Name _____ Class_____Date_____

Skills Worksheet

Concept Review

Section: Temperature

1. **Define** temperature in terms of kinetic energy.

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2. **Explain** how a liquid thermometer measures temperature.

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3. **Explain** why an object can never reach a temperature of absolute zero.

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4. **Convert** the following temperatures as indicated.

_____ a. What is 16°C on the Fahrenheit scale?

_____ b. What is 95°F on the Celsius scale?

_____ c. What is –30°C on the Kelvin scale?

_____ d. What is 100 K on the Celsius scale?

5. **Predict** what will happen if a block of hot iron is placed in a glass of cool water.

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6. **Evaluate** the following newspaper headline. Is it realistic? Explain your answer. *Scientists Create a Thermometer to Measure Temperatures Below 0 Kelvin*

_____

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7. **Explain** why a metal door should not be built to fit tightly to the frame of a door, especially in a region where the weather gets hot.

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Name _____ Class_____Date_____

Skills Worksheet

Concept Review

Section: Energy Transfer

1. **Explain** why a ceramic bowl will keep oatmeal hot longer than a stainless steel bowl.

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2. **Explain** which method of heat transfer can take place if two objects at different temperatures are placed without touching each other in a vacuum.

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3. **Calculate** how much energy must be transferred as heat in each of the following situations. Use the following equation:

energy = (specific heat) × mass × (temperature change)

a. A 100 kg tank of water is warmed from 10°C to 25°C; specific heat = 4,180 J/kg • K

_____

b. 100 kg of steam is raised from 120°C to 135°C; specific heat = 1,870 J/kg • K

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4. **Explain** why steam (gas) has a lower specific heat than water (liquid).

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5. **Describe** the method of heat transfer involved when you mix hot water with cold water to make lukewarm water.

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6. **Determine** which is the best type of skillet. Some people prefer a heavy cast iron skillet while others prefer a thin stainless steel one. (**Hint:** Think about how each skillet conducts heat.) Explain your answer.

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