

Global Precipitation Measurement Mission

Exploring the Water Cycle Capture Sheet

Name: _____

Period: _____

Water is found almost everywhere on Earth, from high mountain snowcaps and glaciers to oceans to freshwater on land and underground. Energy from the sun and the force of gravity drive the continual cycling of water. Gravity causes precipitation to fall from clouds, and causes water on land to flow downward through watersheds.

I. Teacher Demonstrations:

Evaporation:

1. _____ is the source of energy that drives Earth's water cycle.
2. As heat energy was added to the water, it changed state from a _____ to a _____. This _____ is also called _____.
3. As more energy is added to the water, the water molecules move _____ and farther apart.
4. When water vapor is warmer and less dense than the surrounding air, it _____.

Transpiration:

1. The sealed, plastic bag around the plant had _____ in it.
2. This happened because during the process of transpiration, a plant takes in water through its roots. Unused water is given off as _____.

Condensation:

1. As water vapor cools it _____. This process changes water's state from _____ to _____.
2. The water vapor in the bottle condensed onto the _____ nuclei. (*The smoke particles.*)
3. Millions of these tiny little droplets form a _____.

Infiltration:

1. Infiltration occurs when water seeps into Earth's land surface. The water fills pockets of _____ in the soil and rock. Water infiltrates because of the force of _____.
2. When the water reaches an _____ layer, it creates an _____.

Precipitation:

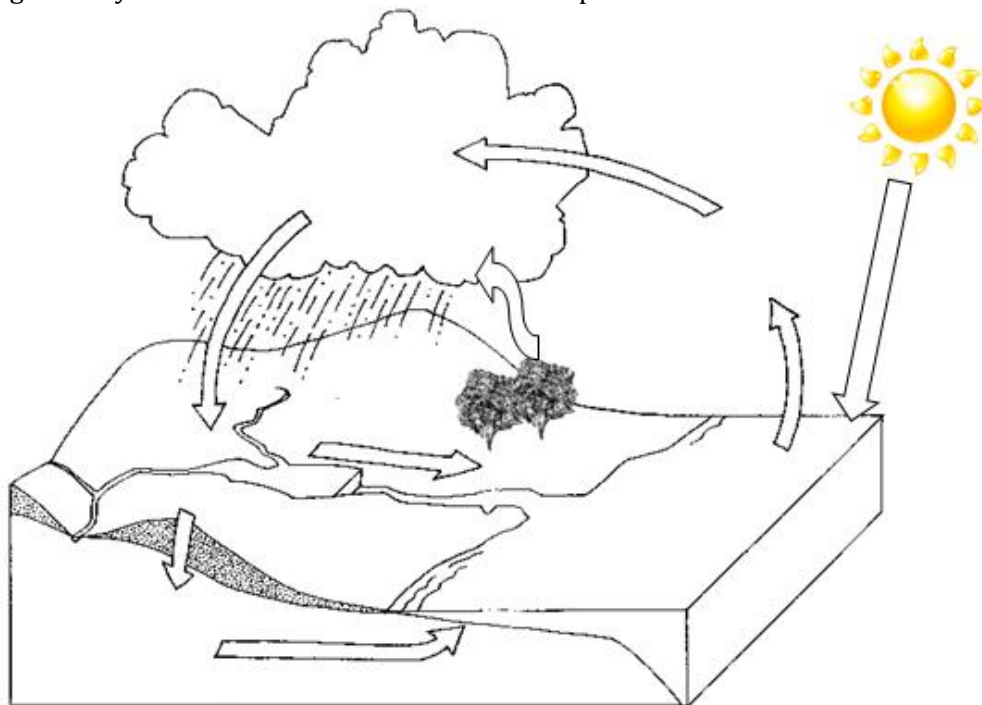
1. When a cloud's droplets join together and get too big to overcome _____, they fall from the cloud as _____. (*Rain, snow, sleet or hail*)
2. Excess precipitation will create _____. This occurs because _____ causes water to flow downhill.

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Freshwater from Saltwater Demo:

1. Look at the "Ocean" container in which the teacher evaporated the water. What do you observe? _____
2. Using what you just observed, explain why clouds and precipitation contain freshwater even though much of the water vapor comes from oceans and seas.

II. Water Cycle Video. There is no audio, so be sure to watch carefully as the sun comes up and heats the land and water, and then goes through the whole water cycle. Be sure to label the arrows on your water cycle diagram as you watch. Use the word bank for help.



Word Bank:

Evaporation
Condensation
Precipitation

Run off
Groundwater Runoff
Transpiration

Infiltration
Solar Radiation

1. Which parts of the water cycle require energy from the sun?

2. Which parts of the water cycle require the water molecules to give away heat energy (cool down)?

3. Which parts of the water cycle are caused by the force of gravity?

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II. Describe the Water Cycle -- Mini-Project **Due Date:** _____

For this mini-project, you will describe the movement of a water drop through the water cycle. The drop may begin anywhere in the cycle and must go through at least two phase changes, (i.e. liquid to gas and back to liquid or solid). You must also include how gravity and the sun's radiation drive the cycle.

You have 2 options for this project:

1. You may make a comic strip with a molecule of water as the main character.
 - a. The comic must include text that explains what is happening in each frame.
 - b. The text can be dialogue 'spoken' by the drop, or written as captions at the bottom of the frames.
2. You may make a mini-poster with a diagram of the water cycle. (8.5" X 11" maximum)
 - a. The diagram should not look just like the one we used in class. It should have the drop moving from one step to another.
 - b. Each step in the cycle needs to have text that describes what is happening to the drop. This text can be 'spoken' by the drop, or written as a caption near the drop.

Electronic Options for those who prefer to use a computer:

- A Glogster poster.
- Computer generated comic strip.
- Idea of your choice. This **MUST** be approved in advance.

This assignment will be graded based upon this rubric:

Water Cycle Mini-Project				
	4	3	2	1
Concept Understanding	The student demonstrated a full understanding of how a water molecule can move through the water cycle. Student included the role of the sun and gravity.	The student demonstrated a good understanding of how a water molecule can move through the water cycle. Student included the role of the sun and gravity.	The student demonstrated some understanding of how a water molecule can move through the water cycle. Student included the role of the sun and/or gravity.	The student demonstrated little understanding of how a water molecule can move through the water cycle. Student did not include the role of the sun or gravity.
Proper Use of Terminology	The student properly used all the key terms associated with the water cycle.	The student properly used most of the key terms associated with the water cycle.	The student properly used some key terms associated with the water cycle.	The student properly used two or fewer key terms associated with the water cycle.
Writing Skills	The student fully communicated the concepts in the water cycle with few grammar and/or spelling errors.	The student communicated well the concepts in the water cycle with few grammar and/or spelling errors.	The student adequately communicated the concepts in the water cycle with many grammar and/or spelling errors.	The student poorly communicated the concepts in the water cycle with many grammar and/or spelling errors.
Neatness and Legibility	All of the following are true: The project is neat. All writing is legible. The sequence is easily followed. The project is colorful.	Three of the following are true: The project is neat. All writing is legible. The sequence is easily followed. The project is colorful.	Two of the following are true: The project is neat. All writing is legible. The sequence is easily followed. The project is colorful.	One of the following is true: The project is neat. All writing is legible. The sequence is easily followed. The project is colorful.

Total Score: _____