

Knott's Berry Farm Project Kit #1

Congratulations! You're going to Knott's Berry Farm! Use these project ideas to enrich your educational experience in the park. Read through them before you go to make sure you understand the terms and concepts, and to help you determine if you want to expand upon any of them. **You'll find fun facts and printable worksheets at the end of this packet.**

a- elementary level activity b- middle school level activity c- high school level activity

Language Arts

Knott's Berry Farm is full of fun things to do, but there is a lot that goes on behind the scenes. Informational reports are used by staff to detail the workings and conditions of the attractions in the park. Try your hand at writing a professional informational report on one of the attractions.

- a. Pick an attraction to do your report on. Draw or write about three details about that attraction (height, color, etc) and whether or not you think it looks safe for guests based on the way it looks.
- b. Choose one attraction to do your report on. Detail five specific details of the attraction, like estimated height, paint condition, queue condition, etc. Conclude your report with a recommendation for improvement.
- c. Detail ten specific details of the attraction of your choice. Include guest experience ratings, safety ratings, queue management ratings, etc. Conclude your report with your approval and/or recommendations for improvements. Use appropriate letter format to present your report.

Materials required: Notebook, pen/pencil

Submission: A copy of your writings/drawing, and any pictures/videos

Teaching or learning notes:

Applied Math

Math is everywhere! Every single attraction at Knott's was created using math. Take a look around and find examples of the math you know.

- a. Identify and draw the shapes that you see and where you see them. See if you can find places where simple math equations were used. Document your findings.
- b. Identify the math used to create one particular feature in the park. Outline the concepts and principles you see.
- c. Identify the math used to create one particular feature in the park. Outline the concepts and principles, and use estimation to perform one of the calculations the builders would have used.

Materials required: Notebook, pen/pencil, calculator or smartphone (optional)

Submission: Your calculations, estimations, and conclusions, and any pictures/videos

Teaching or learning notes:

Science

Check out the physics of rollercoasters! All ride designs utilize the principles of Conservation of Energy, inertia, friction, potential and kinetic energy, and gravity. What makes the fast rides go fast? Why do rides slow down when they are going uphill? Why do you get flung from side to side around corners? What is inertia and what affect does it have on ride physics? How do rides use potential and kinetic energy to keep them going? How is energy “conserved” during the ride? What parts do friction and gravity play? What are Newton’s three laws of motion and can you see them working on the rides?

- a. Discuss some of the simpler concepts and try feeling the forces at play on some rides. Compare rides to one another and talk about what goes into building them. Draw one of the rides.
- b. Discuss the concepts and identify as many physics concepts as you can on some rides. Compare rides, and then pick one ride at the park to diagram/map and include the forces you can identify to define how that ride works.
- c. Discuss the concepts, identify them on some rides, and diagram one of them including its use of physics. Design your own ride using the things you’ve learned.

Materials required: Notebook, pen/pencil

Submission: A copy of your drawings, diagrams, maps, or designs, and any pictures/videos

Teaching or learning notes:

Social Studies

There are a lot of people at Knott's Berry Farm! How does an amusement park handle the crowds? What sorts of tools does it employ to manage people and prevent unsafe crowding conditions? What sorts of tools does the park use to limit the number of people who attend the park in a day? What types of attractions does the park utilize to help with crowd control? How do people respond to these tools? Do they notice? How many people do they need to employ to help manage their guests? What affect does the layout of the park have on the movement of people? Can you see these same principles in use in the planning of large cities or other social environments?

- a. Notice how many people are in the park. Discuss some of the things Knott's does to control crowding and help make each guest's experience pleasurable. Write down or draw the techniques you see and how often you see them being used.
- b. Discuss crowd control pre-entrance, during guest stay, and around specific attractions. Analyze the layout of the park and if/why certain features were designed with the purpose of managing crowds.
- c. Discuss crowd control and analyze the layout of the park. Discuss the things you've seen in light of larger social environments you've been in. How universal are these techniques? What are your ideas for improving guest experience at Knott's?

Materials required: Notebook, pen/pencil

Submission: A copy of your writings/drawings, and any pictures/videos

Teaching or learning notes:

FUN FACTS

- While most of us know it as the Timber Mountain Log Ride, when the attraction first opened in 1969, it was the Calico Log Ride. The first ride of it's kind managed to bring out some of the biggest stars of the era for it's unveiling. The very first person to officially take the 38-foot plunge was The Duke himself, John Wayne.
- Knott's Berry Farm was not originally a theme park! While most people know Knott's Berry Farm for its attractions and its many roller coasters, family rides, water rides and historical rides, the Buena Park theme park actually sits on the an old berry farm. Hence the name Knott's BERRY FARM. Beginning around the 1920's, the Knott's family sold berries, preserves, and pies on a roadside stand along State Route 39. When Cordelia Knott started selling food through her Chicken Dinner Restaurant during the Great Depression, it became extremely popular and put them on the map. Because of this and the crowds which ensued, attractions popped up. Over time, the attractions grew larger and larger and eventually became what it is today. Knott's Berry Farm actually claims to be the world's first theme park as well!
- Montezooma's Revenge's loop is 7 stories tall.
- There are 48 animals on the Merry-Go-Round and all of them are hand-carved.
- Locked up in the Ghost Town Jail is 'Sad-Eye Joe', ' the park's first 'character.' For more than 70 years, this crusty life-sized figure has 'spoken back' to any guest that chooses to engage with him. Just look through the bars and say something. Joe is sure to answer you back.
- There are dinosaur tracks throughout the park, remnants of an old attraction called The Kingdom of Dinosaurs. See if you can find some!

Knott's Berry Farm

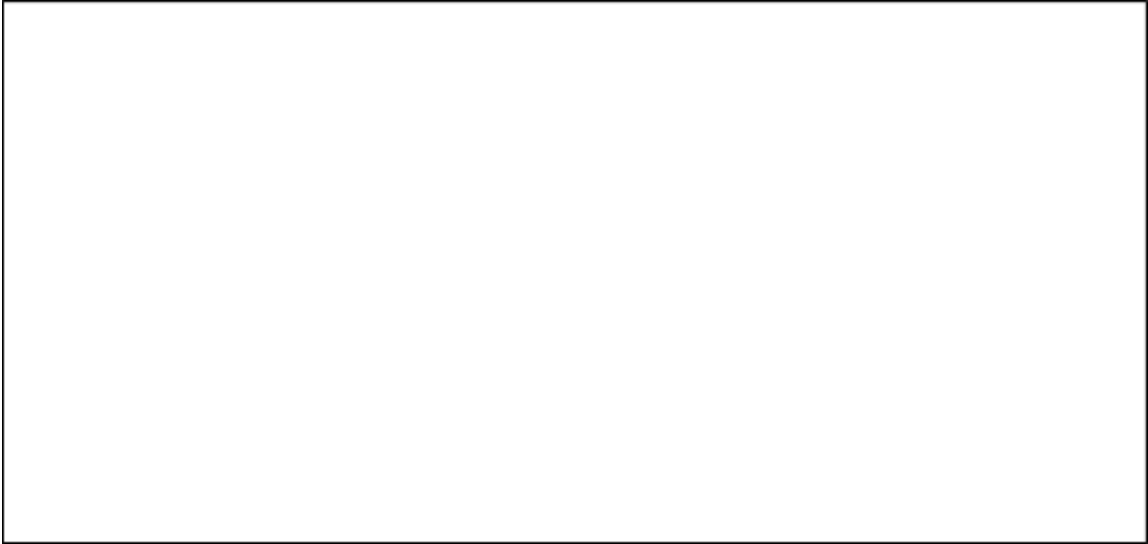
1. Draw a picture of your favorite ride.



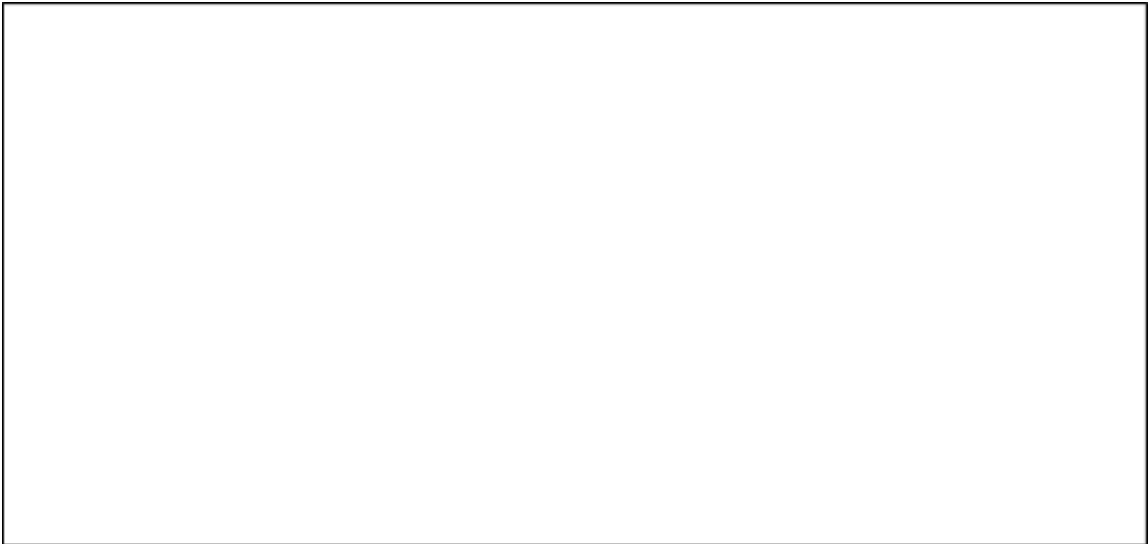
2. Describe your favorite ride and why you love it.

3. What is inertia and when do you experience it?

4. Draw or describe one example engineering you saw.



5. Describe or draw one of the shows you saw.



6. How do engineers use math to design rides?
