

Week 8 Vocabulary – suffix “tion” – showing action

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2. **Coward** — Someone who is scared to do something brave.
3. **Breakfast** — The first meal you eat in the morning.
4. **Remarkable** — Very special or surprising in a good way.
5. **Application** — A form you fill out to ask for something like a job or school.
6. **Vanish** — To disappear suddenly.
7. **Saucer** — A small plate that holds a cup.
8. **Hawaii** — A group of islands in the ocean that is a state in the USA.
9. **Politician** — A person who works to make rules and laws for a country or city.
10. **Information** — Facts or details about something.
11. **Recession** — When the economy gets worse and people might lose jobs or money.
12. **Concession** — Something you give up to make an agreement.
13. **Deception** — Tricking someone or lying to them.
14. **Production** — Making or creating things.
15. **Reduction** — Making something smaller or less.
16. **Domination** — When someone or a group controls others.
17. **Loyal** — Always sticking by someone or something and being faithful.
18. **Renewable** — Something that can be used repeatedly without running out.
19. **Vertical** — Going straight up and down.
20. **Panel** — A flat piece or a group of people chosen to talk or decide something.

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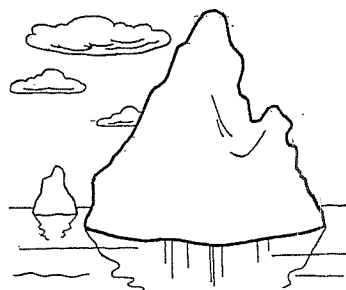


Science Standard: Understands basic features of the Earth
Benchmark: Knows the processes involved in the water cycle

The Water Cycle

Our Earth is a closed system. All of its elements are already here. More elements do not enter into it. This means that all the water that ever was here is still here. How can that be? Because our Earth recycles its elements, using each one over and over again.

Every drop of water on the Earth has gone through the water cycle. Much of it has gone through the cycle billions of times. All of the water on Earth is always in some stage of the water cycle. The water is either in storage, evaporation, condensation, precipitation, percolation, or runoff. All of the ice frozen in glaciers and all of the water in oceans,



lakes, rivers, and underground aquifers is in the storage stage. During the evaporation stage, liquid water changes to vapor. This vapor enters the atmosphere. When the vapor cools, it condenses and forms clouds. Later the clouds drop precipitation in the form of rain or snow, and the water falls back to the ground. Much of this precipitation seeps down through the ground in a process called percolation. The rest runs into streams, lakes, rivers, and oceans. Such runoff increases during storms, rainy seasons, and after snow and ice melt.

Humans have affected the water cycle for thousands of years. We dig ditches to bring water to dry land. We build dams to control flooding and provide electrical power. We drill wells to pump up groundwater. In some areas of the U.S. people have drained underground aquifers that took thousands of years to fill. As a result, the ground may begin to cave in.

The oceans hold about 97 percent of all the water on Earth. Since sea water is salty, we cannot drink it. However, if water evaporates from an ocean, it leaves its salt behind. So when it falls as precipitation, it's fresh water. The fresh water in glaciers stays frozen for hundreds of years. Thus, we cannot easily access this water. Most groundwater is found in the first ten miles of the Earth's crust, and we can tap this supply. Water below this depth can only return to the Earth's surface during a volcanic eruption.

The Water Cycle (cont.)

Comprehension Questions

1. Steam is in what stage of the water cycle?
 - (a) condensation
 - (b) percolation
 - (c) evaporation
 - (d) precipitation
2. Read all of the statements. Decide what happened third.
 - (a) An aquifer was drained.
 - (b) People pumped out water.
 - (c) Many people drilled wells.
 - (d) A ground depression (sinkhole) formed.
3. Water stays the longest time in which stage of the water cycle?
 - (a) evaporation
 - (b) storage
 - (c) precipitation
 - (d) condensation
4. Another word for *access* is
 - (a) drink.
 - (b) buy.
 - (c) obtain.
 - (d) freeze.
5. How does an aquifer fill with water?
 - (a) Rainwater percolates until it reaches the aquifer.
 - (b) The aquifer absorbs clouds.
 - (c) Ocean floods fill the aquifer.
 - (d) People pump water into the aquifer.
6. Picture a foggy day. The fog means that water is in which two stages of the water cycle?
 - (a) storage and condensation
 - (b) percolation and runoff
 - (c) evaporation and precipitation
 - (d) precipitation and condensation
7. Should we satisfy a growing need for more fresh water by melting polar ice? Explain.

Lesson 9-9 • Reinforce Understanding

Solve Problems Involving Fractions and Mixed Numbers

Name _____

Review

Problems involving mixed numbers can be solved using known strategies for addition and subtraction of mixed numbers.

Problem	Work and Solution
Nancy has $3\frac{2}{5}$ cords of firewood. David has $4\frac{9}{10}$ cords of firewood. How many cords of firewood do they have in total?	$3\frac{2}{5} + 4\frac{9}{10}$ $= 3\frac{4}{10} + 4\frac{9}{10}$ $= 7\frac{13}{10}$ $= 8\frac{3}{10} \text{ cords}$

- Sheridan and Natalie are shucking corn. Sheridan shucks $6\frac{5}{8}$ pounds of corn. Natalie shucks $2\frac{3}{4}$ pounds of corn less than Sheridan. How many pounds of corn did Natalie shuck?
- Corben runs $4\frac{1}{2}$ miles on Monday, $6\frac{3}{10}$ miles on Tuesday, and $5\frac{4}{5}$ miles on Wednesday. How many total miles did Corben run?
- Rico is baking bread. He has $7\frac{7}{9}$ cups of flour and he uses $3\frac{5}{6}$ cups. How many cups of flour does he have left?

Lesson 9-8 • Reinforce Understanding

Add and Subtract Mixed Numbers with Regrouping

Name _____

Review

When adding and subtracting mixed numbers, it is sometimes necessary to rename whole numbers.

Consider the equation $5\frac{1}{6} - 2\frac{4}{5} = ?$

Step 1	Step 2	Step 3	Step 4
$5\frac{5}{30}$	$4 + 1 + \frac{5}{30}$	$4 + \frac{30}{30} + \frac{5}{30}$	$4\frac{35}{30}$
$- 2\frac{24}{30}$	$- 2\frac{24}{30}$	$- 2\frac{24}{30}$	$- 2\frac{24}{30}$
			$2\frac{11}{30}$

So, $5\frac{1}{6} - 2\frac{4}{5} = 2\frac{11}{30}$.

Add or subtract.

- | | |
|--|---|
| 1. $3\frac{5}{6} + 1\frac{1}{2} =$ _____ | 4. $7\frac{1}{8} - 2\frac{3}{4} =$ _____ |
| 2. $4\frac{2}{7} - 1\frac{1}{2} =$ _____ | 5. $2\frac{5}{12} + 2\frac{7}{8} =$ _____ |
| 3. $2\frac{4}{5} + 5\frac{1}{3} =$ _____ | 6. $5\frac{1}{6} - 2\frac{7}{9} =$ _____ |

The Water Cycle

Cross-Curricular Focus: Earth Science



Water on Earth can be found in three different forms, or states. These states are solid, liquid and gas. When it is frozen, it is solid ice. When it is liquid, it is liquid water. When it is a gas, it is water vapor. The water cycle is the set of processes that water goes through as it changes from one state to another.

When the heat of the sun shines on the water in oceans, lakes, rivers and streams, the water evaporates, rising up into the air as water vapor. As it moves higher into the sky, it cools. The cooled water vapor begins to form liquid drops, which gather together as clouds. This process is called condensation. Little by little, more microscopic drops of water join together in the cloud. Finally, the cloud becomes so heavy that the drops start to fall. Any form of water that falls from the sky is called precipitation.

Precipitation will take on different forms. The form depends on the conditions that exist inside the clouds and the condition of the air the water travels through on its way to the ground. Drops of liquid water fall as rain, the most common form of precipitation. If the drops of water fall through air that is warmer than water's freezing point, they will remain as rain. Sometimes cold temperatures inside clouds produce ice crystals that melt in warmer air on their way down, ending up as rain as well.

If raindrops fall through air that is below the freezing point of water, they form tiny frozen drops known as sleet. If the air inside the cloud and the air on the way down are both below the freezing point, ice crystals will form and fall as snowflakes. There is a lot of variation in snow, depending on how cold it is when it falls. Warmer temperatures mean "wetter" snow, while colder temperatures mean drier, fluffier snow.

Perhaps the most interesting form of precipitation is hail. Hail forms when windy conditions combine with freezing temperatures. Drops of frozen rain begin to fall, and are then repeatedly caught up by the wind and pushed back up through the clouds where they gather more and more layers of ice. When they become too heavy for the wind to lift, they fall to the ground as hail.

No matter what form the precipitation takes, much of it will become runoff and find its way back to the sea. Most of the rest will join surface water in lakes and streams or soak into the ground and become groundwater. Some will spend some time atop tall mountains as ice and snow.

All water awaits its turn to participate once again in each state of the water cycle. Water continually changes from one state to another. The water cycle never ends.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) How does the water cycle ensure that we have water?

2) What are the three stages of the water cycle? _____

3) Describe the conditions that are necessary for snow to fall.

4) How does precipitation return to the water cycle? _____

5) What is your favorite form of precipitation? Why? _____

Water, Water Everywhere

Cross-Curricular Focus: Earth Science



Water is probably Earth's most precious resource. After all, we can't live without it. Earth is the only known planet to have water. Our entire planet is covered in water, with little pieces of land called continents here and there. Our oceans are not the only places we have water. It is also present under the ground and as vapor in the air. Clouds formed by the vapor ensure that water falls back down to Earth as rain, sleet, snow or hail.

So with so much water all around us, why do we hear so much about the need to conserve water? It has to do with the water's salinity, or saltiness. Ocean water has too much salt in it for us to drink. Much of the water that falls back to Earth in one form or another becomes **runoff**. It travels some distance over land before making its way back to one of Earth's oceans. As it travels over land, the water picks up salts and minerals from the rocks and soil and washes them into the ocean. The deposits have built up over many years. That is why ocean water is so salty.

Approximately 97% of Earth's water is salt water. The process of **desalination**, or removing salt from water, is expensive. That leaves only about 3% that is freshwater for meeting the needs of people, plants and animals. This is why there is concern for protecting this rare and critical resource. Unfortunately, only about a third of our freshwater is even available for us to use. The rest is frozen solid in glaciers, in the snow on high mountaintops and in the polar ice caps. So the end result is that we have only about 1% of all the water on Earth that we can use.

The freshwater we use comes from surface water and **groundwater**. Surface water, just as it sounds, is water we can see in ponds, rivers, lakes and streams. Groundwater is water that seeps down into the ground and collects in the spaces between rocks and soil underground. You can find water just about anywhere on Earth if you dig far enough into the ground.

It is important to protect our water supplies from pollution. Once the water becomes polluted, it can be difficult or even impossible to clean. Chemicals, like cleaning supplies, paints and other toxins, can seep into the ground and make the water unusable. People must dispose of their waste products appropriately so we will have plenty of freshwater to go around.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) With so much water all around us, why is there so little water for us to use?

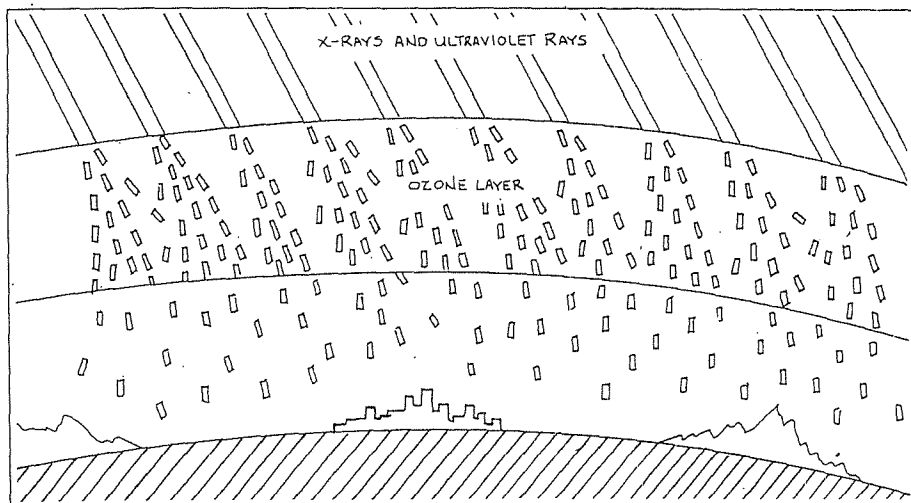
2) What are the four forms that water takes when it returns to Earth from the clouds?

3) What is the main idea of this passage?

4) Where is groundwater found?

5) What type of substance can seep into groundwater and make it unusable?

The Earth's Safety Blanket



A few years ago, whenever people used hair spray or insect spray or spray paint, they were destroying an important part of our world. Although no one knew it, the gases in spray cans were harming the ozone layer.

No one has ever seen the ozone layer because it isn't on the earth. It is part of the atmosphere, a thick blanket of air that covers the world. The atmosphere is made up of many gases, especially nitrogen and oxygen. Close to the earth, the atmosphere is thick and heavy, but as it gets farther away from the earth, the atmosphere gets thin. There, the energy from the sun changes the way the gases behave. For instance, oxygen atoms usually travel in the air connected together in pairs. But high in the atmosphere, the sun's energy causes three oxygen atoms to connect together instead of two. These groups of three oxygen atoms are called ozone. And the place high in the air where regular oxygen changes to ozone is called the ozone layer.

The ozone layer is very important to life on earth even though it is far away. It soaks up dangerous rays from the sun that harm plants and animals. Even more important, the ozone layer helps keep the earth cool. Without it, the earth might become so hot that the icecaps would melt and flood much of the world. That is why scientists were worried when they found out that gases from spray cans were destroying the ozone layer. Now spray cans contain safe gases. So even though some of the ozone layer has been destroyed, it is no longer being harmed by people's spray cans.

Think About It

Besides not using spray cans, think of three other ways that we can protect life on earth.

Name _____

The Earth's Safety Blanket

Main Idea

1. This story explains

- _____ the use of spray cans.
- _____ the ozone layer of the atmosphere.
- _____ the dangerous rays of the sun.

Sequencing

2. Number the events below in the order that they happened.

- _____ Spray cans were changed to contain safe gases.
- _____ Scientists became worried about the ozone layer.
- _____ People using spray cans were destroying the ozone layer.
- _____ The ozone layer was no longer being harmed by spray cans.

Reading for Details

3. Use the clues to answer these questions.

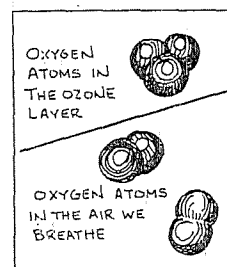
What is the atmosphere made of? (paragraph 2) _____

Where is the atmosphere thick and heavy? (paragraph 2) _____

Where is it thinner? (paragraph 2) _____

Why is the ozone layer important to the earth? (paragraph 3) _____

How was the ozone layer being harmed? (paragraph 1) _____



Reading for Understanding

4. Place the correct letter in the blank.

- | | |
|-------------------|---|
| _____ ozone layer | a. thick blanket of air that covers the earth |
| _____ atmosphere | b. groups of three oxygen atoms |
| _____ ozone | c. place high in the atmosphere where regular oxygen changes to ozone |
| _____ spray cans | d. used to contain harmful gases |

