

**Key Concept Builder** 

**LESSON 1**

# Forms of Energy

**Key Concept** What is energy?

**Directions:** Put a check mark on the line before each example of a change caused by energy.

- \_\_\_\_\_ 1. a fireworks show
  
- \_\_\_\_\_ 2. a child growing
  
- \_\_\_\_\_ 3. a ball on the ground
  
- \_\_\_\_\_ 4. a plant making food from the Sun
  
- \_\_\_\_\_ 5. a car starting
  
- \_\_\_\_\_ 6. a bat hitting a ball
  
- \_\_\_\_\_ 7. an oven heating up

**Directions:** Respond to the statement on the lines provided.

**8. Describe** the effects of energy in your school and community.

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**Key Concept** What are potential and kinetic energy?

**Directions:** Circle the object in each pair that has the most kinetic energy.

1. a moving car **OR** a parked car
2. a fast-moving soccer ball **OR** a slow-moving soccer ball
3. a 1,500-kg car traveling 20 m/s **OR** a 1,500-kg car traveling 30 m/s
4. a 1,500-kg car traveling 15 m/s **OR** a 2,000-kg car traveling 15 m/s

**Directions:** Answer each question or respond to each statement on the lines provided.

5. **Explain** how you decided which objects above to circle.

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6. What is the difference between kinetic energy and potential energy?

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7. How could you increase an object's gravitational potential energy?

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8. Two objects are at the same height, but one has more gravitational potential energy. What else can you tell about the two objects?

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9. **Name** two types of actions that can result in an object storing elastic potential energy.

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**Key Concept** How is energy related to work?

**Directions:** On the line before each statement, write T if the statement is true or F if the statement is false. If the statement is false, change the underlined word(s) to make it true. Write your changes on the lines provided.

- \_\_\_\_\_ 1. When you lift an object, you do work on the object.  
\_\_\_\_\_
- \_\_\_\_\_ 2. When you lift an object higher, you decrease its gravitational potential energy.  
\_\_\_\_\_
- \_\_\_\_\_ 3. Work is the transfer of energy that occurs when a force is applied over a distance. \_\_\_\_\_
- \_\_\_\_\_ 4. An object that has energy can do work. \_\_\_\_\_
- \_\_\_\_\_ 5. When you lift an object, energy is transferred from the object to you.  
\_\_\_\_\_
- \_\_\_\_\_ 6. Energy is the ability to do work. \_\_\_\_\_
- \_\_\_\_\_ 7. When a bowling ball hits bowling pins, the pins transfer kinetic energy to the ball. \_\_\_\_\_
- \_\_\_\_\_ 8. A ball rolling down a hill has increasing potential energy.  
\_\_\_\_\_
- \_\_\_\_\_ 9. When you push a shopping cart, you transfer energy to it.  
\_\_\_\_\_
- \_\_\_\_\_ 10. A child climbing a ladder is transforming kinetic energy into potential energy.  
\_\_\_\_\_
- \_\_\_\_\_ 11. The child climbing the ladder is doing work. \_\_\_\_\_
- \_\_\_\_\_ 12. When a pool ball hits another ball and causes it to move, potential energy has transferred from one ball to the other. \_\_\_\_\_

**Key Concept Builder** **LESSON 1****Forms of Energy****Key Concept** What are different forms of energy?**Directions:** On each line, write the term from the word bank that matches the description correctly. Some terms may be used more than once, but only one term may be used per line.**electrical      mechanical      nuclear      radiant      sound      thermal**

1. shooting a basketball \_\_\_\_\_
2. the total of the potential energy and kinetic energy in an object or group of objects  
\_\_\_\_\_
3. a phone ringing \_\_\_\_\_
4. the energy of moving atoms \_\_\_\_\_
5. Light is an example. \_\_\_\_\_
6. energy given off by the Sun \_\_\_\_\_
7. carried by an electric current \_\_\_\_\_
8. Microwaves are an example. \_\_\_\_\_
9. Heat is the movement of this type of energy. \_\_\_\_\_
10. energy that is stored in the nucleus of an atom \_\_\_\_\_
11. a radio playing \_\_\_\_\_
12. an ocean wave \_\_\_\_\_
13. a microwave heating food \_\_\_\_\_