Unit 4 Concept 3 Density, Temperature, and Salinity

LEQ 1: What is the difference between heat and temperature?

- Heat is the energy that flows from an object of a higher temperature to an object of lower temperature.
  - Heat is a measure of energy.
  - Heat depends on the size of the object
- Temperature is a measure of how hot or cold something is related to the energy in the molecules that make it.
  - Temperature is a measure of average heat energy.
  - Temperature does not depend on the size of an object.

LEQ 1: What is the difference between heat and temperature?

- Example:
  - 1 cup of boiling water has the same temperature as 4 cups of boiling water.
    - 100 °C
  - 1 cup of boiling water does not have the same heat as 4 cups of boiling water.
    - Because 4 cups > 1 cup, 4 cups of boiling water has more heat than 1 cup.

LEQ 2: What is density?

- Density is the amount of matter per unit volume.
  - Density is how much stuff is in something.
  - Density = mass/volume

LEQ3:What is the relationship between temperature, density, and salinity?

- Salinity is the amount of dissolved salt in water.
- The higher the temperature of the water, the more salt it can dissolve, therefore the higher the salinity.
  - As temperature increases, salinity increases.
- The higher the salinity of the water, the more “stuff” it has in it, therefore the higher the density.
  - As salinity increase, density increases.
  - As temperature increases, salinity increases, density increases.