7. A
8. B
9. C
10. A
11. B
12. nuclear fission
13. thermal
14. uranium
15. B
16. A
17. C
18. D
19. C
20. B
21. A
22. B
23. A
24. B

Vocabulary and Section Summary

SECTION: WHAT IS ENERGY?

1. energy: the capacity to do work
2. kinetic energy: the energy of an object that is due to the object's motion
3. potential energy: the energy that an object has because of the position, shape, or condition of the object
4. mechanical energy: the amount of work an object can do because of the object's kinetic and potential energies

SECTION: ENERGY CONVERSIONS

1. energy conversion: a change from one form of energy to another

SECTION: CONSERVATION OF ENERGY

1. friction: a force that opposes motion between two surfaces that are in contact
2. law of conservation of energy: the law that states that energy cannot be created or destroyed but can be changed from one form to another

SECTION: ENERGY RESOURCES

1. nonrenewable resource: a resource that forms at a rate that is much slower than the rate at which it is consumed
2. fossil fuel: a nonrenewable energy resource formed from the remains of organisms that lived long ago
3. renewable resource: a natural resource that can be replaced at the same rate at which the resource is consumed

Section Review

SECTION: WHAT IS ENERGY?

1. Sample answer: Energy is the ability to do work.
2. Sample answer: Mechanical energy can consist of kinetic energy, potential energy, or both.
3. A
4. Energy is the ability to do work.
5. weight and height
6. It depends on the position of atoms in a molecule.
7. Kinetic energy is used to nail the hammer into the board, and that energy becomes thermal energy.
8. A vehicle moving at high speed has a lot more kinetic energy than a vehicle moving at low speed does, so the high-speed vehicle is able to cause more damage in a collision.
9. potential energy

SECTION: ENERGY CONVERSIONS

1. Sample answer: a change from one kind of energy to another
2. B
3. Sample answer: a space heater, whose heating coils are given thermal energy from electrical energy when the heater is plugged in
4. Your body gets its energy from chemical energy found in food.
5. Machines can convert energy into more useful forms of energy.
6. The potential energy of a basketball is at a maximum when the ball is at its greatest height. The potential energy becomes converted to kinetic energy as the ball falls to the ground, and kinetic energy is at a maximum as the ball reaches the ground. When the ball bounces back up again, its kinetic energy is once again converted into potential energy, and so on.
7. No, the sound produced by screeching brakes is not a useful form of energy, because it does not contribute to stopping the car.
8. potential energy
9. It is converted to kinetic energy.

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