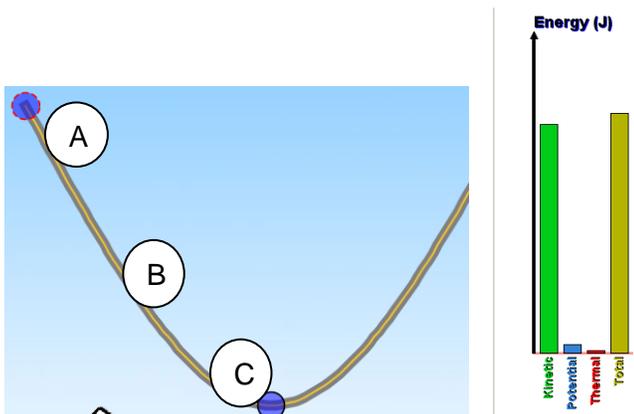


Look at the dog (*) and the bar graph (*).

- When the dog starts to move again, what will happen to the **kinetic energy (KE)** bar on the graph?
 - KE will increase/go higher- because the dog continues to move faster going down the hill.
 - KE will decrease/go lower -because the dog is slowing down.
 - KE will stay the same -because kinetic energy always equals potential energy

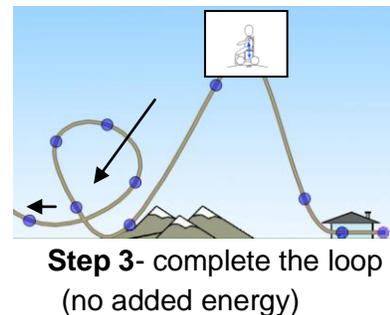
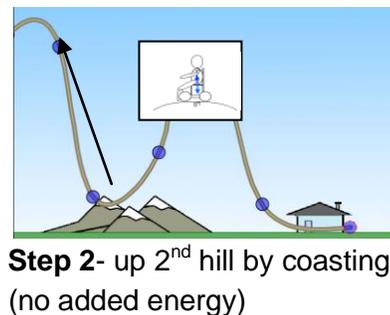
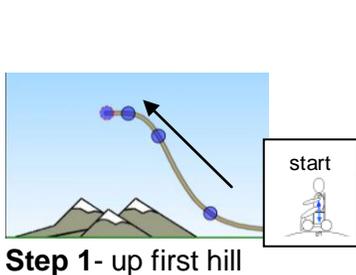


Look at the positions labeled on the track and the bar graph information:
(circle your answer)

- The bar graph matches _____ best.
Position A. **Position B.** **Position C.**
- Friction is shown in this system.
yes **no** **not enough information**

3. For a science fair project, you and a friend decide to order a kit to build a roller coaster. It is smaller than a real roller coaster, but you and your friends will be able to ride on it! When your kit arrives at your house you begin work on the instructions.

- The first instruction is to watch a video and build the coaster on your computer as a model for the real roller coaster.
- Your first three steps of your computer design look like this:



- You show your computer model to the teacher.

Mechanical Energy Explorations with [Energy Skatepark](#)

Author: Jackie Esler

- Your science teacher loves your project!! She would like you to answer the following questions to explain your thinking.

1. Looking at Step 1- How can you get the coaster-car from start to the top of the first hill?

2: Looking at Step 2- If you want to get the car over the second hill just by coasting, what must you do in your design?

3: Looking at Step 3-The loop in your designed is really cool! Why do you think the coaster will be able to move through the loop and continue down the track?



After the simulation, you and a partner **will** build a marble roller coaster.

Sorry, it will only be big enough for a "marble passenger", but it is still fun to build!

Before we build in class, you can go back to the skate-park simulation and build your own track. Be sure to "save" it so you can share with the class.