

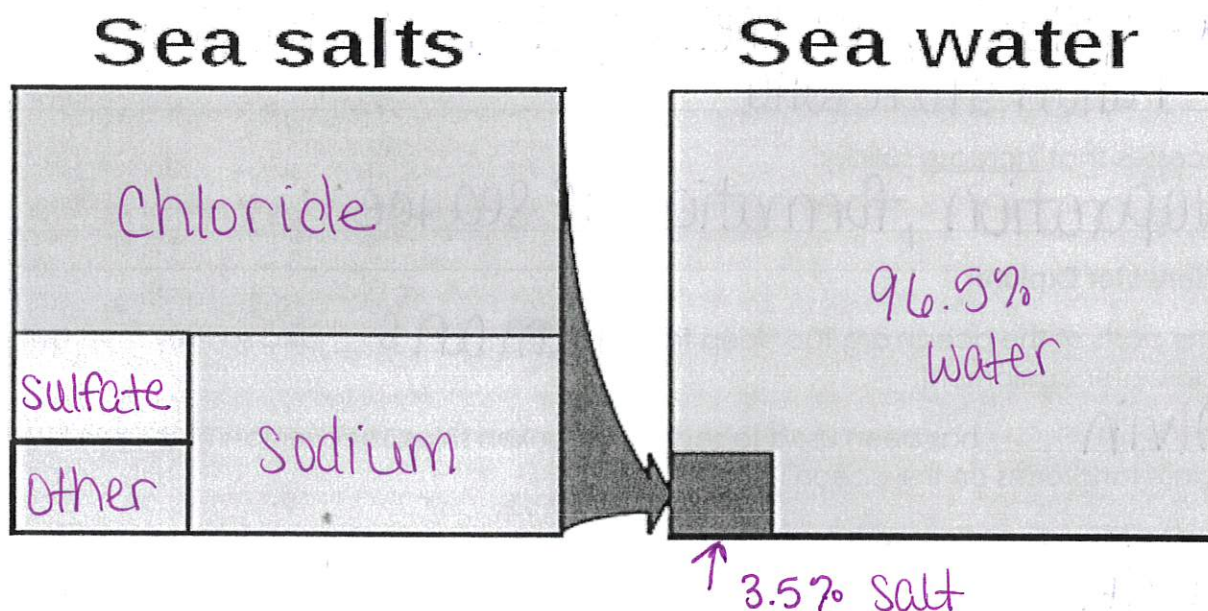
Name: _____

Chemical Composition of Ocean Water

What does the word composition mean?

What something is made up of, its parts
ex: composition of cake - eggs, flour, water, sugar
synonyms: structure, parts, components, pieces, content

Label the diagram below using the power point.



Salinity:

Salinity is the total amount of solid material dissolved in water. Because the proportion of dissolved substances in seawater is such a small number, oceanographers typically express salinity in parts per thousands. Most of the salt in seawater is sodium chloride, common table salt.

From precipitation to the land to the rivers to the sea...

The rain that falls on the land contains some dissolved carbon dioxide from the surrounding air. This causes the rainwater to be slightly acidic.

The rain physically breaks down the rock and the acids chemically break down the rocks. Rain then carries the dissolved salts and minerals along as it flows. The salts in the runoff are carried to the streams and rivers and then to the ocean.

Many of the dissolved salts are used by organisms in the ocean and are removed from the water. Others are not used up and are left for long periods of time where their concentrations increase over time.

Salt from below...

hydrothermal vents are recently-discovered features on the ocean seafloor that contribute dissolved minerals to the oceans.

These vents are the "exit points" on the ocean floor from which sea water that has seeped into the rocks of the oceanic crust has become hotter, has dissolved some of the minerals from the crust, and then flows back into the ocean.

Eruption of Volcanoes Underwater...

Similar to the previous process, during an underwater volcano eruption, seawater reacts with hot rock and some minerals are dissolved into the sea water.

Processes affecting salinity....

Processes that decrease salinity:

precipitation, ice melting, icebergs melting,
runoff from land

Processes that increase salinity:

evaporation, formation of sea ice

Underwater Explorer

Some parts of the ocean are too deep for humans and so they must use special underwater equipment.

Alvin has been used to search for sunken ships, recover lost hydrogen bombs, and explore landforms on the ocean floor.

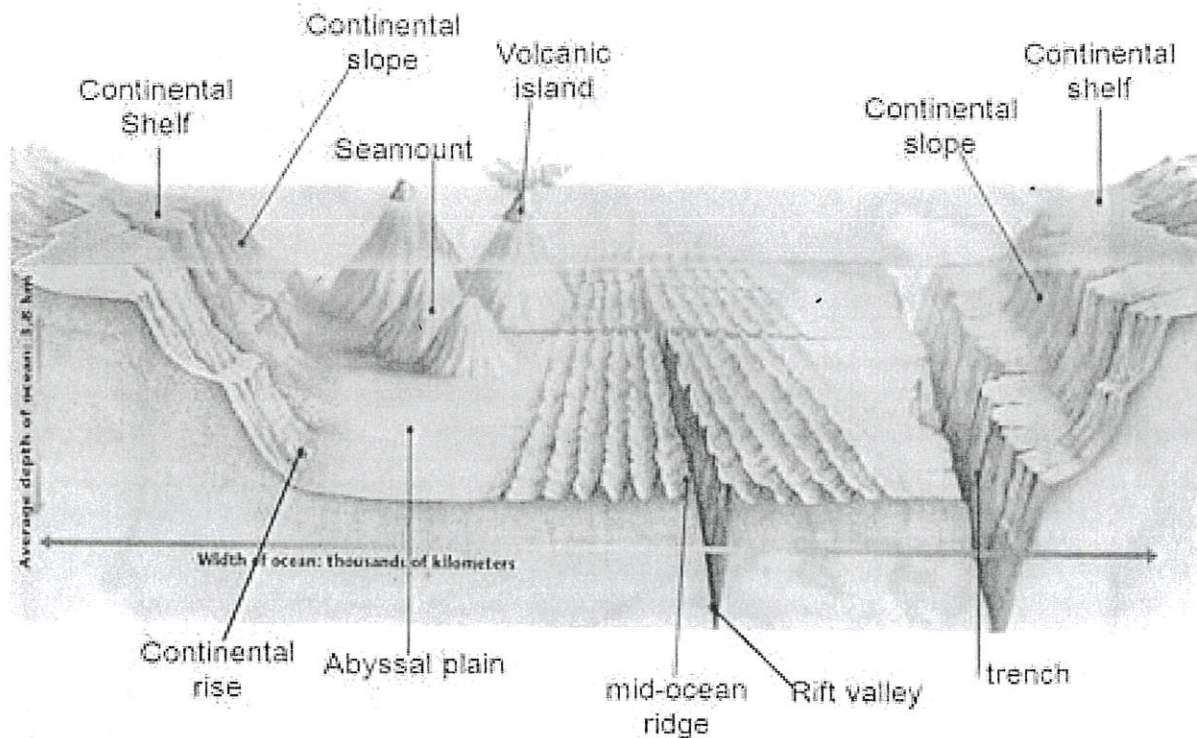
Viewing the ocean floor with sonar....

SONAR (sound navigation and ranging) is a technology based on echo-ranging behavior of bats.

We can measure the ocean's depth with sonar by sending high frequency sound waves to the ocean floor.

The sound bounces off the ocean floor and back to the boat.

The Ocean Floor



continental shelf

A gradually sloping area that edges each continent. It can range from a few kilometers to 1,300 kilometers.

continental slope

The gradual drop off from the continental shelf that leads to the deep ocean floor. It reminds me of the transition from the shallow end to the deep end in a pool.

continental rise

The gently sloping base of the continental slope.

Abyssal plains

Relatively flat layer covered in a thick layer of sediment at the base of the continental rise.

seamount

Cone shaped undersea mountains of volcanic origins. The Hawaiian islands began as seamounts.

volcanic islands

Mountains of volcanic origins that have broken the surface of the water. An example are the Hawaiian Islands.

rift valley

The deep undersea valley at the mid-ocean ridge.

trench

These are deep canyons caused at subduction zones in the ocean.

mid-ocean ridge

The underwater mountain chain the winds through the ocean where divergent plate boundaries pull apart.