

Science 8
Unit 1: Water Systems
Worksheet 1: Distribution of Water



Hydrologist A person who studies Earth’s water systems and helps to find solutions to problems of water quality and quantity

Oceanographer: is a scientist who studies all aspects of the ocean. They are concerned with the biology, chemistry, physics and mathematics of the ocean.

Why is water important?

- 1) Allows life to thrive on earth(habitat).
- 2) Living organisms are made of water (60% - 70% of human body).
- 3) major effect in shaping the landscapes.
- 4) Affect the weather and climate.
- 5) Affect the culture.
- 6) Use to provide energy



How is the World’s Water Distributed?

Earth has been called “the blue planet.” From space, its surface appears to be mostly composed of water. The is composed of 70% water and 30% land.

Earth’s total water supply is distributed as follows

97 % is salt water

3% is freshwater

2% frozen as ice

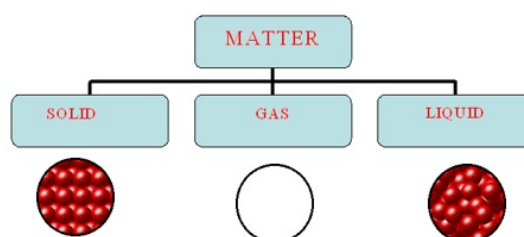
1% liquid freshwater



The water we need to survive is actually in very short supply.

What is matter?

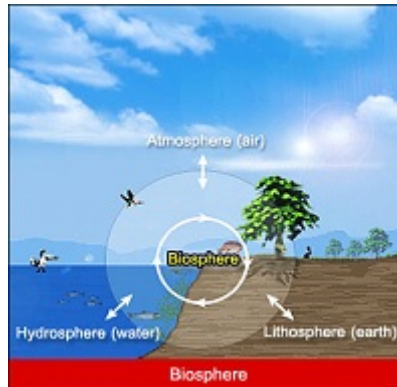
Matter is anything that has mass or takes up space. The three states of matter are:



Changes in States of matter:

CHANGE	FROM	TO	EXAMPLE
Sublimation	solid	gas	Moth crystals disappear when left in a closet for several days
Sublimation	gas	solid	frost forms on a car's windshield
Melting	solid	liquid	An ice cube turns into water when left out of the freezer
Freezing	liquid	solid	bottle of water will turn into ice if left in the freezer
Condensation	gas	liquid	Drops of water form on the mirror when taking a hot shower
Evaporation	liquid	gas	Rain dries up when the sun comes out

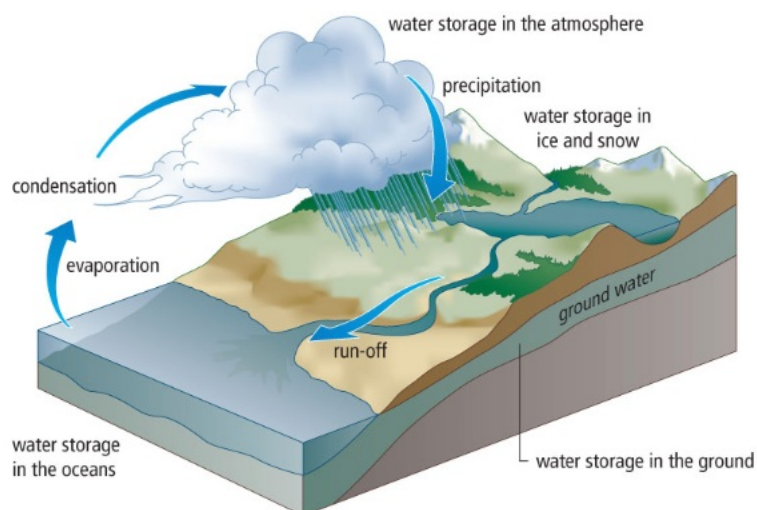
The Four Spheres of Earth :



1. **Lithosphere (litho = stone)** is the solid, rocky crust covering entire planet
2. **Hydrosphere (hydro water)** is composed of all of the water on or near the earth. This includes the oceans, rivers, lakes, and even the moisture in the air.
3. **Atmosphere (atmo = air)** The atmosphere is the body of air which surrounds our planet. Most of our atmosphere is located close to the earth's surface where it is most dense
4. **Biosphere (bio = life)** The biosphere is composed of all living organisms. Plants, animals, and one-celled organisms are all part of the biosphere.

Where does the water come from?

Water Cycle (hydrologic cycle) is a continuous cycle where water evaporates, travels into the air and becomes part of a cloud, falls down to earth as precipitation, and then evaporates again. The water cycle is powered by the sun.



It is the water cycle that causes water to be transfer throughout the hydrosphere, lithosphere, and atmosphere. The water of the hydrosphere is distributed in oceans, lakes and streams at the surface of the earth. Evaporation moves the water from these bodies into the atmosphere. Evaporation Also moves water from the liquid state in the lithosphere into vapor. The vapor in the atmosphere condenses and returns as liquid to the lithosphere and hydrosphere

- Condensation -** the process in which water vapour (a gas) in air turns into liquid
- Evaporation -** the process in which liquid water becomes water vapour (a gas). Water vaporizes from the surface of oceans and lakes, from the surface of land, and from melts in snow fields.
- Precipitation-** The process in which water (in the form of rain, snow, sleet, hail and drizzle) falls from clouds in the sky.
- Surface Runoff -** rain, snow melt, or other water that flows in surface streams, rivers, or canals.

PART A: MULTIPLE CHOICE

1. Which term describes a person who studies and finds solutions to Earth's water systems?
 - (A) Astrologist
 - (B) Hydrologist
 - (C) Physicist
 - (A) Meteorologist
2. Which of the following is an important use for water?
 - (A) A blue whale lives in the ocean
 - (B) It is used to create hydroelectricity
 - (C) The ocean causes Newfoundland's coastline to have moderate temperatures
 - (D) All the above are important uses of water
3. What percentage of Earth is covered in water?
 - (A) 3%
 - (B) 30%
 - (C) 70%
 - (D) 97%
4. What percentage of the earth's total water is salt water?
 - (A) 1%
 - (B) 20%
 - (C) 3 %
 - (D) 97%
5. What percentage of the earth's total water is liquid fresh water?
 - (A) 1%
 - (B) 20%
 - (C) 3 %
 - (D) 97%
6. Where is most of the world's fresh water found?
 - (A) Lakes
 - (B) Rivers
 - (C) Oceans
 - (D) Sheet ice and glaciers
7. Why is less than one-third of fresh water available for use by humans?
 - (A) Most fresh water is polluted
 - (B) Most fresh water is frozen
 - (C) Most fresh water is found underground
 - (D) Most fresh water is condensed into clouds
8. What is the best definition of matter?
 - (A) Anything occupying space.
 - (B) Anything except air.
 - (C) Rocks and wood but not water.
 - (D) Small particles of dust.
9. Which of the following is not a state of matter?
 - (A) Solid
 - (B) Liquid
 - (C) Gas
 - (D) Energy

10. Which state of matter has no definite shape and no definite volume?
- (A) Liquid or gas
 - (B) Gas
 - (C) Solid
 - (D) Liquid
11. What term is used to describe matter that changes from a liquid to a gas?
- (A) Evaporation
 - (B) Sublimation
 - (C) Condensation
 - (D) Melting
12. Which of the following refers to the layer of the earth that contains all of the water?
- (A) Atmosphere
 - (B) Biosphere
 - (C) Hydrosphere
 - (D) Lithosphere
13. What is another name for the water cycle?
- (A) Hydrologic cycle
 - (B) Lithologic cycle
 - (C) Biological cycle
 - (D) Conic Cycle
14. The water cycle is driven by the:
- (A) Sun
 - (B) Moon
 - (C) Clouds
 - (D) Oceans
15. When water vapor cools to form clouds, it's called:
- (A) Condensation
 - (B) Evaporation
 - (C) Sublimation
 - (D) Precipitation
16. When water droplets get large enough to fall from the clouds, it's called:
- (A) Condensation
 - (B) Evaporation
 - (C) Sublimation
 - (D) Precipitation
17. How are clouds formed?
- (A) Cool air rising
 - (B) Water vapor condensing
 - (C) Lightning
 - (D) Snow
18. Most of the water that evaporates on the earth comes from:
- (A) Lakes
 - (B) Ponds
 - (C) Oceans
 - (D) Creeks

19. Which is the correct sequence of processes as water moves from the ocean to land in the hydrologic cycle?
- (A) Evaporation, Condensation, Precipitation, Runoff
 - (B) Evaporation, Precipitation, Runoff, Condensation
 - (C) Runoff, Precipitation, Evaporation, Condensation
 - (D) Precipitation, Evaporation, Condensation, Runoff
20. The water that was around when many hundreds of years ago:
- (A) Is gone, and has been for a long time
 - (B) Is about halfway gone
 - (C) Is the same water we use today
 - (D) Would be really dirty if it were still around

PART B: WRITTEN RESPONSE

1. How do you use water?

Household Uses	Personal Uses	Recreational Activities

2. For each of the following descriptions, decide whether they demonstrate evaporation or condensation:

	Descriptions	Evaporation or Condensation
(A)	after wiping a whiteboard with a wet sponge, the board is dry an hour later.	
(B)	the dew on the grass early in the morning.	
(C)	your breath on a window on a cold day.	
(D)	clothes drying on a clothesline	

3. Sketch the diagram of the water cycle below into your notebook and label the parts.

