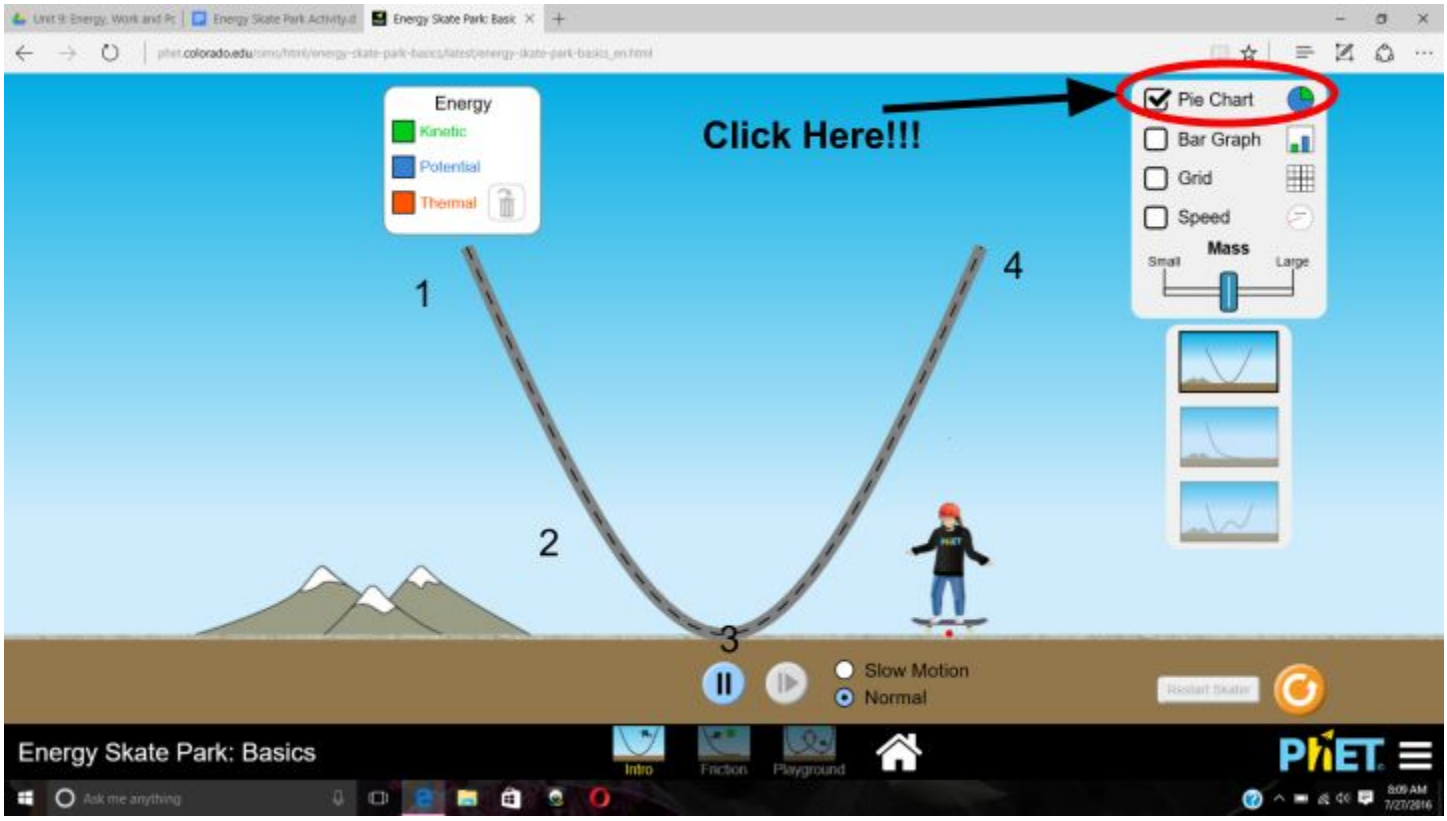
Energy Skate Park Activity Questions

Directions:

- Type in the following link.
  - https://goo.gl/d9eiBp

- Click the **play button** when the link opens
- Select **Intro**
- **Sketch the skate ramp** that in on the screen when you open the program. **Includeing the numbers** in the picture provided
- On the right hand side **click the pie chart box.**
  - A color key should show up on the left as shown below.



Questions: Answer these in your notebook under the sketch.

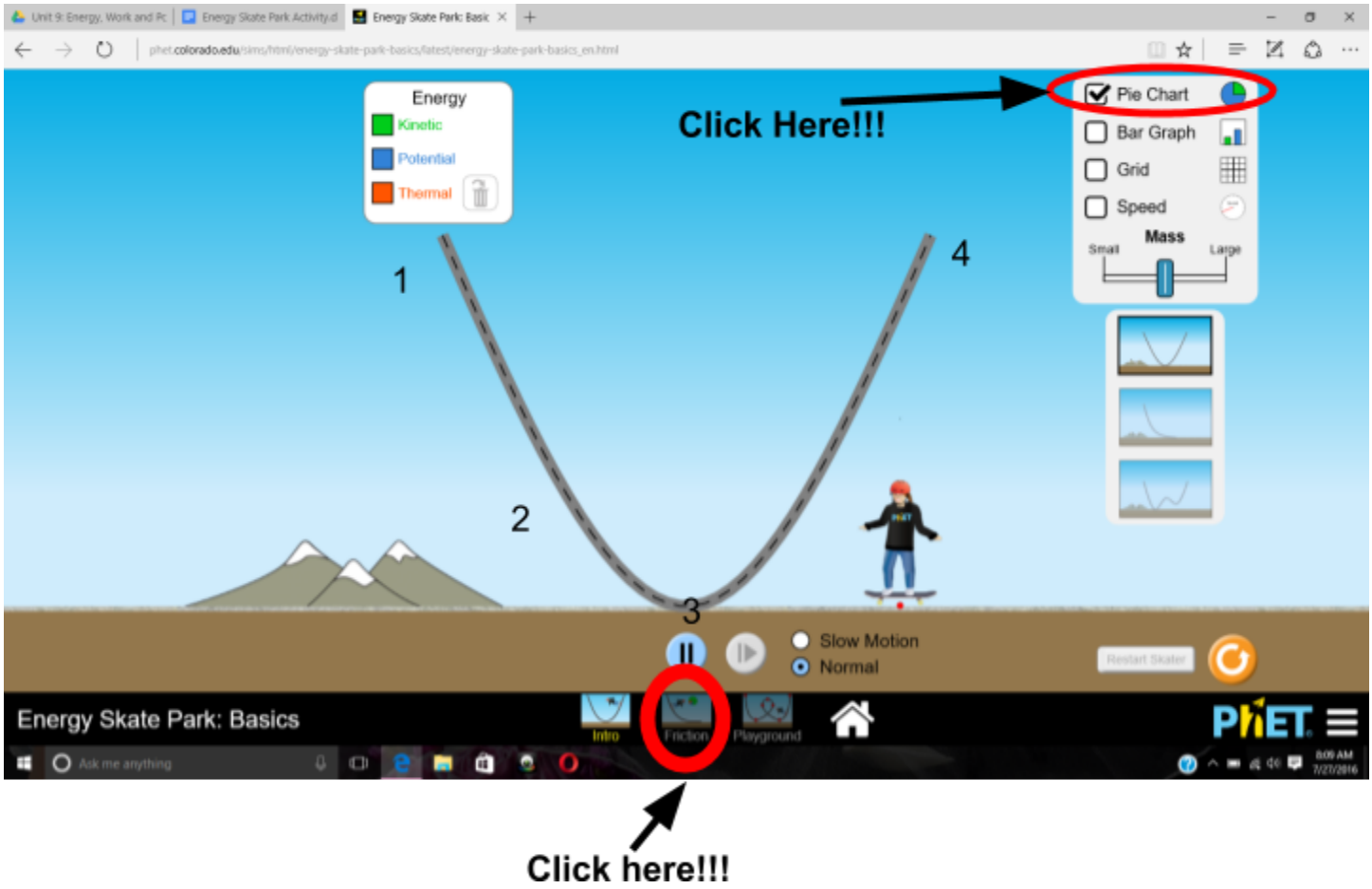
1. What types of energies are shown in the color key?

2. Place the skater at the top of the ramp. Observe the pie charts at each number identified on the ramp and **sketch the pie charts for each point.**
   a. you can **pause** the skater at those points to get better pie charts.

3. What type of energy is left out of every pie chart? Why?

Part 2: Friction

Directions:
- Click on the picture in the middle at the very bottom labeled friction.
- Sketch the ramp again and lable the smae points.



Questions: Answer these in your notebook!

4. Make a prediction of how the pie charts in question 2 will change when friction is added. Draw the pie charts as a part of your prediction.

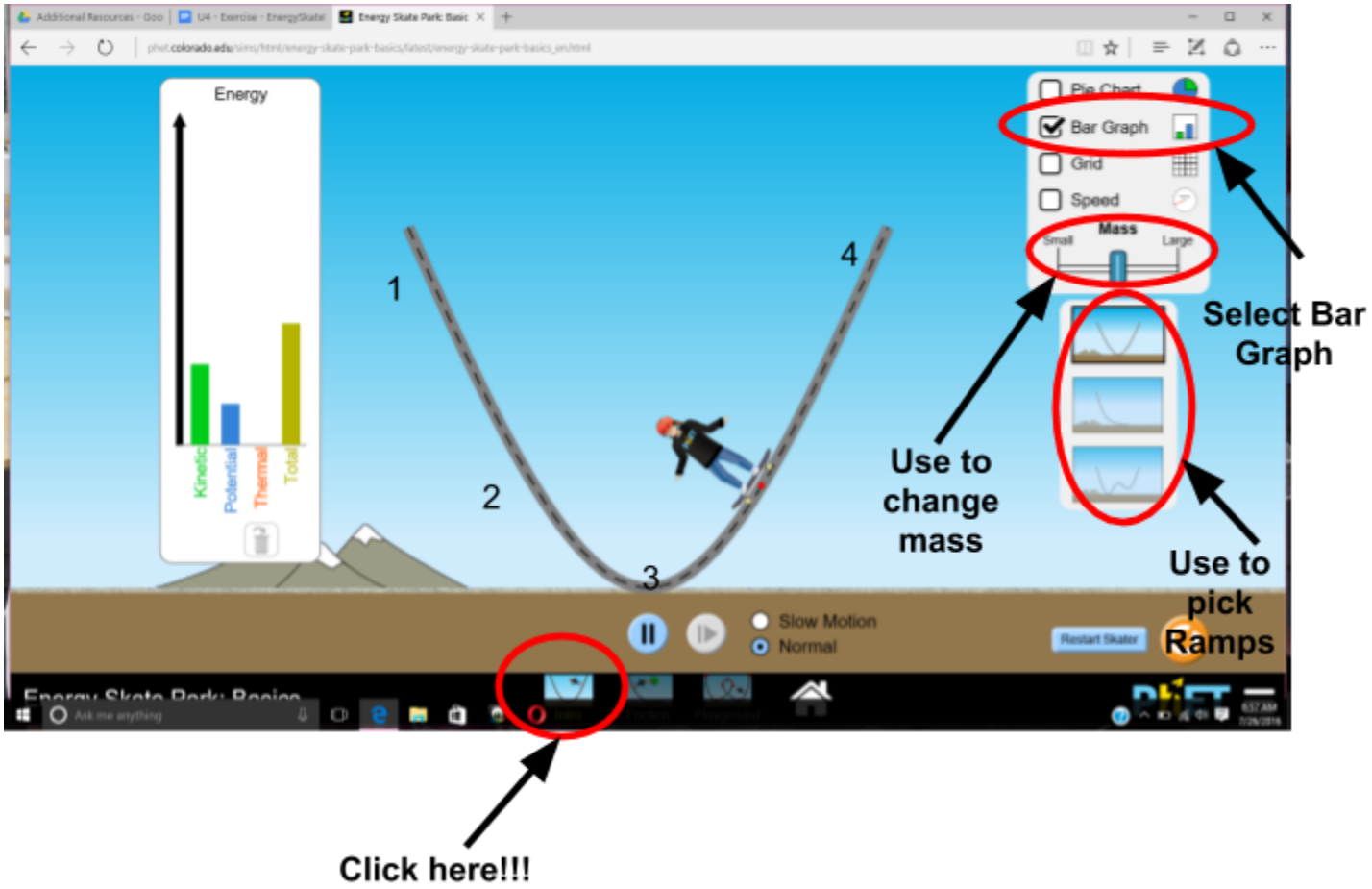
5. Now place the skater on the ramp and let him run. **Sketch the actual pie graphs.**

6. How do your predictions compare to the actual graphs? What is the major difference that friction makes?

Part 3:

Directions:

- Select the bar graph option on the right. A bar graph should show up like in the image below.
- Turn off Friction by selecting the intro picture on the bottom of the screen.



Questions: Answer in your notebook!!!

1. Allow the skater to run through several different ramps.
    a. What happens to the total amount of energy in bar graphs at every point in the skaters path(you can use different types of ramps if you want to check)?
    b. Is this shown in the pie charts? If so how?

2. What can you conclude about the total amount of energy in a based on the bar graphs?

3. What happens to the total amount of energy of the skater when he starts at a higher position on the ramp?

4. What happens to the gravitational energy of the skater when he is lifted from the ground to the top of the ramp?

5. Put the skater at the top of the ramp. **Adjust the skaters mass making it as small and as large as you can**.
    a. What changes do you notice in the bar graph?

6. What conclusions can you make about energy and mass?
7. What conclusions can you make about height and Gravitational Potential energy?