Name: ___________________________ Date: ___________________________

Thinking about Graphs

In the example below, three girls launch a toy rocket. The graph on the top shows the distance from the ground the rocket has traveled. The graph on the bottom shows how the speed of the rocket changes as it moves along the path of motion.

1. On the graph, circle the place(s) where the vertical speed was highest/fastest. Draw a box around the place(s) on the graph where the vertical speed was the lowest/slowest.

2. Describe why the kinetic energy is high at this moment in the launch of the rocket.

3. Describe why the potential energy is increasing at this moment in the launch of the rocket.
Patterns of Energy

1. Pull up the video you recorded of two people in your group playing catch. Open the graph drawer for this video. Select the graph for “along path.” Draw the graph for speed in the space below.

2. On the drawing of your graph above, circle the places on the graph where the person was moving the fastest.

3. Next, draw a box around the places on the graph where the person was moving the slowest.

4. Using the feature in the app, place high kinetic energy (KE) and high potential energy (PE) stickers on the appropriate places in the video.

Let’s think more about the patterns you notice related to energy.

5. Describe where in the path of motion the swinger’s kinetic energy is highest.
   (Hint: This probably happens more than once.)
ENERGY: SWINGING – PART III

6. Describe where in the path of motion the person swinging is moving the fastest. (Hint: This probably happens more than once.)

7. Describe where in the path of motion the swinger’s potential energy is highest. (Hint: This probably happens more than once.)

8. Describe where in the path of motion is the person’s height from the ground is the highest. (Hint: This probably happens more than once.)

9. Use the space below to describe the overall patterns in the energy of the person swinging. Make sure to talk about how speed and vertical distance from the ground influences potential and kinetic energy.