

Construct a roller coaster that will get the marble from the beginning to the end with constant motion using the following supplies:

- **Tape**
- **Scissors**
- **Marble**
- **Foam(hollow black things in 208)**
- **Cup (to catch the marble at the end of the ride)**

- 1. Draw a picture of how your roller coaster looks when it is first put together.**

2. Draw a picture of how your roller coaster looks when the marble can move from the beginning to the end with constant motion. Label where the change between kinetic and potential energy takes place.

3. Did the first model you made work properly? (the marble moved from beginning to end without stopping) Why or why not?

4. If it didn't work properly, what changes had to be made to get the roller coaster to work properly?

Alternate worksheet addition

5. Did the roller coaster work when you combined all of the roller coasters together? Why or why not?

6. What changes, if any, had to be made when combining all the roller coasters? Did one group have to shorten or lengthen their roller coaster? Remove or add more loops?

PHET Skate Park Demo:

7. When you shortened one end of the ramp, what happened to the skater?

8. When you made the angle of the ramp steeper, what happened to the skater?

9. How did the skate ramp look when you were able to keep the skater moving in constant motion without falling off the ramp?

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