

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

NAME \_\_\_\_\_

## 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