Candidate Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Roller Coaster Physics Intern Sheet**

Data Chart:

|  |  |  |
| --- | --- | --- |
| Feature (Hill or Loop) | Height (cm) from the floor | Width (cm) |
| 1. |  |  |
| 2. |  |  |
| 3. |  |  |
| 4. |  |  |

The total length of my track (once completed) is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ meters.

Sketch of the design: *Sketch your design below. Label where you placed the Potential and Kinetic Energy tabs. If time allows, you should include the measurements of each feature.*

Analysis Questions:

1. Which feature was the tallest in your design? According to what you know about Potential Energy, why is this?
2. Where do you need to add energy into the roller coaster? After the car is released, what force is powering the ride vehicle?
3. On a roller coaster where do you think kinetic energy is the greatest?
4. Explain what happened to potential and kinetic energy as a roller coaster car travels down a hill.
5. Why doesn’t the roller coaster car travel on forever? What force slows the car down as it travels?

CRITICAL THINKING:

How can you apply what you learned in this lab to other cases of potential and kinetic energy transfer? Give at least two examples of objects that would display a back and forth transfer of potential and kinetic energy.