5E Water Cycle Lesson Plan 2

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Subject area/course/grade level: Science /6th grade

Standards (State and ISTE Standards for Students):

State Standards:6th/ Earth's Systems

7. Use models to construct explanations of the various biogeochemical cycles of Earth (e.g., water, carbon, nitrogen) and the flow of energy that drives these processes

ISTE Standards for Students

3a- Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

3C- Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.

4b- Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks

6a Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

6d Students publish or present content that customizes the message and medium for their intended audiences.

7a- Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.

7b- Students use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.

Objectives:

Students will be able to use models to describe how Earth's water moves through the water cycle.

Differentiation Strategies:

How will the lesson address the various learning styles of the students and the needs of those with special needs?

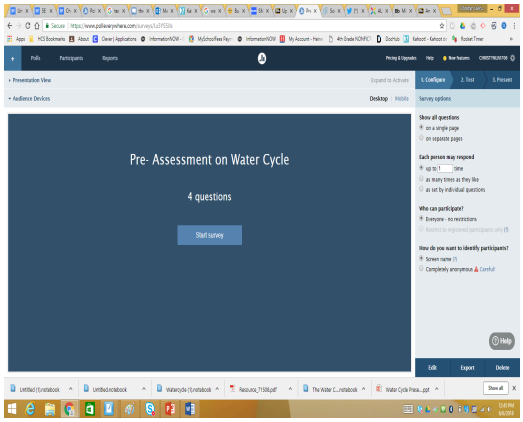
This lesson addresses the following learning styles. Students with special needs will also be able to work with peers.

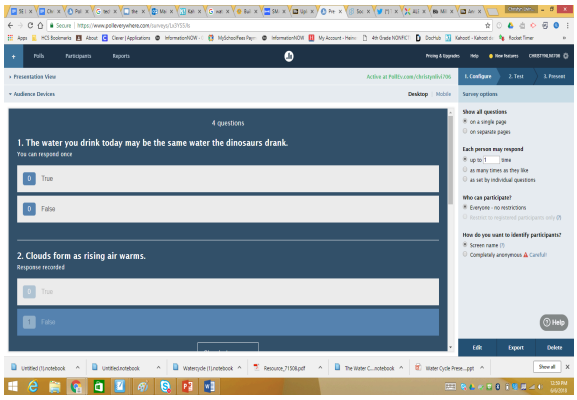
- **Visual (spatial):** Videos, Smartboard lesson, water cycle diagrams, name generator
- **Aural (auditory-musical):** Videos, Thirstin's Water Cycle Adventure, Water Cycle Song
- **Verbal (linguistic) speech and writing:** Group Water Cycle discussion, Google Form Submission, web page, brochure

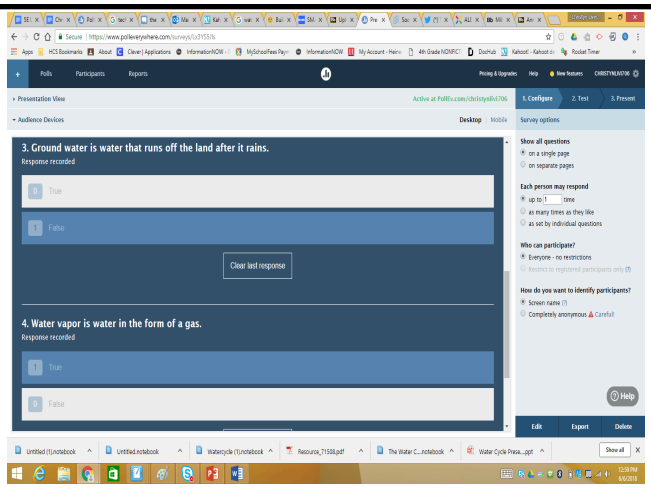
- **<u>Physical</u> (kinesthetic):** Interactive Water Cycle Activities (Vortex, Thirstin's Water Cycle Adventure, Natural Water Cycle Game), Gestures with Water Cycle Song
- **<u>Social</u> (interpersonal):** Thirstin's Water Cycle Adventure, Group Discussions of the water cycle. Kahoot in team mode, and web page assignment.
- **<u>Solitary</u> (intrapersonal):** Web page assignment

ENGAGEMENT:

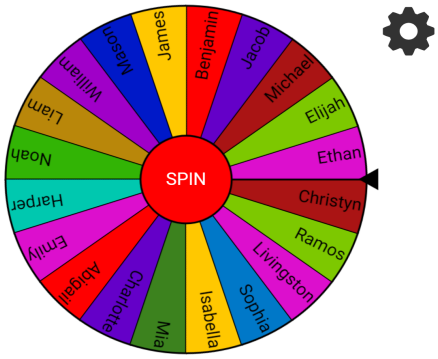
Students will be given a Pre- Assessment through Poll Everywhere (Water Cycle Poll) to see what they already know and understand about the water cycle.



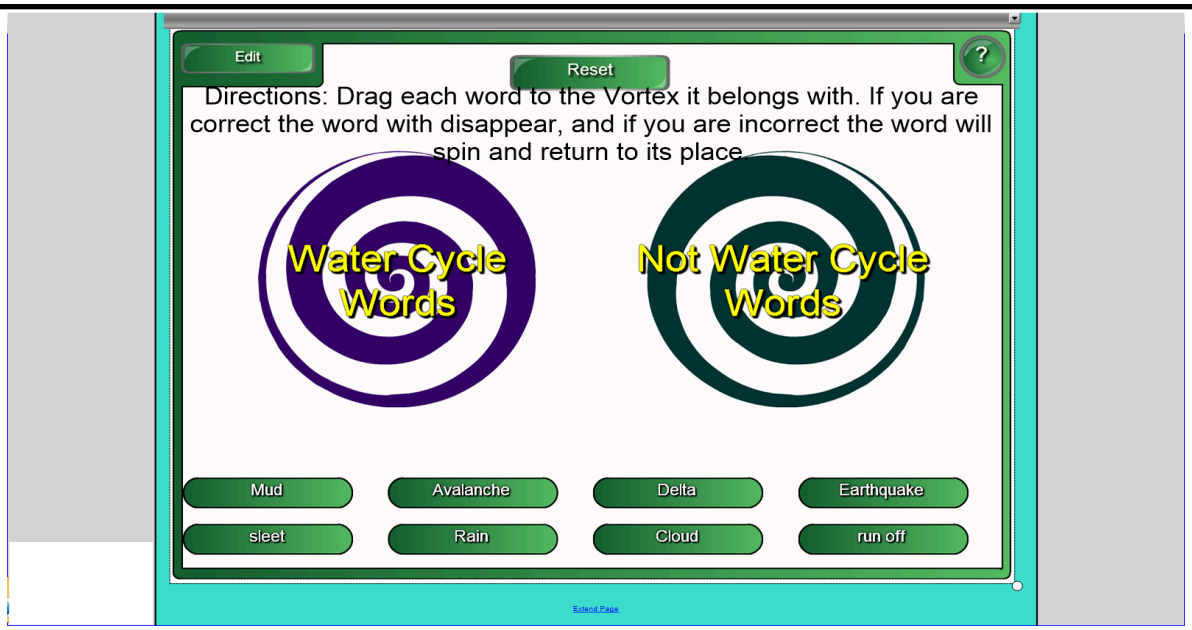




After, students participate in polls. The teacher will use the [Random Name Selector] to have students come to the board to identify words associated and not associated with water using an interactive smartboard activity.



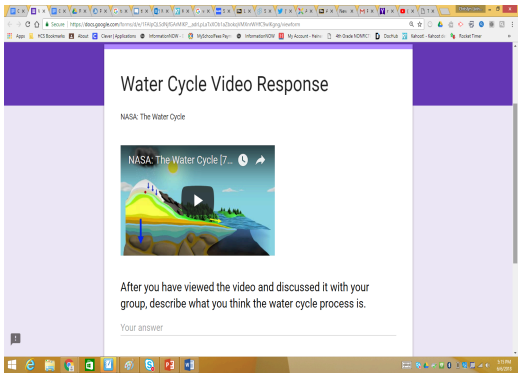
Students will do this activity using an interactive smartboard vortex. Students will come to the board and drag each word to the vortex it belongs with. If students are correct the word will disappear. If incorrect, the word will not disappear.



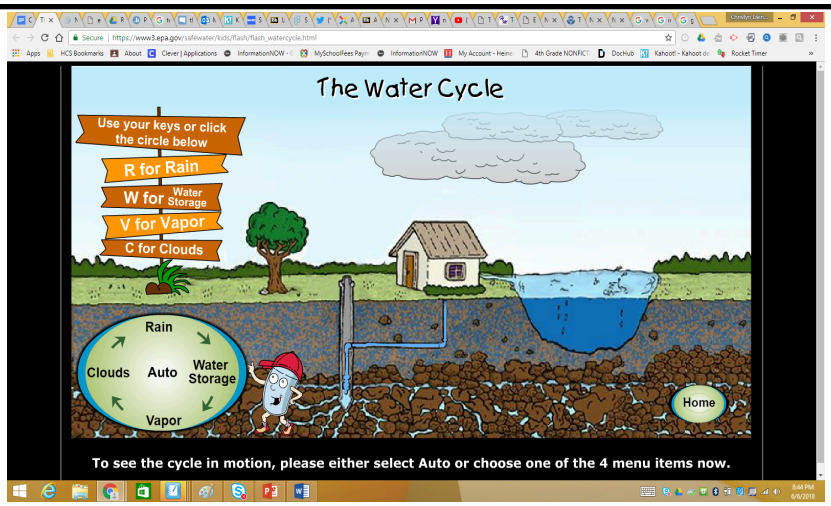
Once students have completed the poll and vortex activities, they will begin to explore the water cycle process.

EXPLORATION:

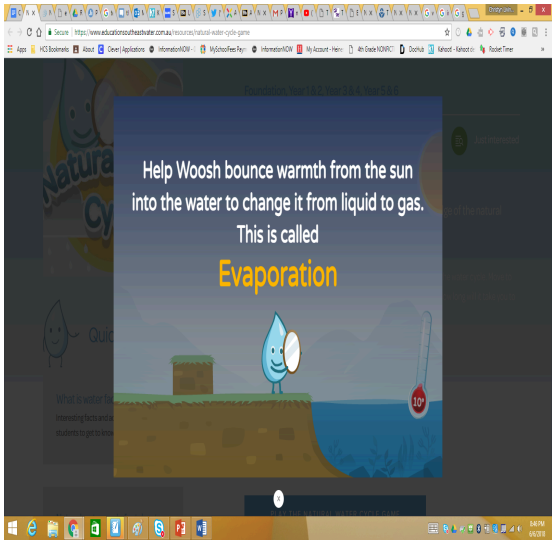
The students will watch a water cycle video. Water Cycle Video The video does not contain words, only animations of the water cycle process. Students will be asked to discuss the video with their group. Students will work together to try to explain what happens during the water cycle. Students will explain the water cycle process by submitting a Google Response Form. . Google Response Form (Video Included) Each group will be allowed to share what they think the process of water is based off of the video.

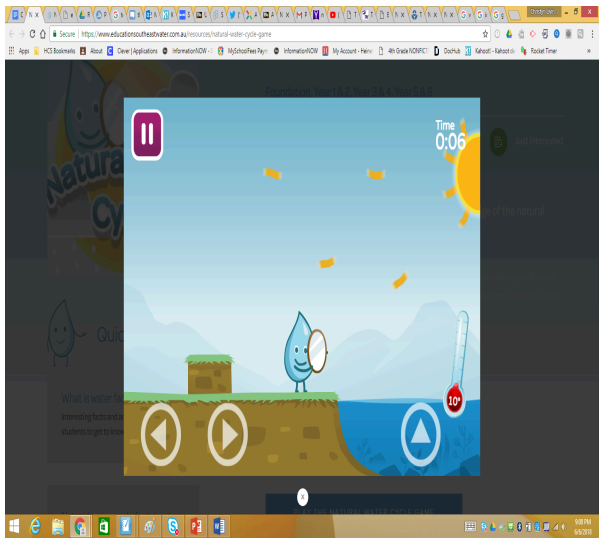


After students have submitted google forms and we have discussed responses, students will work together to explore the water cycle further with Thirstens Interactive Water Cycle Adventure Students will click on the sign that says R for\Rain to learn more about precipitation. Once students understand precipitation, they will learn about collection. By clicking on the sign that says Water Storage students are able to explore how water is collected and its role in the Water Cycle. After collection, students will explore evaporation by clicking on the sign that says Vapor. Finally, students will explore condensation and its role in the water cycle by clicking on the sign that reads Condensation.

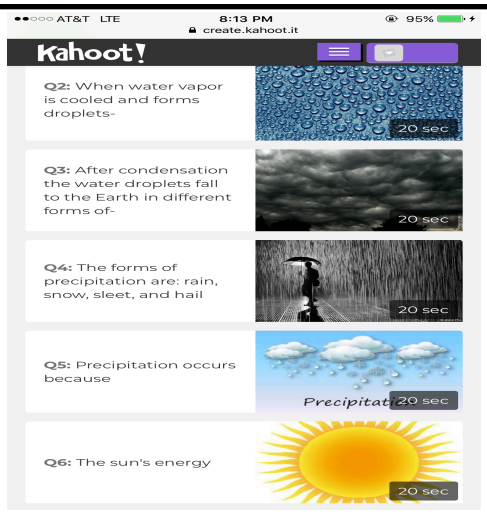


Once students have completed Thirstin's water cycle adventure, they will work together to explore the water cycle by playing the Natural Water Cycle Game. Students will help Whoosh bounce warmth from the sun into the ocean to start the water cycle and move to the next level to melt the snow and return the water to the ocean.





After a few minutes of exploration, students will be assessed using the Water Cycle Kahoot activity to see how much they learned during engagement and exploration. Water Cycle Kahoot



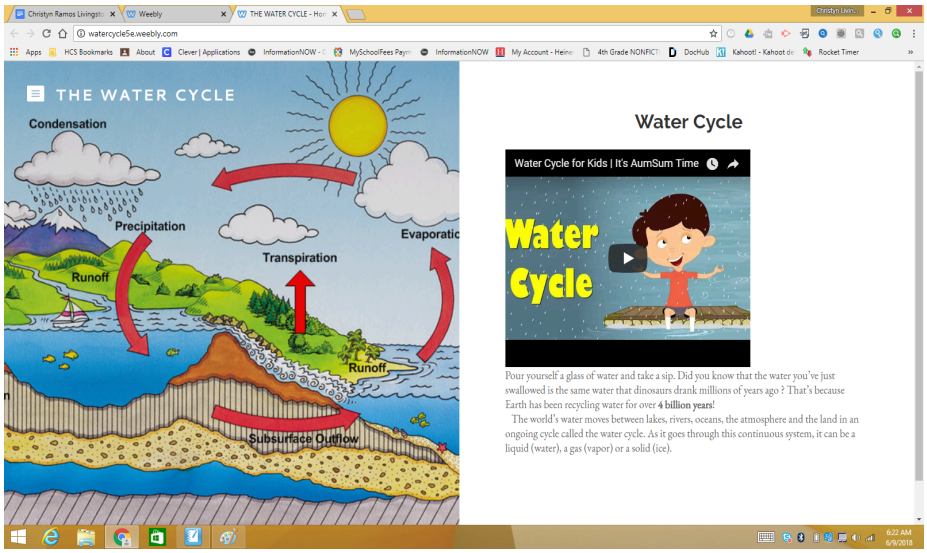
EXPLANATION:

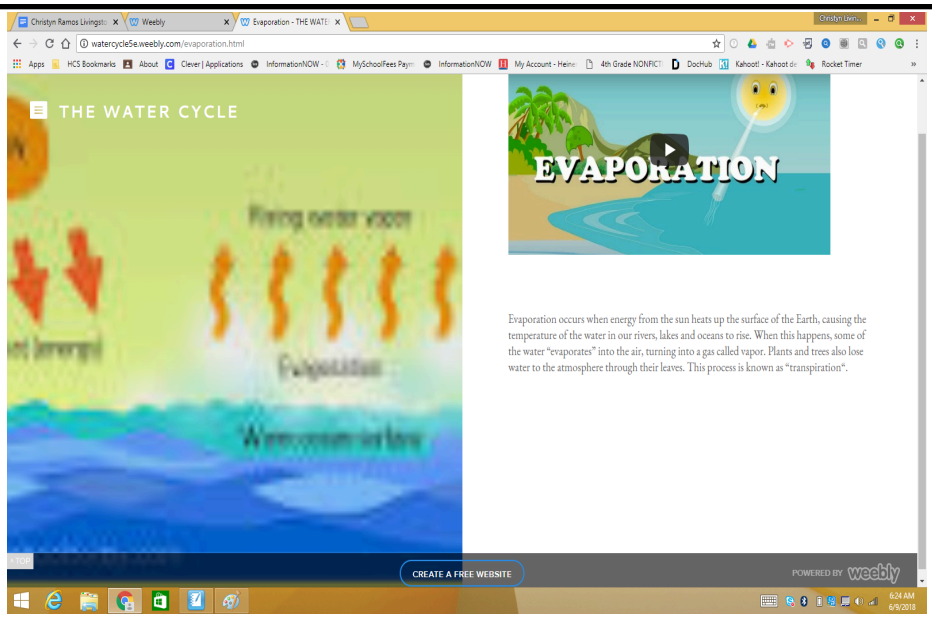
After students have explored the water cycle, the teacher will ask questions and teach the water cycle vocabulary and content by using an interactive smart notebook that will ask questions, cover vocabulary, content, and diagrams. Water Cycle Lesson Screen Capture

ELABORATION:

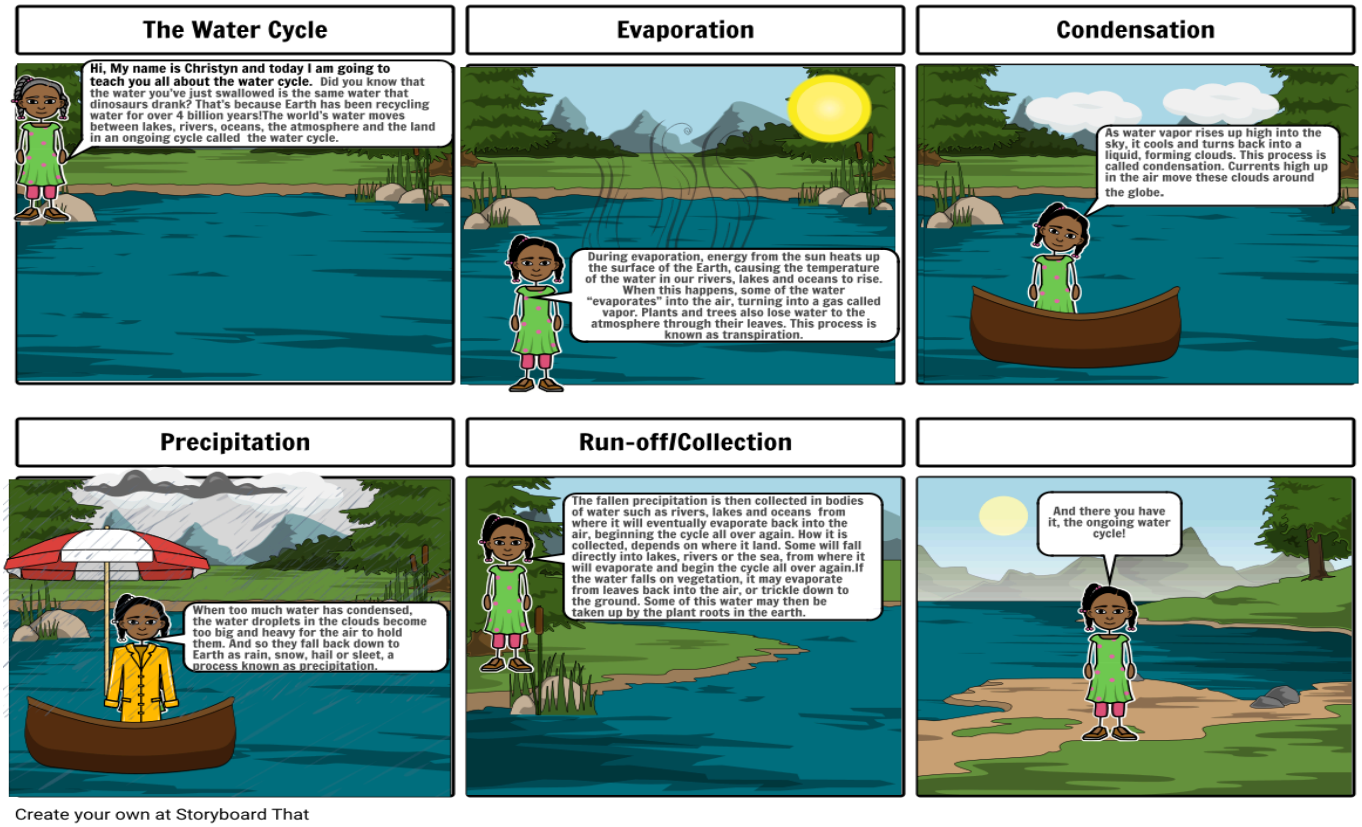
Once students have been taught the water cycle. They will be given two assignments to show what they have learned about the water cycle.

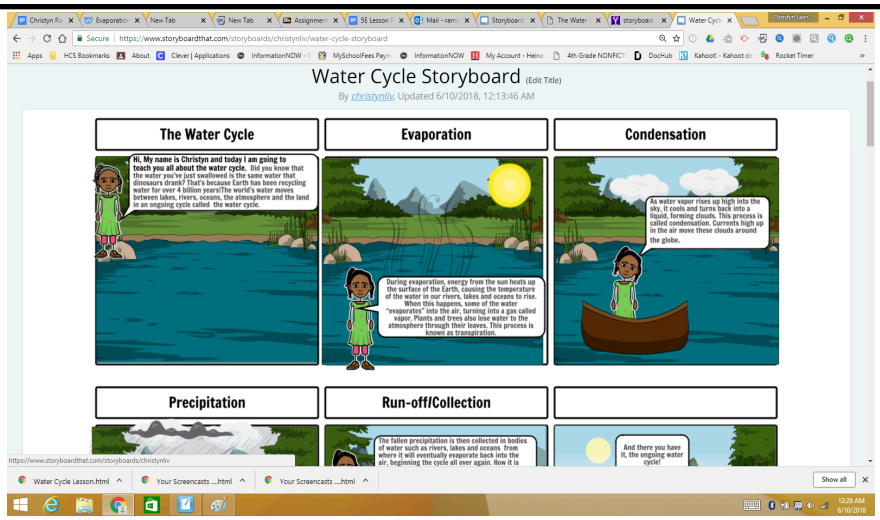
Assignment 1: Students will work in groups to create a website that explains the Water Cycle using Weebly. The website should include five pages (Introduction, Evaporation, Condensation, Precipitation, and Run- Off) Each page should include a video, image, and description of what happens during that part of the water cycle in their own words. Example of Water Cycle Website

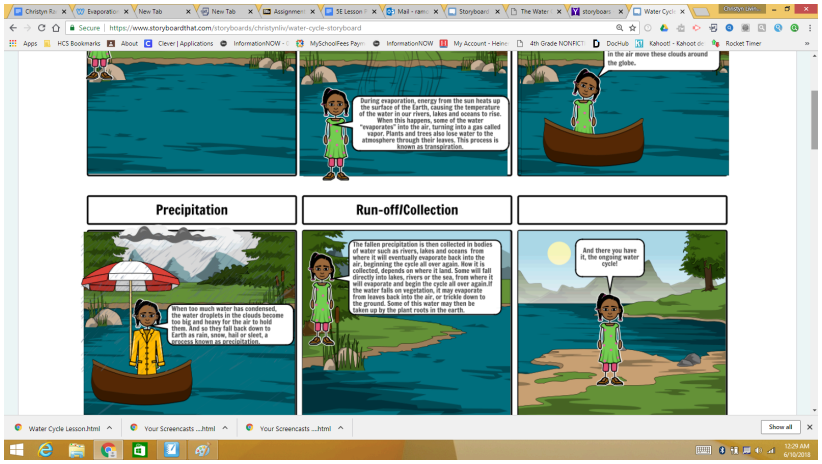




Assignment 2: Students will work independently to creatively create a Storyboard that explains the water cycle process using Storyboard That. Students will be required to have 5 cells. (Introduction, Evaporation, Condensation, Precipitation, and Run-off) Each cell should contain the title, picture/illustration that represents the title of the cell, and a description of the process in their own words shown in each cell.







EVALUATION:

Students will be assessed during the following activities:

Engagement- Poll Everywhere, Vortex Activity

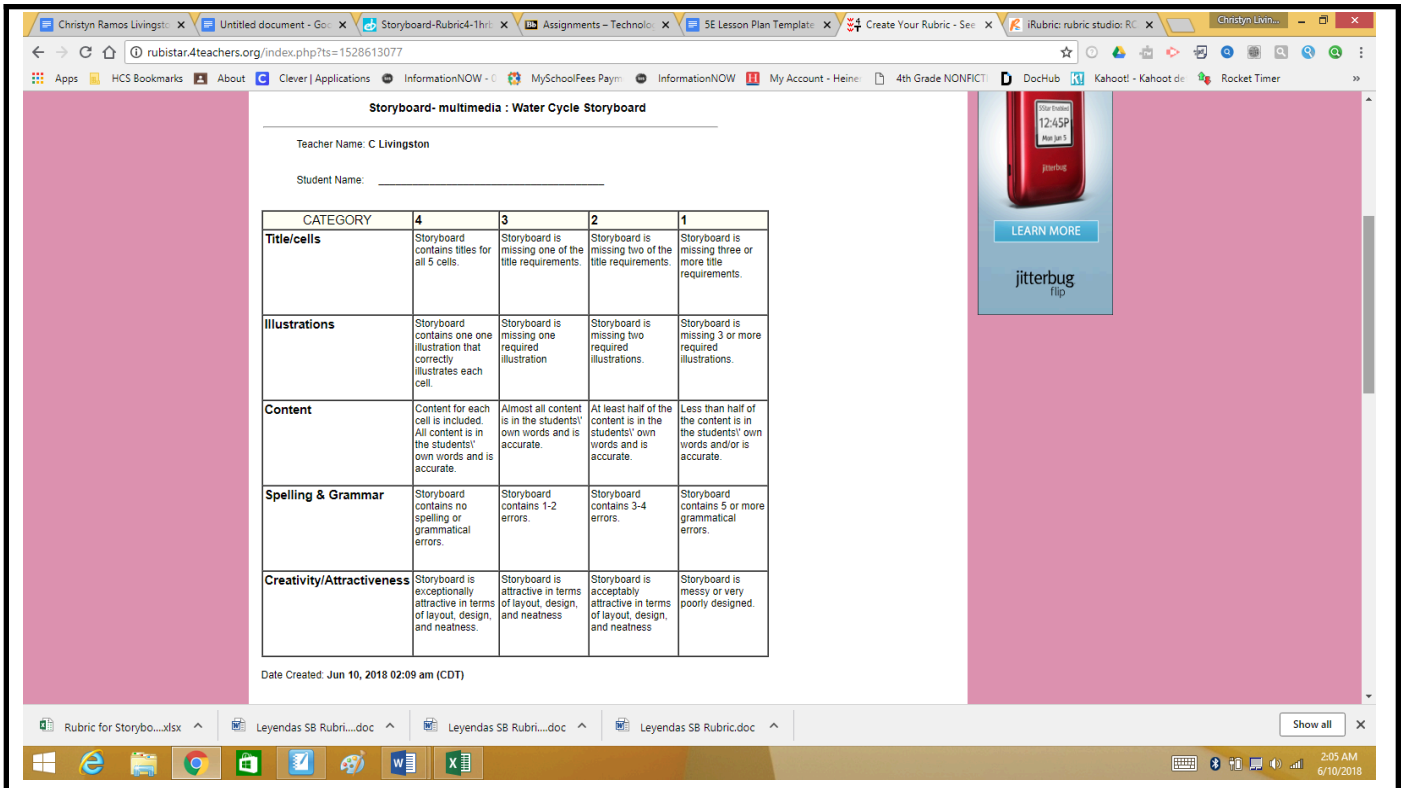
Exploration- Google Response Form from the water cycle video, Kahoot (Water Cycle)

Explanation- Responses to Interactive activities during Smart Notebook lesson

Elaboration- Group Webpage Assignment, Independent Storybook Assignment

Rubric-Website Water Cycle Website Rubric

Rubric- Storyboard Rubric for Storyboard



Storyboard- multimedia : Water Cycle Storyboard

Teacher Name: **C Livingston**

Student Name: _____

CATEGORY	4	3	2	1
Title/cells	Storyboard contains titles for all 5 cells.	Storyboard is missing one of the title requirements.	Storyboard is missing two of the title requirements.	Storyboard is missing three or more title requirements.
Illustrations	Storyboard contains one one illustration that correctly illustrates each cell.	Storyboard is missing one required illustration	Storyboard is missing two required illustrations.	Storyboard is missing 3 or more required illustrations.
Content	Content for each cell is included. All content is in the students\' own words and is accurate.	Almost all content is in the students\' own words and is accurate.	At least half of the content is in the students\' own words and is accurate.	Less than half of the content is in the students\' own words and/or is accurate.
Spelling & Grammar	Storyboard contains no spelling or grammatical errors.	Storyboard contains 1-2 errors.	Storyboard contains 3-4 errors.	Storyboard contains 5 or more grammatical errors.
Creativity/Attractiveness	Storyboard is exceptionally attractive in terms of layout, design, and neatness.	Storyboard is attractive in terms of layout, design, and neatness	Storyboard is acceptably attractive in terms of layout, design, and neatness	Storyboard is messy or very poorly designed.

Date Created: **Jun 10, 2018 02:09 am (CDT)**

Rating Scale 16-20-ptss Grade 90-100
11-15 pts 80-89
6-10 pts 70-79
1-5 pts grade 60

References:
Bybee, R.W. et al. (1989). *Science and technology education for the elementary years: Frameworks for curriculum and instruction.* Washington, D.C.: The National Center for Improving Instruction.
Bybee, R. W. (1997). *Achieving Scientific Literacy: From Purposes to Practices.* Oxford: Heinemann.
National Research Council. (1999). *Inquiry and the national science education standards: A guide for teaching and learning.* Washington, D.C.: National Academy Press.
Polman, J.L. (2000). *Designing project-based silence: Connecting learners through guided inquiry.* New York: Teachers College Press.