Physical Science Chapter 16 Notes Outline

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Thermal Energy and Heat – Pages 472-495**

16.1 Thermal Energy and Matter

Work and Heat

 **Heat-**

Temperature

 **Temperature-**

 **Absolute Zero-**

Thermal Energy

Thermal Contraction and Expansion

 **Thermal Expansion-**

Specific Heat

 **Specific Heat-**

Measuring Heat Changes

 **Calorimeter-**

**SECTION QUESTIONS**

**1. Name two variables that affect the thermal energy of an object**

**2. The specific heat of copper is 0.39 J/g \* oC. How much heat is needed to raise the temperature of 1000.0 g of copper from 25.0 oC to 45.0 oC?**

16.2 Heat and Thermodynamics

Conduction

 **Conduction-**

 **Thermal Conductor-**

 **Thermal Insulator-**

Convection-

 **Convection-**

 **Convection Current-**

Radiation-

 **Radiation-**

Thermodynamics-

 **Thermodynamics-**

First Law of Thermodynamics-

Second Law of Thermodynamics-

 **Heat engine-**

 **Waste heat-**

Third Law of Thermodynamics-

**SECTION QUESTIONS**

**1. Give three examples of convection currents that occur in natural cycles**

**2. Why does a metal spoon feel colder than a wooden spoon at room temperature?**

16.3 Using Heat

Heat Engines

2 Main Types of Heat Engines:

 1. **External Combustion Engine-**

 **2. Internal Combustion Engine-**

Heating System-

 1. **Central Heating System-**

2.Hot-water heating-

 3. Steam Heating-

 4. Electric Baseboard Heating-

 5. Forced-Air Heating-

Cooling Systems-

 **Heat Pump-**

 **Refrigerant-**

Refrigerators-

Air Conditioners-

**SECTION QUESTIONS**

**1. List two main types of heat engines**

**2. How is thermal energy distributed in most heating systems?**