

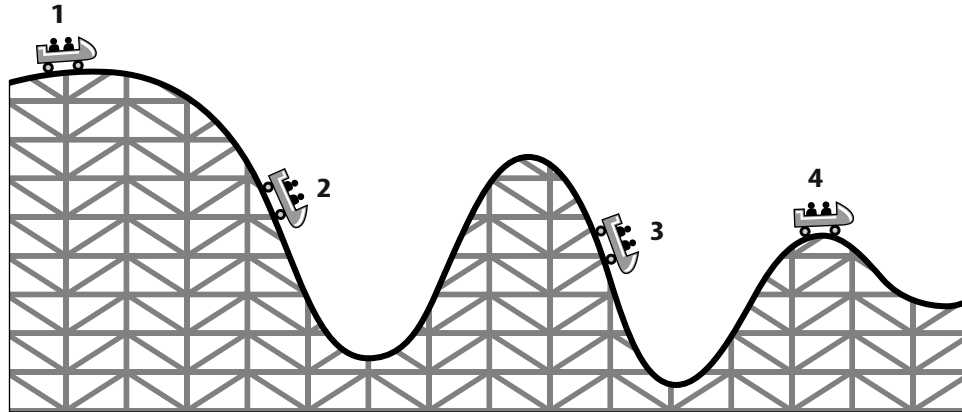
Activity

18 Understanding a Concept

ELA7: R1.3, R2.5

ELA8: R1.3, R2.5

Directions: Examine the diagram and read the description that follows. Then answer the questions.



Roller coasters are among the most popular amusement park rides. They are exhilarating and thrilling to the people who ride them. How a roller coaster works is quite simple.

1. Almost all roller coasters start by going up a hill. The coaster is pulled up the hill by a moving chain. A motor provides the energy for the moving chain. The energy from the motor is transferred to the coaster.
2. At the top of the hill, the coaster has stored energy. It has the most stored energy on the first hill. As the coaster goes over the top of the hill, the chain is released and the coaster falls freely on the tracks.
3. As the coaster moves rapidly down the first hill, its stored energy changes into energy of motion, or kinetic energy. It has kinetic energy because it is moving. This kinetic energy carries it to the top of the next hill.
4. The kinetic energy is converted back into stored energy when the coaster reaches the top of the second hill. As it goes down the second hill, the stored energy is again changed into kinetic energy. This happens over and over on each hill until the coaster reaches the station and is stopped by the coaster's operator.

Note: Each hill of a roller coaster must be smaller than the one before it for the coaster to have enough energy to make it over all of the hills. The coaster loses some of its energy between hills because of track friction and air resistance.

Multiple Choice

1. Which number on the diagram shows the roller coaster at the point where it has the most stored energy?
 - a. 1
 - b. 2
 - c. 3
 - d. 4

Activity 18 (continued)**Multiple
Choice**

2. Which statement from the passage is an opinion?
 - a. A motor provides the energy for the moving chain.
 - b. Almost all roller coasters start by going up a hill.
 - c. They are exhilarating and thrilling to the people who ride them.
 - d. The energy from the motor is transferred to the coaster.
3. Where would you be most likely to find this passage?
 - a. in a chemistry book
 - b. in an almanac
 - c. in a physics book
 - d. in a dictionary
4. What is the meaning of the word *friction* in the note at the end of the passage?
 - a. floating
 - b. rubbing
 - c. slipping
 - d. gliding
5. Name two places you could look to find information on kinetic and stored energy.
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**Short
Answer**

6. Predict what would happen if the third hill on a roller coaster ride were bigger than the first hill. Explain your answer.
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