

## Chapter 16--Heat

“If you can’t stand the heat,  
get out of the chemistry  
lab.”

- **Heat** is the energy that flows from one substance to another when there is a temperature difference.
- **Temperature** is a quantity that is proportional to the average kinetic energy of an object.
- A **temperature difference** causes heat to flow between two objects until the two objects are at the same temperature.

- Heat is measured in energy units called **J, or Joules**
- Temperature is measured in **°C or K**

- Equation to determine how much energy is necessary to change the temperature of an object:
- $q = mC\Delta T$
- $q =$  heat in J
- $m =$  mass in g
- $\Delta T =$  temp change,  $T_f - T_i$
- $C$  is the specific heat capacity for that object, measured in  $J/g^\circ C$

- Calorimetry: a process that allows you to measure the heat that flows in a process by:
- 1. Using a known mass of a substance with a known specific heat capacity
- 2. Measuring the temperature change.

1. What is heat?
2. What is temperature?
3. What causes heat to flow between two objects?
4. What is the unit on heat? Temp?
5. What is the equation that allows you to find out how much heat flows between two objects?
6. What is the unit on specific heat capacity?
7. What is calorimetry and how does it work?