

NAME _____

WHAT DO YOU KNOW ABOUT ENERGY?

This unit is all about energy. Share what you know about how energy works.

- 1 What is potential energy?**

 - A** How fast an object can move
 - B** The force that makes an object move
 - C** The unused energy stored in an unmoving object
 - D** All of the above
- 2 The potential energy of a car at the top of a ramp is affected by:**

 - A** The car's shape.
 - B** The height of the ramp.
 - C** The car's speed.
 - D** The length of the ramp
- 3 The force of gravity _____**

 - A** pushes objects away from Earth.
 - B** slows objects down.
 - C** causes objects to be pulled in two different directions.
 - D** pulls objects downward toward Earth.
- 4 True or false? Two objects with the same mass sitting at different heights have the same potential energy.**

 - A** True **B** False
- 5 What is kinetic energy?**

 - A** The energy of an object in motion
 - B** The energy in machines
 - C** The energy stored in unmoving objects
 - D** None of the above
- 6 True or false? You can influence an object's kinetic energy by changing its mass.**

 - A** True **B** False
- 7 What are two factors in kinetic energy?**

 - A** Height and gravity
 - B** Gravity and speed
 - C** Speed and mass
 - D** Mass and height
- 8 What is friction?**

 - A** An oppositional force
 - B** The resistance that one surface experiences when moving over another
 - C** The pull of gravity
 - D** Both A and B
 - E** None of the above
- 9 What type of energy is created when two surfaces rub against each other?**

 - A** Light
 - B** Heat
 - C** Sound
 - D** All of the above
- 10 Why are the rules of energy important to racing?**

 - A** Because potential and kinetic energy help determine how quickly a race car will go
 - B** Because potential and kinetic energy help determine how much fuel a race car will need to complete a race
 - C** Because adjusting the factors that contribute to potential and kinetic energy can help a race car go faster
 - D** All of the above

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WHAT DID YOU LEARN ABOUT HOW ENERGY WORKS?

Share what you know about the influence of energy on the objects in the world around us.

- 1** The energy stored in an object due to its position or condition is known as _____.

 - A** kinetic energy
 - B** potential energy
 - C** friction
 - D** all of the above
- 2** Mass, gravity, and height are the variables that shape _____.

 - A** speed
 - B** friction
 - C** kinetic energy
 - D** potential energy
- 3** Increasing an object's _____ will increase its potential energy.

 - A** girth
 - B** force
 - C** width
 - D** mass
- 4** Imagine two objects of the same mass sitting on a bookshelf. If you take one of them and move it to a lower shelf, you have _____.

 - A** increased its potential energy
 - B** decreased its potential energy
 - C** caused no change in its potential energy
 - D** removed all energy from the object
- 5** The energy of an object in motion is known as _____.

 - A** potential energy
 - B** kinetic energy
 - C** mechanical energy
 - D** nuclear energy
- 6** Speed and _____ are the factors that affect kinetic energy.

 - A** height
 - B** gravity
 - C** mass
 - D** temperature
- 7** True or false? Imagine a delivery truck is driving down the road and suddenly it loses half of its load. The truck's kinetic energy has decreased.

A True **B** False
- 8** The resistance that occurs when one surface rubs against another is called _____.

 - A** friction
 - B** free energy
 - C** gravity
 - D** acceleration
- 9** A race car's brake rotors often glow red because friction generates _____.

 - A** kinetic energy
 - B** heat
 - C** potential energy
 - D** acceleration
- 10** Knowing about potential and kinetic energy helps race car engineers _____.

 - A** understand how the two are related
 - B** design cars that go faster
 - C** reduce the effects of friction
 - D** all of the above