

Drop

Biography of a Water
Molecule
GRASPS
Based

Overarching Question – How does a water molecule reinvent itself during the water cycle?

Goal – Students will identify the stages of the water cycle.
Students will correlate the stages of the water cycle with atmospheric conditions.
Students will understand the importance of the water cycle in their lives.

Role – Students are authors that work for a weather based website. They have been sent to write a biography on Drop, a water molecule.

Audience – The biographers (students) are writing the biography for an editor, who will then send the book out for publishing.

Situation – Students have been asked to interview Drop on his life as a water molecule. They are to begin somewhere in the water cycle, and cycle through all of the stages. The biography should include geographical and environmental information, such as names of bodies of water or animals. Also, there should be an integration of the roles water plays in atmospheric conditions, such as developing clouds or storms.

Product – Students will create a written or digital biography. The biography should include all information – water cycle, location, atmospheric conditions, real life contexts. There should also be several “photos” of Drop throughout the biography, depending on which stage he is in during the water cycle. The biography should indicate that the students have an enduring understanding of the water cycle and the part it plays in atmospheric conditions, as well as applications to their lives.

Standards – A rubric is attached to this activity.

Correlated Literature (with Lexiles) (Audio capable)

(All literature can be found on the Galileo website unless otherwise noted.)

STREEP, A. (2011). Repair the Water Cycle. *Popular Science*, 278(5), 50 (1170) (Audio capable)

Williams, R. (1999). The tortoise and the hare. *Weatherwise*, 52(1), 28 (1090) (Audio capable)

Ornes, S. (2009). Not bone dry after all: the moon holds water. *Science News for Kids*. Retrieved from <http://www.sciencenewsforkids.org/2009/10/not-bone-dry-after-all-the-moon-holds-water/> (Not Galileo)

Chandler, B. (2004). FROGGY WEATHER. *Weatherwise*, 57(1), 42. (1010) (Audio capable)

Foley, R. (2003). It's raining, I'm storing! *Mother Earth News*, (199), 128. (1070) (Audio capable)

GRASPS Drop Tiers

Students may be grouped accordingly after evaluating a pre-assessment. You may use different names for the groups, such as colors – Red Tier (Tier 1), Blue Tier (Tier 2), and Green Tier (Tier 3). Groups may comprise of 2-4 students.

Tier 1 – Scored 0 - 64% on the pre-assessment

Tier 2 – Scored 65 - 89% on the pre-assessment

Tier 3 – Scored 90% or higher on the pre-assessment

Tier 1 – Students will be provided with a list of required concepts and terms expected. Students will use templates of the products due to organize their data. Once the information is organized, performance tasks may include either a written biography with a pictorial describing the “life cycle” of Drop, or they may create a photo album including the water cycle and corresponding pictures.

Tier 2 – Students will be provided with a list of required concepts and terms expected. Once completed, products may include either a written biography with a pictorial describing the “life cycle” of Drop, or they may create a photo album including the water cycle and corresponding pictures. Students may choose to use PowerPoint or a word processor to complete their work. Pictures may be drawn, cut from magazines, or printed/cut and pasted from the Internet.

Tier 3 – Students will be provided with a list of required concepts and terms expected. Students will also integrate the movement of Drop through household use. Using a graphic organizer that they created, students will create a biography. Students are to compile their information into a Museum Box (<http://museumbox.e2bn.org/index.php>). Students will present their work to the class.

Other Internet websites that could be integrated are

- Prezi – zoomable presentation application (www.prezi.com)
- Glogster – an online poster maker (<http://edu.glogster.com/>)

As an extension for all students, the information from the Drops biography could be added into a class blog for sharing with others. This is a great opportunity for students to collaborate with students across the nation, as well as community members or scientists.

Graphic Organizer

Use this organizer to sort out your ideas. Then, use it to write your biography.

Life Stage	Location	Atmospheric Condition	Environment

Drop

I, _____, along with my partner _____, are here today to interview Drop, a water molecule. We will be learning about his life so far in this in-depth biographical interview. Drop, start us at the beginning.....

Well, the beginning of my life starts with the process of _____, which caused me to be _____ (states of matter). During this age, I was (very close to my relatives, far, far away from my family). The environment in which this occurred was _____, which is identified by (animal, plants, people, mountains, forests) _____. This is important to know because _____.

From that point, I experienced _____ (water cycle step), causing me to be _____ (states of matter). During this age, I was (very close to my relatives, far, far away from my family). The environment in which this occurred was _____, which is identified by _____ (animal, plants, people, mountains, forests). This is important to know because _____.

After _____ (previous water cycle step), _____ (water cycle step) occurred. This stage in my life causes me to be _____ (states of matter). My family was (close to me/far away). The scene changed again, and now I am experiencing _____ (environment). In this environment, I was able to interact with _____ (animal, plants, people, mountains, forests). Why is this important? It is important because _____

_____.

Currently, I am experiencing _____(water cycle step).
_____ (states of matter) is my current look. At this time,
my other family members of water droplets is (close at home, on vacation far, far away).
Because I am _____ (current water cycle step), I am enjoying a new
place to live in _____ (environment), where I am very
important to _____ (animal, plants, people, mountains, forests) because
_____.

So, this is my story. It does not really end here, because next I will
experience _____ (water cycle step), which will change me into
_____ (states of matter). The family will (have a reunion and be close
again, decide to move to Antarctica).

Wow, Drop, that was exciting!!!! _____ (group member) and I look
forward to sharing your story, as well as the picture you have brought us. Thank you!!!!

The End

Drop - A Life Story

Teacher Name: _____

Student Name: _____

Class: _____ Date _____

CATEGORY	4	3	2	1
Focus on Assigned Topic	The entire story is related to the assigned topic and allows the reader to understand much more about the topic. Several real world contexts are accurately addressed. High order thought is clearly evident.	Most of the story is related to the assigned topic. The story wanders off at one point, but the reader can still learn something about the topic. A few real world contexts are accurately addressed. Some high order thought evident.	Some of the story is related to the assigned topic, but a reader does not learn much about the topic. A few real world contexts are accurately addressed. Little high order thought evident.	No attempt has been made to relate the story to the assigned topic. Little to no real world contexts are accurately addressed. Little to no high order thought evident.
Accuracy of Facts	All facts asked for are included, and are accurate.	Almost all facts asked for are included, and are accurate.	Almost all facts asked for are included, and are somewhat accurate.	There are several factual errors in the story.
Writing Process	Student devotes a lot of time and effort to the writing process (prewriting, drafting, reviewing, and editing). Works hard to make the story wonderful.	Student devotes sufficient time and effort to the writing process (prewriting, drafting, reviewing, and editing). Works and gets the job done.	Student devotes some time and effort to the writing process but was not very thorough. Does enough to get by.	Student devotes little time and effort to the writing process. Doesn't seem to care.
Creativity	The story contains many creative details and/or descriptions that contribute to the reader's enjoyment. The author has really used his imagination.	The story contains a few creative details and/or descriptions that contribute to the reader's enjoyment. The author has used his imagination.	The story contains a few creative details and/or descriptions, but they distract from the story. The author has tried to use his imagination.	There is little evidence of creativity in the story. The author does not seem to have used much imagination.
Illustrations	Original illustrations are detailed, attractive, creative, and relate to the text on the page.	Original illustrations are somewhat detailed, attractive, and relate to the text on the page.	Original illustrations relate to the text on the page.	Illustrations are not present OR they are not original.

Points earned _____ out of 20 Grade _____

Common Core

L6-8WHST2: Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

- a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
- b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
- c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Establish and maintain a formal style and objective tone.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented.

L6-8RST1: Cite specific textual evidence to support analysis of science and technical texts.

L6-8RH2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.

Georgia Performance Standards

S6E3. Students will recognize the significant role of water in earth processes.

- b. Relate various atmospheric conditions to stages of the water cycle.