**Fish Float**

In Science class today, we did a discussion and a demonstration.

Polar Water

In this demonstration, Mr. Smith had a graduated cylinder that was filled with warm water. He then siphoned very cold water into it, and the cold water was denser, so it went to the bottom. You could tell this because when you felt the graduated cylinder, the bottom of it was cold and the top was hot.

Fish Float

In this discussion, Mr. Smith taught us about how fish have a special second bladder called a swim bladder, which helps them go up and down. They fill it with gas drawn from their blood when they want to swim up, and put the gas back in their blood when they want to sink.

Things I learned:

* Snowmelt water is colored blue.
* Seawater density ranges form 1.02 to 1.03 grams per cubic centimeter.
* Seawater Density by Temperature and Type
  + Warm Fresh Water (the least dense)
  + Cold Fresh Water
  + Warm Salt Water
  + Cold Salt Water (the most dense)
* Cargo ships have markers called the “Plimsoll Line” on them indicating the maximum depth a vessel can be loaded to in different waters (which have different densities.
* It is illegal for the master of a ship to allow the ship to be loaded any deeper than the marks indicate.
* Here are the marks that go with the lines on the marker:
  + TF ---- Tropical Fresh Water
  + F ------ Fresh Water
  + T ------ Tropical Salt Water
  + S ------ Summer Salt Water
  + W ------ Winter Salt
  + WNA - Winter North Atlantic Salt Water
* Fishes' swim bladder is a thin-walled, air-filled sac between the fish's gut and spine in bony fish.
* Air enters the bladder from the gut or surrounding capillaries and changes the amount of air pressure within the bladder maintaining its bouyancy whatever the depth.
* When the fish needs to dive, the bladder gives up gas to the blood and deflates a little. This makes the fish denser so it goes down.
* When the fish needs to swim up, the blood gives gas to the bladder and inflates it, decreasing its density so that fish goes up.

