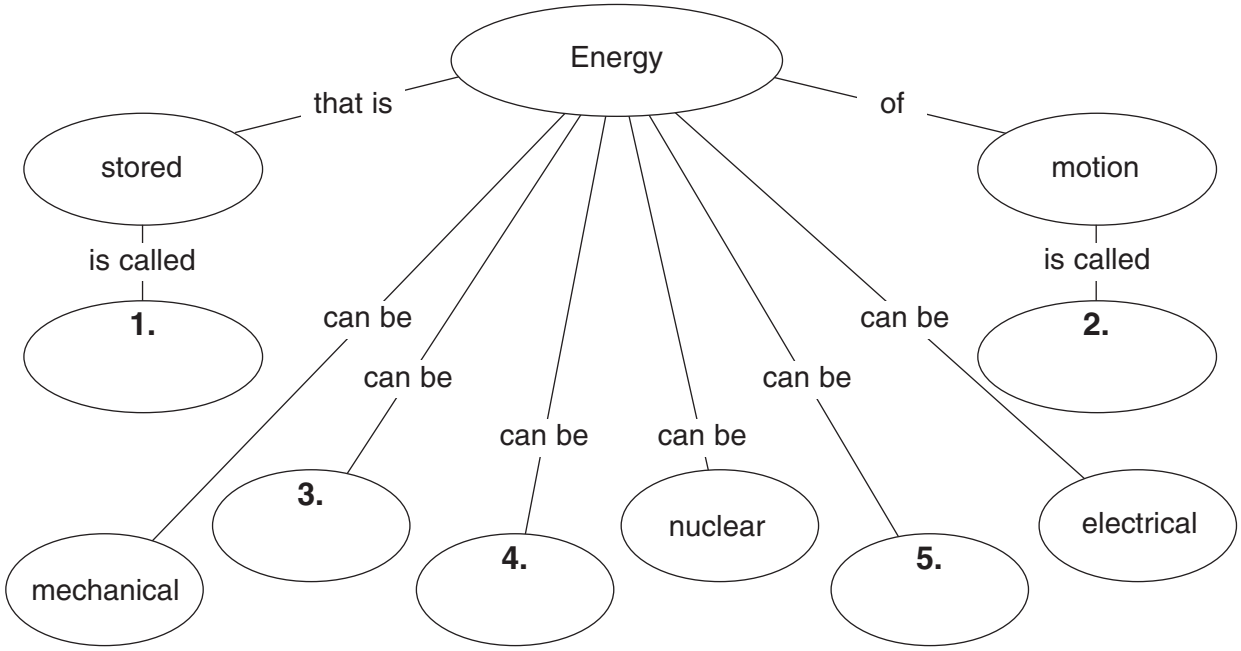
Directed Reading for Content Mastery

Overview Energy

Directions: *Complete the concept map using the terms listed below.*

kinetic **heat** **light** **potential** **chemical**



Directions: *Match the description in the first column with the item in the second column by writing the correct letter in the space provided.*

_____ **6.** the transfer of energy by collisions between the atoms in the material

_____ **7.** a measure of the average kinetic energy of the atoms in an object

_____ **8.** Energy is released.

_____ **9.** Energy must be added.

_____ **10.** a transfer of energy from one object to another due to a difference in temperature

_____ **11.** Compounds are broken down, new compounds are formed, or both.

a. heat

b. chemical reaction

c. conduction

d. when bonds form

e. to break bonds

f. temperature

Meeting Individual Needs

Name Date Class

Directed Reading for Content Mastery

Section 2 ▪ Temperature
Section 3 ▪ Chemical Energy

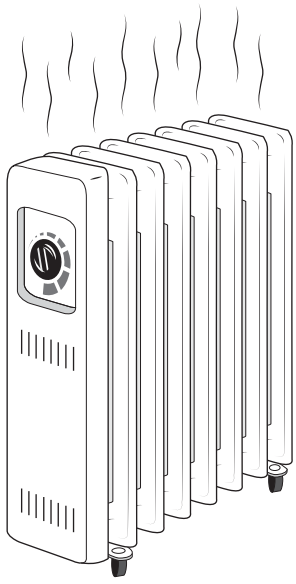
Directions: *Circle the term in parentheses that correctly completes the sentence.*

1. (Chemical energy/Conduction) is the transfer of energy by collisions between the atoms in a material.
2. An energy transfer that causes a temperature change is (heat/insulation).
3. (Chemical/Convection) energy is the energy stored in the chemical bonds of a substance.
4. (Radiation/Convection) transfers heat when particles move from one place to another.
5. The transfer of energy by waves in all directions from its source is (conduction/radiation).

Directions: *Study the following illustrations. Then label each one using the correct terms from the list below.*

conduction **convection** **radiation**

6. _____



7. _____

8. _____

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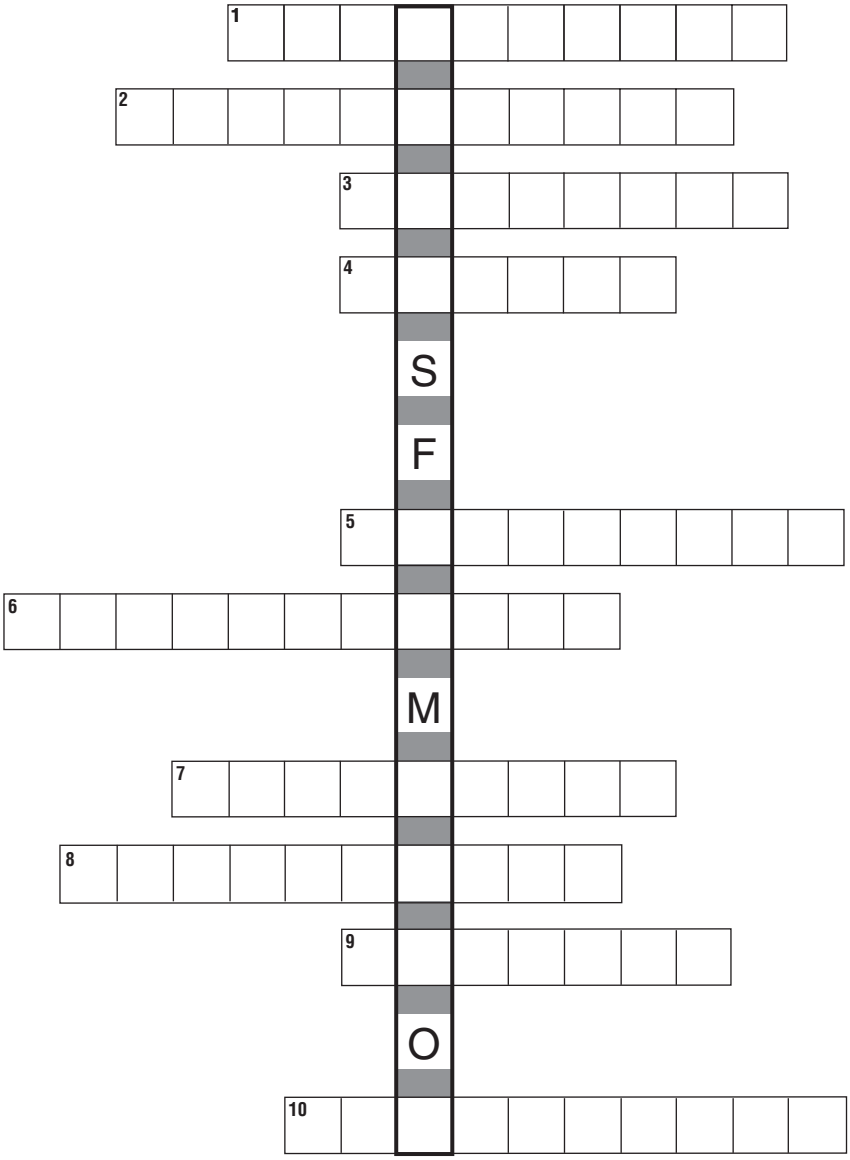
Directed Reading for Content Mastery

Key Terms
Energy

Directions: *Write the term that matches each description below in the spaces provided. The letters in the dark, vertical boxes will spell a familiar word related to energy.*



1. chemical reactions that release energy
2. measure of the average kinetic energy of the atoms in an object
3. substance that changes the rate of a chemical reaction without any change to its own structure
4. the ability to cause change
5. stored energy
6. chemical reactions that absorb energy
7. the transfer of energy by waves
8. transfer of energy from one particle to another
9. energy of objects in motion
10. transfer of energy by movement of particles

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SECTION 3 Reinforcement

Chemical Energy

Directions: *Complete the following sentences using the correct terms and phrases.*

1. Chemical _____ stored in oil, gas, and coal is used everyday.
2. Scientists refer to the potential energy within chemical bonds as _____.
3. Energy is stored in the _____ between the atoms in a compound.
4. Muscles in your body transform chemical energy into _____ and heat when they move.
5. In chemical reactions, chemical bonds _____ between some particles and _____ between other particles.
6. Chemical reactions that absorb energy are called _____.
7. A photosynthetic reaction in a plant cell transforming energy from sunlight into chemical energy is a(n) _____ chemical reaction.
8. Living things depend on _____ for food and oxygen.
9. Exothermic reactions are chemical reactions that _____ energy.
10. Rates of chemical reactions can be changed by a substance called a(n) _____, whose own structure is not changed by the reaction.
11. Greater amounts of sugar will dissolve in water if the water is _____.
12. Your body relies on biological catalysts called _____ to control cell processes.

Directions: *For each of the following statements, write* **True** *or* **False** *on the line provided.*

_____ **13.** In a chemical reaction, the state of a substance changes, but the substance itself is not changed.

_____ **14.** Rusting is a chemical reaction that occurs when a metal combines with oxygen.

_____ **15.** All chemical reactions occur at the same rate.

_____ **16.** Every chemical reaction includes some energy transformation.

_____ **17.** Not every chemical reaction gives off energy.

Meeting Individual Needs