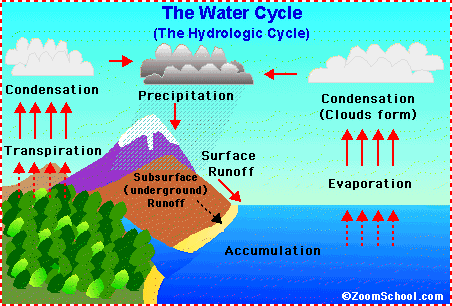
U2L10: Water

1. The Water Cycle:



1. Fresh Water:
   1. A divide is a ridge, or continuous line of high land, from which water flows in different directions. (ex. Chaos theory from Jurassic Park).
   2. A drainage basin, or watershed, is an area into which all of the water on one side of a divide flows.
      1. When it rains in a drainage basin, the water forms streams and rivers or sinks in to the ground. Every stream, river, and lake is in a basin.
   3. Lakes and ponds form where water naturally collects in low parts of land. Some lakes formed during the last ice age. (ex. The Great Lakes)
2. Lake Turnover and Eutrophication
   1. The water in a lake is not as still as it might appear. The changing temperatures of the seasons affect the water and cause it to move within the lake in a yearly cycle.
      1. During cold winters, ice may form on a lake, so that the wind cannot ruffle the surface. The water temperature in the lake remains steady, and the water stops moving. Fish move to the bottom where the water is warmer.
      2. During the summer, a warm layer of water sits at the top of the lake while, nutrients settle to the bottom. Warm water/high oxygen (top): Colder water/low oxygen (bottom).
      3. During the fall, the upper layer cools and sinks. When the lake turns over, nutrients and oxygen mix throughout the water. Nutrients are in the form of minerals and dead plants and other organisms.
   2. Eutrophication is an increase of nutrients in a lake or pond which occurs as algae forms a thick “scum” on the water. The amount of oxygen in water decreases, until fish and other organisms that require oxygen cannot survive.
   3. The process of eutrophication is usually slow. In some cases, however, eutrophication happens more quickly than it normally would because of pollution from human activities.
   4. Nitrogen in fertilizers used on farms and gardens may be washed into lakes. Phosphates from laundry detergents may be present in wastewater to reach lakes. The extra nutrients cause algae and plants in lakes to grow faster and more thickly than they normally would grow.
   5. Eutrophication from pollution causes clear lakes to become clogged with algae and plants.