

Unit 3

Investigating Potential and Kinetic Energy

Introduction:

In this investigation, you will investigate the relationship between potential and kinetic energy using some tubing and a marble.

Materials:

Tubing (cut in half to form a trough), a marble, notebook, pencil

Procedure:

With your group, you will construct some 'roller coaster' tracks using the tubing and test them with a marble. For track #1, make the starting point lower than the hill that follows it. For track #2, make the starting point higher than the hill. For track #3, design your own track based on what you have observed. Sketch all tracks and take notes on your observations of the marbles movement.

Questions:

1. What did you notice about the different amounts of potential energy available in each of the tracks? What caused this difference?
2. How did the amount of potential and kinetic energy of the marble change as it traveled along each track?
3. Why did you design track #3 as you did? Describe the questions and ideas that you had that lead to you making the design choices that you did. Did the marble's move as you expected it too? How would you redesign your track based on what you observed?