

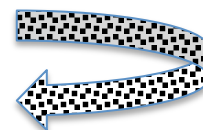
PS2 L3 Extension - Roller Coaster Design

Goal – Use your knowledge of Kinetic and Gravitational Energy to design a roller coaster that is successful and earns a maximum score.

1. One partner will be running the laptop, the other partner will be running the iPad. The iPad person will be doing a fair amount of formatting and typing. Decide right now who is doing what. *Both of you need to read ALL of the directions before you start.*
2. iPad person - Use the document template from the class website documents page to set-up a Notability document for this assignment titled, “your name & partner’s name - L3 Roller Coaster”
3. Laptop person – 4J secure → FireFox → class website → Thursday’s agenda → Roller Coaster Link http://content3.jason.org/resource_content/content/digitallab/4859/misc_content/public/coaster.html
4. Potential Energy = Gravitational Energy
5. Choose “Learn how to craft a super coaster”
6. Read each slide carefully and look at the diagram before moving onto the next slide. The information in the slides will help you be more successful at designing a roller coaster. What do they compare to a roller coaster? Why?
7. Your coaster needs 4 cars, then build your track.
8. Use your iPad to take a photo of your track. Insert it into your Notability Document in the Track Design box for Trial 1. *See the sample photos at the bottom of this document.*
9. Run the coaster! Potential Energy = Gravitational Energy
10. Take and insert a photo of your Energy graph.
11. Take and insert a photo of your score.
12. Write a 1-3 sentence explanation of why your trial was successful or unsuccessful. Make sure you use Science terms.

Ex: The coaster did not make it through the second loop because ...
13. Explain your strategy for the next trial.

Ex: Lower the second loop by ___ meters. This will ... which should
14. After a trial, click the “back” button on the coaster window twice from the score page to return to track building mode. This will let you edit your track instead of rebuilding it each time.
15. Continue doing trials until you have a successful coaster or have completed 5 trials. If you have a successful coaster in less than 5 trials, try to increase your score.
16. One you have a successful coaster, or you have completed 5 trials, click the back button three times to reach the car editing screen. Either reduce the number of cars to one or increase the number of cars to eight. Does your track still work? Explain in the space at the bottom of your iPad document.



Editing your document:

1. Proofread your explanations and strategies. Fix any errors.
2. Crop your photos so they only show the

Sending the document:

1. Create a new mail message.
2. Subject = "your first names, per __ – roller coaster"
3. Attach your document
4. Put "baker_sc@4j.lane.edu" in the "to" line

Sample images – note the sizing and cropping, and that I held the iPad parallel to the laptop screen so the images are mostly rectangular, not trapezoidal.

Trial 42

Track Design



Energy Graph



Score



Explanation:

The roller coaster got stuck in the middle of the track / crashed through the end because ...

Strategy for the next trial:

We will raise/lower the _____ so that the coaster has less/more This should make it so that the coaster