

Name _____ Date _____ # _____

Heat Study Guide

Part 1

Be able to match the definition with the correct vocabulary word.

1. friction – a force between two moving objects that slows the objects and produces heat
2. Celsius- the metric scale for measuring temperature
3. heat-the movement of thermal energy from hotter objects to cooler objects
4. thermal energy- the form of energy that moves particles of matter
5. temperature-the measure of how hot or cold something is
6. conduction-the movement of heat between objects that are *touching* each other
7. insulator-an object that doesn't conduct heat well
8. conductor-an object that heat can move through easily

Part 2

Be able to answer questions in a multiple choice format about the following statements:

1. Thermal energy flows from hotter to cooler objects.
2. Styrofoam, wood, and plastic are examples of insulators.
3. Rubbing hands together is a way to produce friction.
4. Cooking food in a frying pan on a stove is an example of conduction
5. When particles of an object move faster, the temperature goes up.
6. Rubbing your hands together is an example of friction.
7. A hairdryer uses thermal energy to produce heat.
8. Water freezes at 0 degrees (Celsius)

Part 3

Answer the following questions in essay format:

1. Explain what happens to air particles when it is cold outside and when it is hot outside.
When it is hot, air particles speed up and spread apart. When it is cold, air particles slow down and move close together.

2. Explain what happens to a piece of ice placed on 1)a piece of wood 2)a metal lid from a can and 3)a piece of plastic when they are placed in a pan of hot water.
*wood – will not melt as fast because wood is an insulator
metal lid – will melt quickly because metal is a conductor and the heat will cause the ice to melt.
plastic- will not melt as quickly because plastic is an insulator*

3. Explain how your body is like a thermostat.
Your body is like a thermostat because it keeps your body temperature at 98.6 degrees. If you get hot, you sweat. If you get cold, you shiver. Those are both ways your body keeps a constant temperature. A thermostat keeps a room at a certain temperature too by turning the heat on or off.

4. Explain the difference between insulators and conductors when referring to cups of hot chocolate. Which type of cup (tin, ceramic, styrofoam, glass, etc.)would make a better cup for hot chocolate? Why?
A Styrofoam cup would make a better cup for hot chocolate because Styrofoam is an insulator. It will not allow the heat to escape the cup of cocoa quickly which will keep it warmer for longer.