**SCIPSU08: STUDENT GUIDE**

**PhET Simulation: Energy Skate Park Basics**

Complete the PhET Simulation below and answer question 9 through12.

<https://phet.colorado.edu/sims/html/energy-skate-park-basics/latest/energy-skate-park-basics_en.html>

Directions: Click on “Intro.” When the intro opens, the U shape ramp will be selected; keep it on this one. Click the check boxes to turn on the bar graph, grid, and speed. Notice the toggle bar to change the mass of the skateboarder. Slide it down to the “small” end. Click and drag the skateboarder to place him at the beginning of the ramp, right next to the “6 meters” mark on the grid. The skater will automatically start moving.

The following are the questions you need to answer. Once you have figured these out enter the answers in the question section.

9. Look at the speedometer at the top. What do you notice about the speed when the skater goes from a height of 6m down to 0m and back up to 6m?

10. Look at the energy bar graph on the left. The total energy does not move, as it shows the maximum energy used or stored at any given instant. However, the potential energy and kinetic energy are constantly changing. Why?

11. Change the skater’s mass to the largest setting. What do you notice about the speedometer and the energy bar graph?

12. Click on “Playground” at the bottom of the screen. Drag sections of track (3 red dots with gray line near bottom left) onto the screen and move them around to make a new surface for the skater. Describe the track you made (insert a screenshot if possible) and how the skater moves on it.