will we use Google Docs-Presentation?

Collaboration Software to use?

Who shares what?

Did we PLUS the attraction?

Should we have music?

Should we use or make a video? Vine? Or?

Should we use Sketch up or Thinker-Cad?

Will we use Slides or visuals during the presentation?

How will we use Sketches?

How will we use Drawings?

Will we use the document camera to show drawings/sketches?

How or will we use Model renderings?

What role do the "Animatronic" figures play in the attraction?

How will we show the FLOW of the attraction?

## **52. Showtime**

# Check List: 5 Minute Presentation Check List & Notes

Depends if you are doing 1 day-5 days or 10 days or semester project (modify as needed)

Check List - Who does what? >>>> **Major components to include the following:**

- Name your group- Team Name - Introduce members names on the team and job
- Name of the attraction
- Story and "Theme"
- One 8 x 10 Graphic Flyer - used to attract the guests to your NEW attraction- PR/magazine that will market your attraction/ride to the general public.
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- One sentence open line in the attraction & one sentence closing line in the attraction guide
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- Interactive queue - what is it and how does it work?
- How did you "PLUS" the attraction?
- Do "Animatronics" figures play in the attraction?
- A technical report highlighting specific features of the ride
- Research on the patent that applies
- Audio/Music for the presentation ( background music is fine
- Will we use a video in the presentation?
- An artistic rendition-Sketches / Drawings / Model renderings ( you can substitute web images
- What is your "Weenie"?

Your Weenie" Walt Disney said: " *What you need is a weenie, which says to people 'come this way.' People won't go down a long corridor unless there's something promising at the end. You have to have something the beckons them to 'walk this way.'*"

**Optional:** (Depending on time frame used) A blueprint and Marquette (a small [model](#) )

Assignment presentation for each member of the team - Who Does What?

- |    |    |    |
|----|----|----|
| 1. | 2. | 3. |
| 4. | 5. | 6. |

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### Copyright - Credit - Disclaimer:

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## APPENDIX C: Attributes - Images - Web references -

The following attributes apply to personal photography by Howie DiBlasi

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Sample attribute will be used throughout the e-book: (sample) **Example:** Delano, Jack. Toy Story. 2011. [land.allears.net](http://land.allears.net), JPEG file. *Ibid.*, p. 4.

1. WDW Live. WDW images. [www.wdwlive.com/](http://www.wdwlive.com/) JPEG file
2. Walt Disney Company. <http://thewaltdisneycompany.com/> JPEG file
3. Allears. WDW images. [www.allears.net/](http://www.allears.net/) JPEG file
4. USA weekend. WDW images. [www.usaweekend.com/](http://www.usaweekend.com/) JPEG file
5. Magical Getaway. WDW images. [www.magicalgetaway.com/](http://www.magicalgetaway.com/) JPEG file
6. Disney rides. WDW images. [www.disneyrides.org/](http://www.disneyrides.org/) JPEG file
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18. DisneyLand. Personal photograph by Howie DiBlasi. 12-28-2012
19. lintercot. WDW images. [www.intercot.com](http://www.intercot.com) JPEG file
19. All images above - lintercot. WDW images. [www.intercot.com](http://www.intercot.com) JPEG file
20. Inside The Magic. Concept Art. [www.insidethemagic.net](http://www.insidethemagic.net) JPEG file
21. [AnimationWorld](http://www.awn.com) So, Is This Where I'm Supposed to Laugh?. Web Image. [www.awn.com](http://www.awn.com) JPEG file
31. **INTEL. Intel Education: It's a Wild Ride. WEB Link**  
<http://www.intel.com/content/www/us/en/education/k12/wild-ride.html>
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