

Name \_\_\_\_\_

Date \_\_\_\_\_ Pd \_\_\_\_\_

## 55.1 Roller Coasters

**Gravitational Potential (stored) Energy: The energy of an object due to its position.** An example would be a roller coaster car. The car has potential energy at the top of the hill because it has the potential to roll to the bottom. At the bottom of the hill, energy from an outside source must be added to make the car roll. The greater the distance an object may fall; the greater potential energy it would have.

**Kinetic (motion) Energy: The energy of object due to motion.** Another example would be a roller coaster car. As the car rolls down the track, it has kinetic energy. The faster the object moves, the more kinetic energy it has.

An object may have both potential and kinetic energy at the same time and one can be converted to the other!



*\* the roller coaster above is moving from right to left*

1. Indicate on the picture above where you would most likely find the following amounts and types of energy. Write the letter on the picture.
  - A. Point of least potential energy
  - B. Point of greatest potential energy
  - C. Point of least kinetic energy
  - D. Point of greatest kinetic energy

2. On a roller coaster, there is a motor driven chain that the cars attach to that pull the car up the first hill. What would eventually happen if the cars were allowed to roll down the first hill and no further mechanical energy were added?

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3. What would cause this to happen?

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4. What types of energy would the motion of the cars be converted to (other than Potential Energy again)?

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