Name_____

CASE

Project 4.3.1 The Story of Water

Purpose

The water cycle plays an important role in your life every day. You may take a shower, have breakfast on clean dishes, walk to school in the rain, drink a bottle of water, and plan a snowboarding trip for the weekend all in one morning without even considering the water you use. Throughout the day, you see and use many sources of water.

Water moves through a cycle in different forms. Water evaporates into a gas in the atmosphere, condenses as a liquid into rain, and can freeze into a solid when exposed to low temperatures. Plants and animals are dependent upon water for life. Plants absorb water through their roots and release water through a process called transpiration. Animals consume water and release water through breathing and waste.

Just as water passes through organisms, it moves across and through soil. Soil filters water as it moves towards underground storage areas called aquifers. Water flowing across the surface through rivers and streams will eventually reach lakes and oceans. Water underground is pumped to the surface using well and irrigation technology. Surface water evaporates into the atmosphere.

Have you ever wondered if rain is new water? Or where the water from a pond goes in the summer? Did you ever consider that several plants and other animals might have consumed the groundwater you were drinking before it gets to you? Just what happens to a drop of water over time?

Materials

Per pair of students:

- Water Cycle cards
- Number cube

Per student:

- *Project 4.3.1 Evaluation Rubric*
- Pencil
- *Agriscience Notebook*

Procedure

You will simulate the flow of a drop of water through the water cycle. After playing a brief game to determine how your droplet of water moves through the water cycle, you will write a story about the life of your water drop. The cards for the game will use a fictitious name for a town called Fruitvale. You will share the set of cards and number cube with a classmate.

Part One – Journey Through the Water Cycle

When instructed to do so by your teacher, randomly select a Water Cycle card. Record the station name on *Project 4.3.1 Storyboard*. Read the description of the station and choose a form and location for your droplet of water. If choosing a form and location is difficult, turn the card over, roll the number cube, and use the suggestion provided. When you have collected information for your first station, roll the number cube to determine where you will go next.

Continue from station to station until you have visited six stations. You will go to some stations more than once. You may even remain at the same station for a turn. You may not get to all five stations. When you go to a station where you have already been, choose a different location for your drop.

When you have been to six stations and have recorded the information, begin brainstorming ideas to connect the stations and bring your story together. Use the space provided on *Project 4.3.1 Storyboard* to record your brainstorm ideas for each station.

Story Criteria:

- Your drop of water changes location six times.
- You demonstrate understanding of the changes occurring to the water drop as it moves through the water cycle.
- Your story includes terminology appropriate for the processes within the water cycle, such as transpiration, infiltration.

Part Two – Developing Your Story as a Droplet of Water

Write a rough draft of your story. Write your story in complete sentences consisting of at least five paragraphs including an introduction, body, and conclusion. Your story should meet all of the criteria outlined above. Use Google drawing or other concept mapping software to develop an illustration of the journey your droplet of water takes through the water cycle.

Part Three – Peer Review

Your teacher will assign you a partner. Exchange stories with your partner and read his or her story. Review the content and composition of the story. Use *Project 4.3.1 Evaluation Rubric* to assess the story and provide suggestions for improvement.

Part Four – Writing the Final Draft

Using the feedback from your partner, review your story and make the appropriate changes. Use *Project 4.3.1 Evaluation Rubric* to self-assess your story and make further revisions. When you have completed your revisions, submit your story and your illustration to your teacher.

Conclusion

1. Based on what you have experienced, how does the ability of water to change form from solid to liquid to gas contribute to the water cycle?

It's different forms can help all of the necessary needs of the entire world.

2. Using your knowledge of the water cycle, what happens to water that disappears from ponds or other areas?

It evaporates.

Source: Lab-Aids. (2004). *Groundwater contamination: Trouble in Fruitvale*. Ronkonkoma, NY: Author.

Name_____

Project 4.3.1 Storyboard

Station 1 Intro	**Station 2 First Paragraph**	**Station 3 Second Paragraph**
Form: An underground river	Form: Lake	Form: Cloud
Location: Running underneath the *Eat 'Em Up Berry Farm*	Location: In the woods around Fruitvale	Location: Above the lake
Story Ideas: Underneath the farm of *Eat 'Em Up Berry Farm*, there was a river that no one knew about.	Story Ideas: The underground river runoffs into a lake, which is groundwater, in the woods just outside of Fruitvale. The plants don't have to use transpiration with the constant flow of water.	Story Ideas: The water from the lake evaporates into a cloud in the atmosphere that is floating right above it.
Station 4 Third Paragraph	**Station 5 Third Paragraph**	**Station 6 Conclusion**
Form: Snowflake	Form: Blood	Form: Frozen soil
Location: Mountains north of Fruitvale	Location: On top of the mountain	Location: Inside the mountain
Story Ideas: After the cloud move over to a mountain, it condensates and snows.	Story Ideas: With the precipitation, some of the snow freezes while the rest stays fluffy. An elk licks some of the snow off of it's paw, but gets shot by a hunter and runs off.	Story Ideas: Once the animal has completely stopped running, the blood percolates and infiltrates the ground. The blood seeps in to the frozen soil.