

## Chapter 2: Energy Transfer Study Guide

1. \_\_\_\_\_ is when energy travels through space as energy.
2. \_\_\_\_\_ is when hotter and less dense substances rise and the cooler and heavier matter fall.
3. The state where excited molecules and atoms pass energy to materials that are in close contact is called \_\_\_\_\_.
4. 32.8°F is equal to \_\_\_\_\_ °C.
5. 90.5°C is equal to \_\_\_\_\_ °F.
6. \_\_\_\_\_ is the amount of energy to raise an amount of substance 1 degree.
7. A \_\_\_\_\_ can also raise a kilogram of water one degree Celsius.
8. The \_\_\_\_\_ is the amount of energy to increase one pound of liquid water one Fahrenheit degree.
9. A 25 kg piece of cast iron has a temperature of 225°F with the surrounding air temperature of 45°F. How much heat energy is released when the cube cools to the surrounding temperature? \_\_\_\_\_
10. To change water from ice at 32°F to water at slightly above 32°F, the temperatures can essentially remain the same but we require energy to change the state of matter. \_\_\_\_\_ for ice is 0.336 Mega Joules per kilogram.
11. Fill in the blanks.
 

_____	=	_____	
Heat lost by surrounding water	=	Heat gained by the ice	+ Heat gained by the warming ice water
12. Use \_\_\_\_\_, which states that the rate of heat flow through a barrier.
13. Two inch polystyrene (Styrofoam) has a thermal conductivity of \_\_\_\_\_ and is a \_\_\_\_\_ insulator than fiberglass.
14. The \_\_\_\_\_ the R-value the \_\_\_\_\_ when trying to save the heat energy in the building or keep the hot summer temperatures outside in the warmer weather.
15. In zone 3, the U.S. Department of Energy recommends R-\_\_\_\_\_ for walls.
16. In zone 2, the U.S. Department of Energy recommends R-\_\_\_\_\_ for walls for homes with electric heat.