**Unit 7**

**Temperature vs. Heat**

**Temperature and Energy Conversions**

Temperature – a measure of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the

atoms or molecules of a substance.

Units of temperature Degrees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Degrees \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conversion units for temperature:

K = [°C] + 273 [°C] = K – 273

Examples:

* Convert 85 K to °C
* Convert 32 °C to K
* Convert 350 K to °C
* Convert -100 °C to Kelvins

Heat – a flow of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ due to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ difference

Units: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Calorie – the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_required to raise the temperature of

one gram of water by one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ degree

Joule – the \_\_\_\_\_\_\_ unit to used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy flow (heat)

Energy Conversions:

To convert back and forth between joules (J) and calories (cal) use the following equalitiy:

1 calorie = 4.184 joules **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Examples:

* Convert 230 calories to joules
* Convert 37 joules to calories
* Convert 98 KJ to calories

Notes from video clip on temperature vs. heat: