

World Distribution of Water

NAME _____
DATE _____

Learning Outcomes Addressed

- D1. explain the significance of salinity and temperature in the world's oceans
- describe the world distribution of water
 - identify similarities and differences between salt water and fresh water

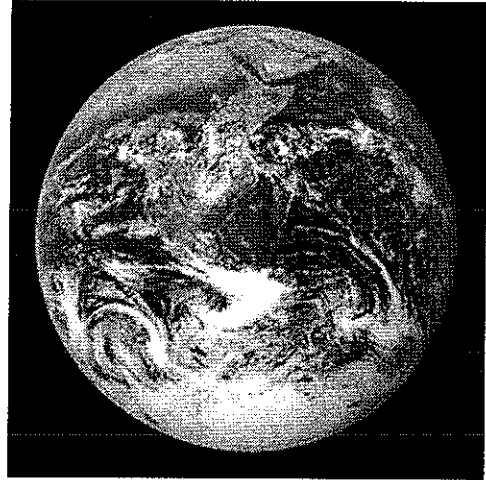
70% of the Earth's surface is WATER!!

Of this 70%....

- _____ is salt water
- _____ is fresh water

This 2.8% is made up of approximately....

- 2.15% _____
- 0.61% _____
- 0.01% _____
- 0.001% _____



Salt water is named for the obvious reason that it has dissolved salt in it.

However, fresh water also contains very small amounts of salt.

We use the term _____ to discuss how much dissolved salt there is in a body of water.

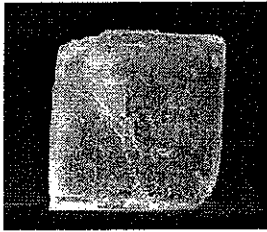
The water in the world's oceans has an approximate salinity of _____

That's the same as dissolving 35g of salt in 1L of water.

Freshwater has a salinity of less than 0.5 ppt. If you wanted to show this salinity how many grams of salt would you put into 1 L of water?

Not all of the salt water that makes up the ocean _____.

We know that water is cycled through the water cycle but where does the salt come from?



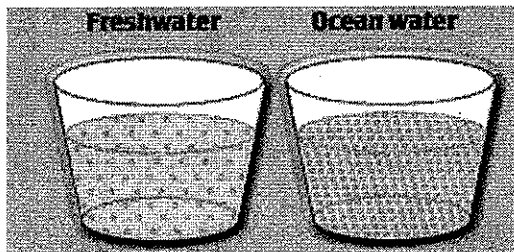
- Water seeps through the land _____
- The dissolved solids in highest abundance are _____ and _____ (ions that easily bond together to make SALT!)
The motion of the water easily _____.
- _____ (undersea and on land) have high levels of dissolved solids and molten rock that seep into the ocean.

Another major difference between salt water and fresh water is **DENSITY!!**

What is density?

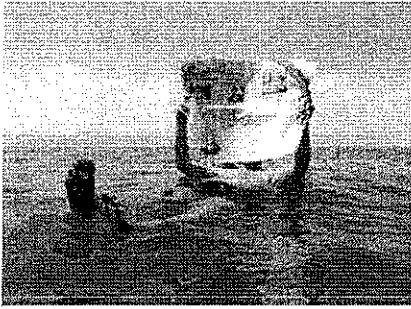
Think about what you just learned about dissolved materials (salts) in salt water.

Why is salt water **MORE DENSE** than fresh water?



Salt water has a density of approximately _____ (which means that if you had 1m^3 of salt water it would weigh 1027 kg) and fresh water has a density of approximately _____.

That's why it's easier to float in salt water..... there is more dissolved in the water (_____) to keep your body afloat!



A tourist takes advantage of the buoyancy in the Dead sea, which has an unusually high salinity of 6 times that of the ocean _____

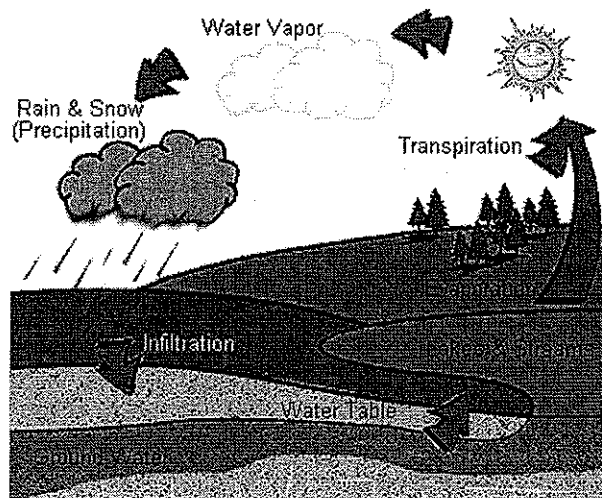
Another difference between salt and fresh water is the _____.

- Freezing point is directly related to the salinity....
- because the salt increases the density it lowers the freezing point. The _____ a material is the _____ the freezing point.
- While fresh water has the obvious freezing point of 0 degrees Celsius, the freezing point of salt water is _____.

7.3 - The Water Cycle

The water cycle is the _____ of water throughout the _____ as it changes _____ from solid, to liquid and gas.

_____ from the sun causes liquid water to _____, and solid ice to _____ into the air as water _____. As it _____, the water vapour _____ back into a liquid again and forms _____. As more and more water gathers, it eventually becomes so heavy it falls back to the Earth as _____ (rain, snow, hail). Liquid water flows along the surface and gathers in lakes, rivers, and oceans. _____ water, is water that has seeped into the soil and passes through the ground on its way to lakes, rivers, and oceans. Ground water brings pollutants, salts, and chemicals with them into the larger _____ of water. This water is eventually heated by the sun causing evaporation, beginning the _____ all over again. See diagram below.



A _____ is a large mass of ice and snow that _____ over thousands of year. A glacier is formed because more snow falls, than melts.

A _____ is a wetland that contains either fresh or salt water. It is characterized by grasses, cattails, and a tree-less area that is usually wet for at least part of the year.

A _____ is a wetland is like a marsh, except that it contains many _____ and shrubs.

A _____, is a wetland which contains a lot of _____. Mosses are able to hold a lot of water in the many air spaces in their leaves.

7.5 The Power Of Water

As water runs into lakes and streams it brings with it _____; gravel, sand, silt and mud. The sediment turns the usually clear running water into a _____ colour, blocking sunlight. The sediment that enters the water comes from a process called _____. Weathering is the _____ of rocks into smaller particles.

Rock can be weathered in different ways:

1. _____

_____ expands when it _____. Think about when you leave a pop in the freezer. As water enters the _____ in rocks and freezes, it creates a strong enough force to break apart the rock into smaller pieces.

2. _____

Biological weathering is caused by _____. Plant roots can force their way into tiny cracks in rocks and break them apart.

3. _____

Chemical weathering occurs when water _____ certain minerals in a rock. As these minerals are dissolved, the larger rock becomes unstable and breaks apart.

Erosion

The _____ of weathered material, or sediment, from one location to another is called erosion. Erosion can be caused by _____, running water, waves, gravity, and wind. Eventually the sediment settles in a process called deposition. A _____ is a flat area of land formed when sediment settles at the mouth of a river. When a lot of build up occurs in one area, it is usually _____, dug up, in order to make the area safer for boats

Floods and Avalanches

A flood occurs when water _____ the banks of rivers and shores of lakes. A flood plain is an area of flat land on either side of river that floods. Floods are caused by _____ rain, the melting of snow and ice, waves along coastal lowlands, and by _____ activities such as construction and logging.

An _____ is caused by the repeated freezing and thawing of snow. Eventually the bottom layers of snow become too _____ to support the snow on top, and the snow comes crashing down

Water Management

A _____ is a long wall of soil built along a river bank to prevent flooding. Although an improvement, dikes can still be overflowed allowing water to run into a low lying area. By monitoring local water situations, and developing a flood plan; communities can work together to share _____, skills, and expertise to protect our communities and environment. Communities near flood plains must receive flood information as soon as possible. Also, major land changes or construction projects must be _____ to see how these changes will affect plants and animals.

