

Name: _____

Date: _____

1.

_____ energy is produced when a force causes a substance to vibrate, and the energy is transferred through the substance in a wave.

- A. Heat
 - B. Light
 - C. Mechanical
 - D. Sound
-

2. **The energy used to move most bicycles is an example of what type of energy?**

- A. Electrical
- B. Mechanical
- C. Chemical
- D. Nuclear

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3. On a hot day, Jenny walked home from the grocery store with a bag of chocolate chips. When she arrived home the chocolate chips had melted in the bag.

Why did the chocolate chips melt?

- A. Heat transferred from the chocolate chips to the bag.
- B. Heat evaporated from the bag to the chocolate chips.
- C. Heat transferred from the environment to the chocolate chips.
- D. Heat condensed from her hand to the chocolate chips.

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4. Beaker X contains 100 milliliters of water and Beaker Y contains 250 milliliters of water. Each beaker is heated on a hot plate at the same medium heat setting for five minutes. Which is the **best** prediction of the water temperature in the beakers?

- A. Beaker X will have the highest temperature.
 - B. Beaker Y will have the highest temperature.
 - C. Beaker X and Beaker Y will have the same temperature.
 - D. Beaker Y will have a temperature of 150°F.
-

5. Two jars are placed inside an insulated box. One jar contains ice water and the other contains hot soup. What will happen to the two liquids?

- A. Both the hot soup and the ice water will gain heat.
 - B. Both the hot soup and the ice water will lose heat.
 - C. The hot soup will gain heat and the ice water will lose heat.
 - D. The hot soup will lose heat and the ice water will gain heat.
-

6. A glass of water kept at room temperature long enough will become empty because

- A. water molecules slowly leak through the walls of the glass.
 - B. water molecules move into the air as gas molecules.
 - C. water left in a glass starts to boil and becomes a gas.
 - D. water slowly combines with oxygen to become carbon dioxide.
-

7. The bulb of a thermometer is placed in your mouth. Which of the following explains why the level of the liquid rises in the thermometer?

- A. Hot air rises inside the thermometer.
 - B. Heat energy changes into light energy.
 - C. The liquid expands when heated.
 - D. Heat can change a solid into a liquid.
-

8. Suppose you had four spoons the same size and shape made out of glass, plastic, steel, and wood. Which spoon handle would get hot the quickest when the spoons are placed in a pan of hot water?

- A. the glass spoon
 - B. the plastic spoon
 - C. the steel spoon
 - D. the wooden spoon
-

9. When water boils in a pan on a hot burner, heat gets to the water mainly by

- A. conduction of heat through the pan.
 - B. radiation of heat through the pan.
 - C. reflection of heat from the burner.
 - D. absorption of heat from the air in the room.
-

10. When ice cream is left out of the freezer on a table for a long time, it melts. This change in state is caused by the

- A. ice cream absorbing heat.
 - B. ice cream giving up heat.
 - C. air absorbing heat.
 - D. table absorbing heat.
-

11. Burt's mother asked him to use a spoon to stir the stew that was cooking on the stove. Which spoon will stay the coolest while he stirs?

- A. an iron spoon
 - B. an aluminum spoon
 - C. a wooden spoon
 - D. a silver spoon
-

12. Through which of the following materials does heat travel the fastest?

- A. glass
 - B. metal
 - C. plastic
 - D. wood
-

13. Which of the following **best** explains why the end of a spoon sticking out of a cup of hot water also gets hot?

- A. The hot water causes a chemical reaction to take place in the spoon.
 - B. The heat from the hot water is conducted to the spoon handle.
 - C. The hot water heats the air surrounding the upper part of the spoon.
 - D. The hot water causes a physical change in the spoon handle.
-

14. A block of ice on a glass plate is put on a metal shelf in a freezer. Which could cause the ice to change to liquid water?

- A. putting a fan that blows on the ice inside the closed freezer
 - B. raising the temperature inside the freezer
 - C. wrapping a blanket around the ice inside the freezer
 - D. putting the ice directly on the metal shelf inside the freezer
-

15. Juan thinks that water will evaporate faster in a warm place than in a cool one. He has two identical bowls and a bucket of water. He wants to do an experiment to find out if he is correct. Which one of the following should he do?

- A. Place a bowl of water in a cool place and a bowl holding the same amount of water in a warm place.
 - B. Place two bowls holding the same amount of water in a warm place.
 - C. Place a bowl of water in a cool place and a bowl holding twice as much water in a warm place.
 - D. Place a bowl of water in a cool place and a bowl holding half as much water in a warm place.
-

16. In which state of matter are molecules in contact with each other but free to move around?

- A. solid
 - B. liquid
 - C. gas
 - D. plasma
-

17. What is the process by which heat energy gets to Earth from the Sun?

- A. conduction
 - B. radiation
 - C. subduction
 - D. convection
-

18. Patti used a steel wrench to work on her bicycle on a hot, sunny day. She left the wrench on the hot concrete surface for an hour while she had lunch. When she returned, the wrench was very hot to touch. What is the BEST explanation for how the wrench got so hot?

- A. Heat transferred from the concrete to the wrench.
 - B. Heat transferred from the wrench to the air.
 - C. Heat transferred from the bicycle to the wrench.
 - D. Heat transferred from the wrench to the concrete.
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19.

How do microwaves cook food?

- A. by using electromagnetic waves and the process of radiation
 - B. by using forced hot air currents through the process of convection
 - C. by using the movement of charged particles through the process of induction
 - D. by using direct contact of moving particles through the process of conduction
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20.

Bill and Mary wanted to have a snack after school. They heated some milk in a pot on the stove to make hot chocolate. They also popped some popcorn in the microwave oven. How did Bill and Mary transfer heat energy to make these snacks?

- A. heating milk by radiation; popping popcorn by radiation
 - B. heating milk by radiation; popping popcorn by convection
 - C. heating milk by conduction; popping popcorn by radiation
 - D. heating milk by convection; popping popcorn by conduction
-

21. Which of the following classification groups contains organisms that have the *most* characteristics in common?

- A. Kingdom
- B. Phylum
- C. Class
- D. Species

Answer Key

1. D) Sound
2. B) Mechanical
3. C) Heat transferred from the environment to the chocolate chips.
4. A) Beaker X will have the highest temperature.
5. D) The hot soup will lose heat and the ice water will gain heat.
6. B) water molecules move into the air as gas molecules.
7. C) The liquid expands when heated.
8. C) the steel spoon
9. A) conduction of heat through the pan.
10. A) ice cream absorbing heat.
11. C) a wooden spoon
12. B) metal
13. B) The heat from the hot water is conducted to the spoon handle.
14. B) raising the temperature inside the freezer
15. A) Place a bowl of water in a cool place and a bowl holding the same amount of water in a warm place.
16. B) liquid
17. B) radiation
18. A) Heat transferred from the concrete to the wrench.
19. A) by using electromagnetic waves and the process of radiation
20. C) heating milk by conduction; popping popcorn by radiation
21. A) Kingdom