

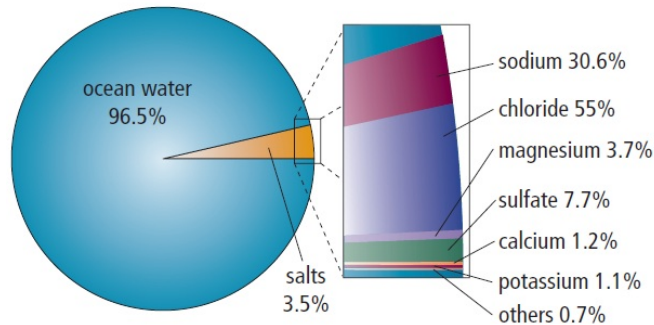
Science 8
Unit 1: Water Systems
Worksheet 2 : Comparing Freshwater and Saltwater



Three ways in which freshwater differs from ocean water are:

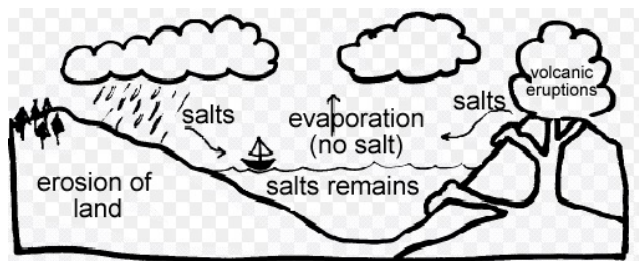
1) Salinity - the amount of salt dissolved in a specific amount of water.

-Fresh water has tiny amounts of salt, ocean water is more than 200 times saltier



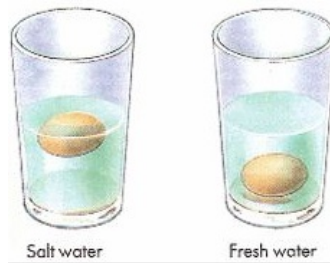
-By far the most common material that is deposited into the ocean is sodium chloride, which is the chemical name for salt.

- Salt arrives in the oceans from several different sources:



- i) From Rain fall on the land As it travels back to the ocean the water picks up materials from the rocks. These materials are called dissolved solids, and you cannot see them even with the help of a microscope.
- ii) Volcanoes contribute some chemicals as well. Undersea volcanic eruptions from the sea floor release large amounts of sulphur, fluorine, chlorine, and hydrogen into ocean water. Also, eruptions on land spew similar materials high into the atmosphere which then fall into the ocean or onto Earth where they get carried to the ocean as run-off

2) Density refers to the amount of mass of a substance in a certain unit volume.



- Salt increases the density of water. Therefore, ocean water is denser than freshwater.

-Ocean water is denser than fresh water. There is more mass in 1 L of ocean water than there is in 1 L of fresh water. Ocean water has a density of 1.027 g/L and fresh water has a density of 1.000 g/L



3. The freezing point of a liquid is the temperature at which it freezes
- The point of fresh water freezing is 0°C .
 - Salt water has a freezing point of about -1.9°C .
 - Salt keeps water from freezing



PART A: MULTIPLE CHOICE

1. The amount of salt dissolved in water is called
- (A) Density
 - (B) Specific gravity
 - (C) Salt content
 - (D) Salinity
2. The two main dissolved solids in ocean water are
- (A) Chloride and sodium.
 - (B) Magnesium and calcium.
 - (C) Sodium and magnesium.
 - (D) Sulfate and sodium.
3. Which of the following is not a source of salt for the oceans?
- (A) Rainfall.
 - (B) Volcanic eruptions on land.
 - (C) Dissolved materials from rocks.
 - (D) Undersea volcanoes.
4. Which of the following statements comparing the properties of salt and fresh water is true?
- (A) Salt water has a greater density and higher freezing point than fresh water.
 - (B) Salt water has a greater density and lower freezing point than fresh water.
 - (C) Salt water has a lower density and lower freezing point than fresh water.
 - (D) Salt water has a lower density and higher freezing point than fresh water.
5. Which of the following refers to the amount of mass of a substance in a certain unit volume.
- (A) Salinity
 - (B) Sublimation
 - (C) Freezing point
 - (D) Density

6. Which substance has the highest density if it is contained within an identical container as the others?
- (A) Oxygen
 - (B) Water
 - (C) Mercury
 - (D) Wood
7. Why do you find it easier to swim in the ocean?
- (A) Saltwater has a greater density
 - (B) Freshwater has a greater density
 - (C) Saltwater has a lower freezing point
 - (D) Freshwater has a lower freezing point
8. What could you do to make yourself more buoyant?
- (A) Add less salt to the water
 - (B) Add more salt to the water
 - (C) Increase the temperature of the water
 - (D) Decrease the temperature of the water
9. What is the freezing point of freshwater?
- (A) 100 °C
 - (B) 0 °C
 - (C) -1.9 °C
 - (D) -10 °C
10. Why do you add salt to remove ice on a walkway?
- (A) To increase the temperature outdoors
 - (B) To decrease the temperature outdoors
 - (C) To increase the melting point of ice
 - (D) To decrease the melting point of ice



PART B: WRITTEN RESPONSE

1. What are the three difference between freshwater and saltwater. Explain

2. What dissolved chemical occurs in the greatest amount in ocean water?

3. Why is ocean water saltier near the equator?

4. Why is ocean water more dense than fresh water?

5. Where does the salt that gives the ocean its salinity originally come from?

6. What does the addition of salt do to the freezing point of water?

7. Why is it so easy to float in the Dead Sea?
