

Name: _____

Potential & Kinetic Energy

Part I. Identify the energy in each statement as kinetic OR potential.

- 1) Kinetic A mouse running away from a cat.
- 2) Potential A rock sitting on top of a hill.
- 3) Potential A bird resting on its nest in a tree.
- 4) Kinetic A car driving down Winchester Rd.
- 5) Kinetic A bowling ball rolling down the lane.

Part II. Use the words kinetic OR potential to fill in the blanks below.

When a pecan pie is resting on a windowsill, all of its energy is Potential energy; it has no Kinetic energy because it is not moving. However, accidentally, the pecan pie was pushed off the windowsill and is falling through the air. At that time, the amount of Potential energy is decreasing while the amount of Kinetic energy is increasing as the pecan pie picks up speed. Right before the pecan pie hits the ground, all of its energy is in Kinetic energy. It does not have any Potential energy because the pecan pie does not have any height above the ground.

Part III. Remember that kinetic energy depends on mass and speed

* Remember that mass depends on the weight of an object and also how big it is

- 1) A bowling ball and a soccer ball are both rolling at the same speed. Which has more kinetic energy?
Bowling ball - greater mass
- 2) A rock and a feather are dropped from the top of a building. Which has more kinetic energy?
Rock - greater mass
- 3) The same baseball is thrown two different times. The second throw is faster than the first throw. Which has more kinetic energy?
The second throw - faster speed
- 4) A car drives 45 miles per hour down Winchester Rd. It then drives 65 miles per hour down the highway. At which time does the car have more kinetic energy?
When it travels 65 mph on the highway.

Part III. Identify the potential energy in each statement as gravitational, elastic, or chemical.

- 1) A book sitting on top of a bookshelf has gravitational potential potential energy.
- 2) A rubber band that has been stretched has elastic potential energy.
- 3) Your hot pocket at lunch has chemical potential energy.
- 4) An apple hanging from a tree has gravitational potential energy.

Part V. Remember that gravitational potential energy depends on weight and height.

- 1) A heavy textbook and a light book sit on the edge of your desk. Which has more gravitational potential energy?
Heavy textbook
- 2) An apple hangs from the lowermost branch on a tree. Another apple hangs from the top. Which has more gravitational potential energy?
The higher apple
- 3) A small rubber bouncy ball and a bowling ball are about to be dropped from the same height. Which has more gravitational potential energy?
Bowling ball → greater mass