Week 1 Grade 6 Science

Water Cycle Review

Name _____

Instructions:

- There are 4 lessons in this packet. One for each day, Monday - Thursday.
- There is an exit ticket at the end of each lesson, for a total of 4 exit tickets.
- The exit ticket is due in Illuminate each day.
- You should complete the daily lesson, then log into Illuminate to answer your exit ticket each day.
- You should expect to spend about 60 minutes each day on Science.
- To work in the packet, you can print it out, write on a sheet of paper, or type in a google or word doc. Whichever works for you!
- The exit ticket must be completed in Illuminate!

To set up office hours for **Girls Prep Bronx Middle School** click the link and add your name to a time slot. Ms.Best or Ms. Migoni will call you and give you extra help on your assignments!

Teacher Name	Email	Cell
Ms. Best	cbest@girlsprep.org	424-227-1553
Ms. Migoni	rmigoni@girlsprep.org	646-755-2445
Ms. Di Luca	ediluca@girlsprep	917-543-6438
Ms. Patrick	apatrick@girlsprep.org	646-400-9176

Week 1 Day 1 (Monday, March 23) 60 minutes

Introduction: Dear 6th graders, Today you are going to be reviewing the water cycle. You will start by identifying the main parts of the water cycle and begin to describe the relationships between those parts!

Instructions: Here are 3 options for recording your answers:

1. You can print this out and write on it.
2. You can write your answers on a sheet of notebook paper.
3. You can type your answers into a google doc.

Objective:

Scientists will be able to:

- ❑ Identify the components of the water cycle by defining vocabulary.
- ❑ Describe the relationship between the components by labeling a diagram and writing a summary.

Think & Write: The water that comes from your faucet at home used to be in the ocean, or as a snowflake, or maybe even in a dinosaur long ago! Describe how you think the water got to your faucet! Provide evidence to support your ideas. You can draw a picture in the space below the lines.

_____

_____

_____

_____

_____

_____

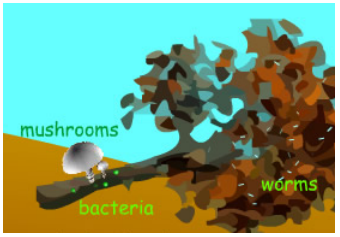
Picture:

Word Sort: These words are some of the vocabulary that will be helpful to know when describing the water cycle. Write each word from the word bank in one of the 3 categories.

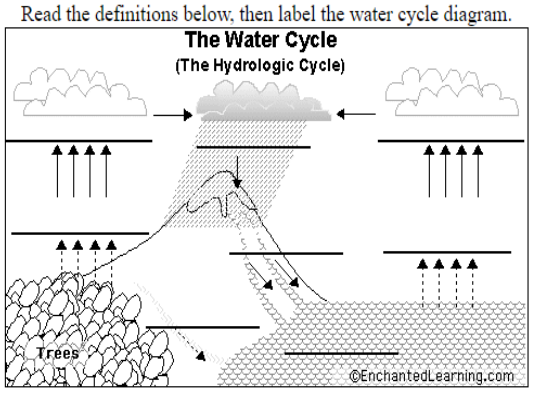
Word Bank: *Water* *Solid* *Liquid* *Gas* *Steam* *Water Vapor*
Energy *Matter* *Sunlight (solar energy)* *Gravity* *Atmosphere*
Rivers *Landforms* *Plants* *Glacier* *Ocean* *Living Things*
Decompose *Force* *Transpiration* *Condensation (condense)*
Precipitation *Crystallization* *Evaporation (evaporate)* *Accumulation*
Freeze *Melt* *Aquifer* *Scientific Models* *Energy Transfer*
Environment *Water Cycle* *Hydrologic Cycle* *Molecule*
Run-off *Groundwater* *Timescales* *Hydrosphere* *Volume*

Words I KNOW (I can define the word and use it in a sentence.)	Words I SORT OF KNOW (I've heard the word before, and can guess what it means)	Words I DON'T KNOW (Never heard the word before and no idea what it means!)

Vocabulary: Choose 5 words from your "sort of know" or "don't know" columns to define.

Word	Definition	Use it in a sentence	Picture/Symbol
Example: Decompose	to break down or be broken down into simpler parts or substances	Leaves decomposed on the forest floor, returning water back to the soil.	
1.			
2.			
3.			
4.			
5.			

Read the definitions below, then label the water cycle diagram.



Accumulation - the process in which water pools in large bodies (like oceans, seas and lakes).
Condensation - the process in which water vapor (a gas) in the air turns into liquid water. Condensing water forms clouds in the sky. Water drops that form on the outside of a glass of icy water are condensed water. (This term appears twice in the diagram.)
Evaporation - the process in which liquid water becomes water vapor (a gas). Water vaporizes from the surfaces of oceans and lakes, from the surface of the land, and from melts in snow fields.
Precipitation - the process in which water (in the form of rain, snow, sleet, or hail) falls from clouds in the sky.
Subsurface Runoff - rain, snow melt, or other water that flows in underground streams, drains, or sewers.
Surface Runoff - rain, snow melt, or other water that flows in surface streams, rivers, or canals.
Transpiration - the process in which some water within plants evaporates into the atmosphere. Water is first absorbed by the plant's roots, then later exits by evaporating through pores in the plant.

3, 2, 1 Summary!

3 relationships in the water cycle

For example: Plants take in water through their roots and return it to the atmosphere through transpiration.

1. _____
2. _____
3. _____

2 vocabulary words I want to remember (and write why you want to remember them)

For example: I want to remember the word hydrologic cycle because it is the term scientists use to describe the water cycle.

1. _____
2. _____

1 question about the water cycle:

For example: Does the water cycle require living things to make it work?

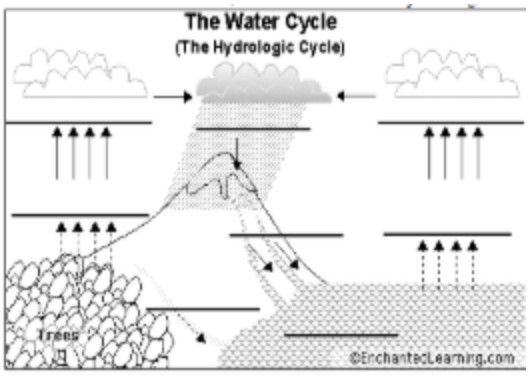
1. _____

Exit Ticket: Choose the best answer for each multiple choice question.

ILLUMINATE

Enter Student ID

Code: YZMZUMF



1. Look at the diagram above. What important feature is missing that provides the energy needed to start the water cycle?
    a. Nuclear power plant
    b. The Sun
    c. Electricity
    d. Clouds
2. The force of gravity is invisible on diagrams of the water cycle. Where is one place it DOESN'T have an effect?
    a. Rain falling from the clouds to the ground.
    b. Water soaking into the ground and accumulating as groundwater.
    c. Runoff from melting ice.
    d. Water vapor evaporating from the ocean.
3. What is the only thing in nature that can be found as a solid, liquid, and gas?
    a. Water
    b. Energy
    c. Matter
    d. Plasma
4. As time goes by, and water goes through the water cycle again and again, the amount of water on Earth -
    a. Goes up and down.
    b. Decreases.
    c. Increases.
    d. Stays the same.

Week 1 Day 2 (Tuesday, March 24)

Introduction

Hello Beautiful Humans,

Today you will continue your review of the water cycle including the influence of energy transfer and gravitational force. At the end of the lesson, you will:

- ❏ Complete your exit ticket on illuminate for a grade.
- ❏ Sign up for Office Hours if you need extra help.

Objectives

Scientists will be able to:

- ❏ Describe how water continually cycles between earth and the atmosphere.
- ❏ Describe how energy transfer from the sun and gravity affect the water cycle.

Think & Write

Directions: Visit the United States Geological Survey website (an agency that studies natural resources and how to keep them safe), read through the diagram by putting your mouse over a word in the water cycle, and fill out the chart below.

What do you See?	What do Think?	What do you Wonder?
List 3 different things	List 3 different thoughts	List 3 different questions

Independent Work

Read the following article by The Earth Resource Center and complete your SRP.

 Make sure you have meaningful jots that can assist you in completing your exit ticket.

Solar Energy and the Water Cycle

The earth's water supply is recycled in a process known as the water cycle, or **hydrologic** cycle. Water molecules continuously move from location to location in this cycle. The water cycle is important to weather, climate and all life on Earth.

Based on the introductory paragraph, what is the article about?
What is another way to say Hydrologic Cycle?

Focus Question: while you read, ask yourself ...

How is the water cycle driven by energy from the sun and the force of gravity?

Energy transfer from the sun warms water on Earth, which can evaporate into the atmosphere. In other words, the water cycle is driven by the energy from the sun or solar energy. This solar energy starts the cycle by evaporating water from the oceans, lakes, rivers, and even the soil. Other water moves from plants to the atmosphere through the process of transpiration.

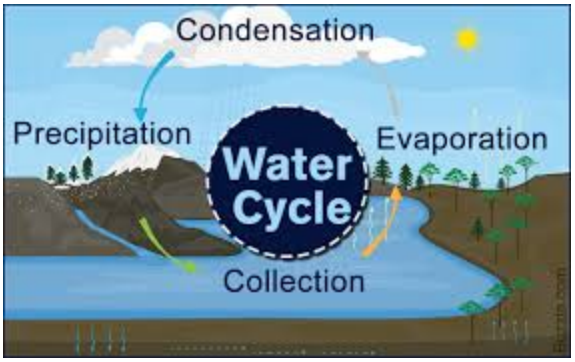
How does the energy from the sun drive the water cycle?

As liquid water evaporates or transpires, it forms water vapor and clouds, where water droplets cool down and eventually gain enough mass to fall back to Earth as precipitation. The precipitation then becomes run-off or groundwater (e.g., rivers, glaciers, oceans), or works its way back into surface reservoirs because gravity causes the water to move downhill.

Some liquid and solid water remains on land in the form of bodies of water and ice sheets. Some water remains in the tissues of plants and other living organisms, and this water only is released when the tissues decompose. Most of the water trickles down into the ocean.

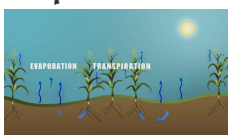
The water cycle is essentially a closed system, meaning that the volume of water that is in the hydrosphere today is the same amount of water that has always been present in the Earth's system.

How does gravity drive the water cycle?



Explain: pretend you are a water droplet, for each stage, explain what happens to the water. Remember to include how energy from the sun and gravity affect each stage.

*Example Transpiration	I was living inside of a pretty pink rose leaf until yesterday. The sun came out and was hot and bright all day. The energy from the sun warmed me up until I couldn't take it anymore and pop! I flew out of the rose and into the air.

	
Evaporation 	
Condensation 	
Precipitation 	
Collection 	

Follow the blue link below to complete your exit ticket on Illuminate

Quick Access Code

Enter: Student ID
Access Code: YGV4DF6

Week 1 Day 3 (Wednesday, March 25)

Hello 6th graders:

In this lesson, students will investigate how the water cycle could be considered a circle. This includes the phase changes within the water cycle with key vocabulary words including evaporation, condensation, precipitation, transpiration.

Learning Objectives: What should students know and be able to do as a result of this lesson?

1. The students will be able to explain how the water cycle is considered a circle

DO NOW: Water Cycle Vocabulary Unscrambler

A. aniaitpnsotrr _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

The process in which water moves through a plant and evaporates into the atmosphere

B. kela _ _ _ _ _

A body of relatively still water of considerable size, localized in a basin surrounded by land

C. mhstroepea _ _ _ _ _ _ _ _ _ _

The layer of air that surrounds the earth

D. aecoitosndnn _ _ _ _ _ _ _ _ _ _ _ _ _

Water droplets form because water vapor cools

E. cpaieotinpitr _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Rain, snow, sleet or hail

F. ffunro _ _ _ _ _ _

Water flowing on top of the land that eventually flows into lakes & the ocean

H. encao _ _ _ _ _

Bodies of saltwater that compose close to 75% of Earth's surface (hydrosphere)

G oeotivarapn _ _ _ _ _ _ _ _ _ _ _

The sun's heat turns liquid water into water vapor

H edrtawogunr _ _ _ _ _ _ _ _ _ _ _

Water found beneath Earth's surface

Reading Warm Up:

1.How does the water cycle affect our weather?

_____

_____

_____

2. How does the water cycle affect the climate?

The water on Earth now is the same water that's been on Earth since the beginning. The rain that falls on us is the same water that rained on the dinosaurs, King Tut, and George Washington. What makes that awesome feat possible? The water cycle. The water cycle is the process that re-circulates water so we can have bodies of water as well as clouds and precipitation.

The first step of the water cycle is evaporation. About 85% of the water vapor in the air comes from water that evaporated from the oceans. The other 15% comes from evapotranspiration, which is a catch-all term for water that evaporates from over land. This includes water vapor produced by plants during transpiration, water from lakes, streams, puddles and soil moisture, direct evaporation of snow and even water vapor from the breath of animals.

The second step of the water cycle is condensation. Now that the atmosphere is full of water vapor, that water vapor condenses into water droplets. Sometimes, like early in the morning, the water vapor condenses on the grass as dew and seeps back into the soil, ready to be evaporated again. But most of the water vapor condenses higher up in the air and forms clouds. Once the water droplets are in a cloud, two things can happen. Either the cloud will dissipate and the water droplets will become vapor again, or the cloud will grow and it will begin to precipitate.

The third and final step of the water cycle is precipitation. Precipitation includes all water that falls from the sky, both in liquid and frozen form, which reaches the ground. Once the precipitation makes its way to the ground it can end up soaking into the ground, run off into streams and lakes, become snow cover, be used by plants, be inhaled by animals or fall directly back into the ocean. Then the water cycle can begin again and continue for millions of years to come. Aside from the above steps

of the water cycle, there are also ways that water can be stored on Earth that play a role in the water cycle at various times throughout the year. Water can be stored in lakes, streams, glaciers, icebergs, and the ground.

As precipitation falls towards the earth, some of the water seeps into the ground, a process known as infiltration. The amount of water that seeps into the ground varies with several factors such as duration, type, and strength of precipitation, type of soil, slope of the land, and land cover. Duration and strength of precipitation play a role in the amount of water that the ground can hold and whether the water will seep into the ground or travel across the ground surface. Certain types of soils hold water better than others and can absorb more water. As the slope of the land varies, so does the amount of water that will be able to seep into the ground. If there is a steep slope, the water will be more likely to just run down the hill rather than get absorbed by the ground. If the ground has no slope, the water will be more likely to seep into the ground or remain above the ground (as over a flat road) and potentially cause flooding. The amount of water that the ground absorbs also will depend on the land cover. Vegetation impacts the speed of water that will move across a surface. More vegetation leads to slower flowing water.

The factors that impact infiltration also impact surface runoff. Runoff occurs when water flows across the ground surface. If no water is able to seep into the ground, the water will flow across the ground surface. This occurs many times near mountains as water flowing quickly down a mountainside is unable to be absorbed by the ground. If a certain type of soil does not absorb water very well or if the soil is already saturated, then the water remains on the surface. Clay is an example of a soil that absorbs water slowly in comparison to sandy soils. More runoff will occur over land with clay soil rather than land with sandy soil. Runoff can also occur during snow melts from mountainsides.

Task: A cycle is like a circle. In your own words explain how the water cycle compares to a circle.

_____

_____

Exit Ticket:

1. **Where does the energy for the water cycle come from?**
    a. **The spin of the Earth**
    b. **The moon**
    c. **Fossil fuels**
    d. **The sun**
2. **Which of the following is NOT a way that water moves from the land to the atmosphere?**
    a. **Evaporation**
    b. **Precipitation**
    c. **Sublimation**
    d. **Transpiration**
3. **What is the main process by which water moves from land to atmosphere?**
    a. **Evaporation**
    b. **Precipitation**
    c. **Transpiration**
    d. **Condensation**
4. **What is it called when plants release water that turns into vapor?**
    a. **Evaporation**
    b. **Sublimation**
    c. **Transpiration**
    d. **Condensation**

5. **What is the process called when water from ice or snow turns directly into vapor without melting?**
    a. **Precipitation**
    b. **Sublimation**
    c. **Transpiration**
    d. **Condensation**

Week 1 Day 4 (Thursday, March 26)

Name: **Date:**
Advisory:

Introduction

Hello Scholars,
Today you will continue your review of the water cycle including the influence of energy transfer and gravitational force. At the end of the lesson, you will:

- ❏ Complete your exit ticket on illuminate for a grade.
- ❏ Sign up for office hours if you need extra help.

Objective

Scientists will be able to:

- ❏ Write about the water cycle from the perspective of a water droplet.

Do Now

Directions: Over the last few days you have been reviewing the water cycle phases. Jot down each phase below!

Water Cycle Phases

1)
2)
3)
4)

Directions: Now, you are going to explain what happens to the water in each stage.

Example:
1) Evaporation - Water is heated by the sun and changed to gas
2)
3)
4)

Independent Work

Directions: You are going to use the information from the Do Now to describe the journey of a water molecule through the water cycle. GET CREATIVE! Give the droplet a name. Make it funny! What is the droplet thinking? Does he/she have friends? Where does he/she live?

Format:

- Paragraph 1- Introduce the water droplet (what's its name? who is it? what is it doing?)
- Paragraph 2- Explain evaporation (what happens to the droplet?)

  "I am a liquid water droplet in…"

  "I am starting to feel warmer from the sun…"

  "Now, I am changing to a…"
- Paragraph 3- Explain condensation (what happens to the droplet?)
- Paragraph 4- Explain precipitation (what happens to the droplet?)
- Paragraph 5- Explain transpiration (what happens to the droplet?)
- Paragraph 6- Explain how the cycle starts over again with evaporation
- Paragraph 7- Conclusion

Exit Ticket:

1) Condensation is not part of the water cycle
   a) True
   b) False

2) Snow is not an example of precipitation
   a) True
   b) False