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| 1. A thermometer shows that the outside air temperature is colder than the temperature at which water turns to ice. However, ice on the sidewalk melts. What probably caused this? 1. The air heating the sidewalk
2. The sidewalk reflecting sunlight into the air
3. The wind causing the ice on the sidewalk to melt
4. The sunlight making the sidewalk warmer than the air

2. The main method of heat transfer occurring within water is called \_\_\_\_\_\_\_\_\_\_.1. conduction
2. convection
3. radiation
4. insulation

3. What is the primary way energy is transferred when an object is plugged into a wall.1. Electrically
2. Thermally
3. Electromagnetically
4. Mechanically

4. You walk onto the beach and immediately your feet are burning. Which form of thermal energy caused the sand to heat up?1. conduction
2. convection
3. insulation
4. radiation

5. Which of the following materials would be considered good insulators?1. copper, silver, nickel
2. rubber, glass, air
3. diamond, emerald, ruby
4. oxygen, hydrogen, carbon dioxide

12. Students were investigating thermal energy. They put a metal spoon in the freezer. They put hot water in a beaker and measured the water temperature. They removed the spoon from the freezer and put it in the beaker. After 10 minutes, the students measured the water temperature again and touched the spoon. The data is shown in the table.

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| Student Investigation |
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| Start of Investigation | After 10 Minutes |
| Water temperature (°C) | Feel of spoon | Water temperature (°C) | Feel of spoon |
| 43 | Cold | 41 | Warm |

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Which best describes how the thermal energy in the water and in the spoon changing during the investigation?1. The water and the spoon both lost thermal energy.
2. The water and the spoon both gained thermal energy.
3. The water lost thermal energy, and the spoon gained thermal energy.
4. The water gained thermal energy, and the spoon lost thermal energy.

 | 6. The transfer of thermal energy through a direct contact by a solid is what?1. radiation
2. convection
3. conduction
4. insulation

7. Which object has more thermal energy? Assume that all objects are at the same temperature.1. a spoonful of ice cream
2. a cup of ice cream
3. a bowl of ice cream
4. a gallon of ice cream

8. Which object has more thermal energy? Assume that all objects are the same size.1. a can of Mountain Dew sitting outside on a hot day
2. a can of Mountain Dew sitting in the snow
3. a can of Mountain Dew just taken from the refrigerator
4. a can of Mountain Dew at room temperature

9. What kind of energy does a moving baseball have?1. Electrical
2. Magnetic
3. Mechanical
4. Chemical

10. Which of these particles make up atoms?protons, neutrons and electricityprotons, nucleus and electronsneutrons, positrons and electronsprotons, neutrons and electrons13. What is the smallest part of an element that still has the properties of that element?an atoma compounda moleculea nucleus14. Bubbles form in boiling water. This happens because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.The water molecules are splitting apart.The water is changing from a gas into a liquid.The water molecules are being pushed together.The water is changing from a liquid to a gas.15. The temperature at which a liquid turns into a solid is called the \_\_\_\_\_\_\_\_\_\_.freezing pointboiling pointvaporization pointsublimation point16. What are often called building blocks of matter?1. cells
2. elements
3. compounds
4. atoms

17. Matter takes up \_\_\_\_\_\_\_\_\_\_. 1. space and temperature
2. space and has volume
3. heat and temperature
4. space and heat

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