Shedding Light on Heat Episode 1: Temperature

Name: ____________________________

Part A

1. Heat is a form of _____________.

2. List three things (or processes) that produce heat. ________________________________________________________________

Part B

3. On the Celsius scale, ice melts at _______ and water boils at _______. The difference in temperature between these two points is _______°C.

4. On the Fahrenheit scale, ice melts at _______ and water boils at _______. The difference in temperature between these two points is _______°F.

5. Using the diagram on the left, convert the following temperatures from one scale to the other.
   (i) 20°C = ____°F (ii) 80°C = ____°F (iii) ___ °C = 140°F (iv) ____ °C = 0°F

Skill-BUILDER Questions:

6. A change in temperature of 20°C is the same as a change in temperature of _______°F.

7. Using the scale on the left, and some mathematics, convert the following from one scale to another.
   (i) -9°C = ______°F (ii) 10°C = ______°F (iii) 120°C = ______°F (iv) 200°C = ______°F (it’s not double 212)

Part C

8. Pure iron is made entirely of ____________ atoms.

9. Water is made of water molecules. Briefly describe a water molecule and state its chemical formula. ____________________________________________________________________________________________

10. What is temperature a measure of? ____________________________________________________________

11. Describe the difference between the movement of the atoms in a cold iron bar and in a hot iron bar. ____________________________________________________________

12. Briefly describe what the Kinetic Theory of Matter says. ____________________________________________________________________________________________

13. Why does food dye diffuse more quickly into hot water than it does in cold water? ____________________________________________________________________________________________

14. Why does it take time for you to smell a deodorant when someone sprays it a few metres away? ____________________________________________________________________________________________

15. All energy (including heat energy) is measured in ____________________.

16. Heat energy will always transfer from a hotter/colder object to a hotter/colder object. (Circle the correct words.)

17. If 1 kg of water absorbs 4,200 Joules of energy, the temperature of the water will increase by _______ °C.

18. Fill in the table below.

<table>
<thead>
<tr>
<th>Initial Temperature (°C)</th>
<th>Final Temperature (°C)</th>
<th>Temperature Change (°C)</th>
<th>Mass of Water (kg)</th>
<th>Energy Absorbed (J)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>21</td>
<td>1</td>
<td>1</td>
<td>4200</td>
</tr>
<tr>
<td>20</td>
<td>22</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>21</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>