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Grades 3-4 Water Cycle

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Unit Outline

- Day One: Pre-Assessment Quiz
- Day Two: Do Now and KWL Chart based on the Water Cycle
- Day Three: Introduction to the Water Cycle
- Day Four: Evaporation
- Day Five: Condensation
- Day Six: Precipitation
- Day Seven: Why the Water Cycle is Vital to Life on Earth
- Days Eight and Nine: Group Power Point Presentations

- Day Ten: Tiered Extension Activities for Individual Assessment
- Day Eleven: Presentations of Individual Assessment Tasks and Closure

Pre-Assessment Quiz - The Water Cycle

Name _____

Date _____

Please answer all of the following questions to the best of your ability. Circle the letter in front of the best answer. Underline any word from the questions that you do not understand. Good luck!

- 1.) What energy source is needed for the water cycle to begin?
 - a. Wind
 - b. Water
 - c. The Sun

- 2.) The process of water changing from a liquid to a gas is?
 - a. Condensation
 - b. Evaporation
 - c. Precipitation
 - d. Transpiration

- 3.) Where is most of the water on Earth located?
 - a. Rivers

- b. Lakes
- c. Oceans
- d. Wetlands

4.) The process by which water vapor changes from a gas to a liquid is called:

- a. Evaporation
- b. Condensation
- c. Precipitation
- d. Infiltration

5.) What is one form of precipitation?

- a. Glacier
- b. Pond
- c. Snow
- d. Puddle

6.) What happens first in the water cycle?

- a. The water condenses and turns into clouds
- b. The water falls to Earth as rain, sleet, or snow
- c. The sun heats the water
- d. The water rises into the atmosphere as water vapor

7.) Does water's state of matter change during the water cycle?

- a. Yes
- b. No

8.) What is water vapor?

- a. Solid
- b. Liquid
- c. Gas

9.) Which of the processes of the water cycle is most important?

- a. Evaporation
- b. Condensation
- c. Precipitation
- d. They are all equally important.

10.) Did the water cycle exist when the dinosaurs lived on Earth?

- a. Yes
- b. No

11.) Is the water cycle an open system or closed system?

- a. Open System
- b. Closed System

Answer the following questions using complete sentences.

Write your answer on the paper provided.

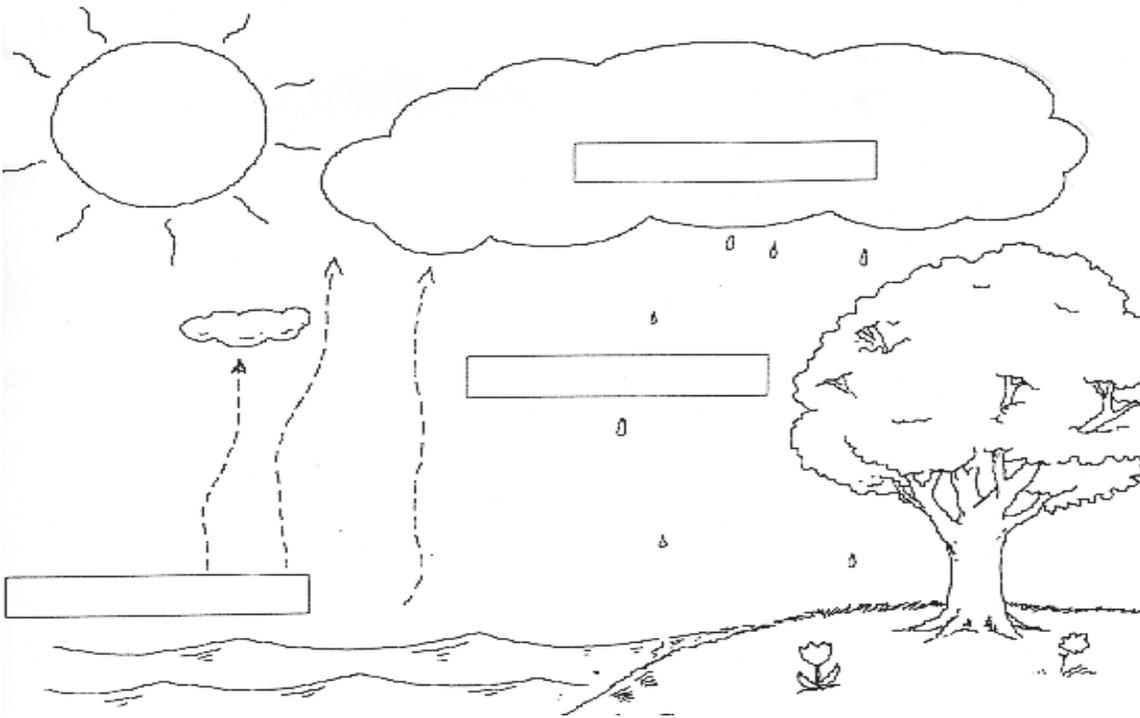
12.) How do you think the water cycle affects Earth's weather?

13.) What would happen to our planet if the water cycle stopped?

14.) There is a blank diagram of the water cycle below:

- Fill in the three processes of the water cycle.
- Label the energy source that the water cycle needs in order to begin.

- Draw arrows indicating the direction in which the water cycle flows.



15.) Now that you have labeled the diagram of the water

cycle, give an explanation describing the water cycle and how it functions. Make sure to include all of the processes and the water's state of matter in each process.

The Water Cycle

Grade Level: Fourth Grade – Whole Group Inclusive Classroom Setting

Subject: Science

Essential Question:

- What is the water cycle and why is it important?

Objectives:

- As a result of this lesson students will be able to:
 - Give an accurate and detailed description of the water cycle.
 - Define the water cycle and the processes that accompany it:
 - Evaporation
 - Condensation
 - Precipitation
 - Understand that water changes into different forms of matter at different stages of the water cycle.
 - Understand that the water cycle is a closed system.
 - Demonstrate their understanding of the importance of the water cycle to planet earth.
 - Acquire an understanding of how weather affects the water cycle.

Evidence that Students have Successfully Met Objectives:

- Students' successful and accurate completion of both assessments given:
 - Power Point Presentation
 - Tiered Extension Activity for Independent Assessment

New York State Standards:

Mathematics, Science, and Technology

Standard 1: Analysis, Inquiry, and Design

Students will use mathematical analysis, scientific inquiry, and engineering designs, as appropriate, to pose questions, seek answers, and develop solutions.

Performance Indicators:

- Use simple logical reasoning to develop conclusions, recognizing that patterns and relationships present in the environment assist them in reaching these conclusions.

- Ask "why" questions in attempts to seek greater understanding concerning objects and events they have observed and heard about.
- Question the explanations they hear from others and read about, seeking clarification and comparing them with their own observations and understandings.
- Develop relationships among observations to construct descriptions of objects and events and to form their own tentative explanations of what they have observed.
- Describe objects, imaginary or real, that might be modeled or made differently and suggest ways in which the objects can be changed, fixed, or improved.

Standard 2: Information Systems

Students will access, generate, process, and transfer information using appropriate technologies.

Performance Indicators:

- Access needed information from printed media, electronic data bases, and community resources
- Demonstrate ability to evaluate information either normally or critically.

Standard 3: Mathematics

Students will understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and trigonometry.

Performance Indicators:

- Discover patterns in nature, art, music, and literature

Standard 4: Science

Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

Performance Indicators:

- Describe patterns of daily, monthly, and seasonal changes in their environment
- Describe the relationships among air, water, and land on Earth
- Describe chemical and physical changes, including changes in states of matter
- Describe the relationship of the sun as an energy source for living and nonliving cycles)
- Describe the life processes common to all living things
- Identify ways in which humans have changed their environment and the effects of those changes

Standard 6: Interconnectedness: Common Themes

Students will understand the relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning.

Performance Indicators:

- Use different types of models, such as graphs, sketches, diagrams, and maps, to represent various aspects of the real world
- Discover that a model of something is different from the real thing but can be used to study the real thing

Standard 7: Interdisciplinary Problem Solving

Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.

Performance Indicators:

- Work effectively-Contributing to the work of a brainstorming group, laboratory partnership, cooperative learning group, or project team; planning procedures; identify and managing responsibilities of team members; and staying on task, whether working alone or as part of a group

Materials for Lesson:

- Computers
- *Bill Nye the Science Guy: The Water Cycle Video*
- Projector
- Screen
- Glass of water
- Desk
- Pencil/Pen
- Pre-Assessment quiz
- PowerPoint Presentations Assignment Sheet
- Tiered Activities Assignment Sheets

Lesson Prep:

- **Prior to this lesson**, students were introduced to the following topics:
 - States of Matter
 - Properties of Water
 - Water as a Necessity to Human Life
 - Human Impact on Water
 - The Sun as an Energy Source for Life on Earth
- Students will be divided into **groups by ability**:
 - Remedial Group – Wet Wombats
 - Average Group – Puddle Panthers

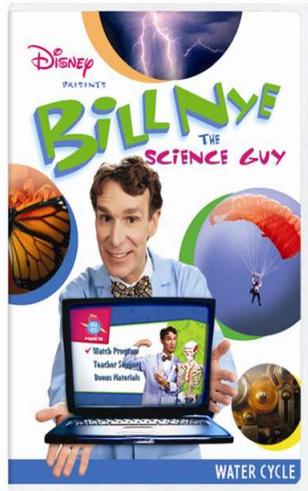
- High Group – Rain Rangers

Time Allotted for Lesson:

- 3 Non-Consecutive Days:
 - Day One – Lesson and students beginning to work on PowerPoint presentations in their groups - 60 minutes
 - Day Two – Presentation of PowerPoint projects and teacher introduction of the options students have for their individual assessments (tiered activities) – 60 minutes
 - Day Three – Presentation of individual assessment projects and lesson closure – 45 minutes

Hook:

- The **day before beginning this lesson**, the teacher will have the students partake in a short play on the water cycle based on a Readers' Theater Script (see attached):
 - Each student will be assigned a part in the play.
 - The play is the journey of a water droplet through the water cycle
- The **day of the lesson**, the teacher will show students a twenty-five minute *Bill Nye the Science Guy* video that explains the water cycle.



- By taking part in the play and watching and listening to the video, students will receive a well rounded summary of what they have been learning throughout the unit on the water cycle in a way that appeals to multiple senses.
 - This lesson takes place on the eighth day of the unit, so the goal of these “hook” activities is to bring together all of the information the students have previously learned and tie it all together.
- A period of time will be allotted for student questions after these activities so clarity on any confusing concepts can be reached.

Lesson Plan Sequence:

Day One:

- As noted above, students will watch a *Bill Nye the Science Guy* video based on the water cycle.
 - As previously stated, this video will provide a complete summary of the information students have been learning about since the beginning of the water cycle unit.
 - This video will also act as motivation for the day's lesson.
- The teacher will then explain the class activity for the day:
 - Group PowerPoint Presentations:
 - See following page for explanation of PowerPoint project.

Create a PowerPoint Presentation

Groups by Ability:

- **Rain Rangers** – High Group
- **Puddle Panthers** – Average Group
- **Wet Wombats** – Remedial Group

Assignment:

- Create a visual PowerPoint presentation that will show the water cycle and its importance to different aspects of life on Earth.

Requirements for All Groups:

- All groups will be required to include the following information in their presentations:
 - Definition of the water cycle.
 - A definition for each of the three processes that take place during the water cycle, accompanied by a picture for each process.
 - A step-by-step explanation of how Earth's water is constantly being recycled.
 - Include in this explanation all three processes that take place and the changes in the water's state of matter that take place throughout the processes.
 - Be sure to include what source of energy begins this process and in which process the water cycle begins.
 - Use a visual diagram of the water cycle to enhance your explanation.
 - Find an answer to the question, "Is the water cycle an open or closed system?", and explain your answer in your presentation.

Differentiated Requirements for Each Ability Level:

****NOTE: THE TIERED CHOICES FOR EACH ABILITY LEVEL WILL PRESENT THEMSELVES IN THE INDEPENDENT ASSESSMENT THAT FOLLOWS THIS CLASS ACTIVITY.**

- In addition to the requirements for all groups, each group will include the additional information in their presentations.
 - **Wet Wombats:**

- Explain how weather affects the water cycle.
- **Puddle Panthers:**
 - Explain how weather affects the water cycle.
 - Describe the distribution and availability of water on earth.
- **Rain Rangers:**
 - Explain how weather affects the water cycle.
 - Describe the distribution and availability of water on earth.
 - Describe the relationship between water and humans.
- Groups will be given one to two days to complete these presentations and will then present their final presentations to the class.

Day Two:

Tiered Activities for Individual Assessment (to be assigned the day PowerPoint presentations end):

- Once all of the PowerPoint presentations have ended, the teacher will introduce the students to their individual assessment task which will be in the form of a tiered extension activity.
 - The same three ability levels (high, average, low) that were designed for the PowerPoint activity will be used for the individual assessment as well.
 - For example, If Johnny was in the Wet Wombats group (the remedial group) for the PowerPoint activity then Johnny will choose from one of the four tiered activities specifically made for the remedial level.
 - Each ability level will be given four choices for their individual assessment task.
- Students will be required to present their tiered extension activity in the format of one of the following samples:
 - Writing Sample
 - Art Sample
 - Song/Musical Sample
 - Board Game Sample
- Students will be given an ample amount of time to complete their individual assessments.
- Please see following page for Tiered Activity Chart.

Tiered Activities for Individual Assessment

Each

**student will choose one activity
for their ability level and complete it.**

<i>Category</i>	<i>Wet Wombats</i>	<i>Puddle Panthers</i>	<i>Rain Rangers</i>
<i>Writing</i>	Write, design, and perform a play intended to show elementary school students what the water cycle is and why it is important to know about the water cycle. Be sure to include the important components of the water cycle we have been learning about. Give a definition of the water cycle, include the processes, and give an in depth explanation of the cycle.	You are a tiny drop of water. Develop an essay that tells about your life and how it changes as you pass through the water cycle. Be sure to include the important components of the water cycle we have been learning about and the different states of matter water goes through as a result of the cycle. Your essay should be five paragraphs long.	Read the article entitled "Acid Rain and the Water Cycle". After reading, write an informative essay about the "glitch" in the water cycle that causes acid rain. How can acid rain be prevented? Use the library to find books on the topic or search the internet.
<i>Category</i>	<i>Wet Wombats</i>	<i>Puddle Panthers</i>	<i>Rain Rangers</i>

<i>Art</i>	<p>Make a storybook based on the journey of a water droplet. Use no more than one sentence per page. Tell your story mainly through illustrations. Since your story will be mainly made up of pictures make sure that each picture is very detailed (similar to how an author would make a sentence descriptive). Be sure to use key vocabulary from the unit on the water cycle.</p>	<p>Make a cartoon storyboard based on the water cycle. Choose a main character to venture through the water cycle. Present a problem to the main character and come up with a way to solve it by the end of the cartoon. Include pictures and captions. In addition to the storyboard, pretend your cartoon is being published in the newspaper. Write a three paragraph article to go along with your cartoon explaining why the water cycle is an important part of people's everyday lives. Detail, correct word and concept use is key.</p>	<p>Look at the example of the family tree provided. Using this as a reference, invent a design for a family tree that will show the family history of a water droplet. Name the water droplet. Who are his or her parents? Where are they from? How did they get there? Does the droplet have siblings? Grandparents? Aunts and Uncles? Fill in the family tree for this droplet that exhibits a detailed family history explaining where the family started and how the droplet came to be.</p>
<i>Category</i>	<i>Wet Wombats</i>	<i>Puddle Panthers</i>	<i>Rain Rangers</i>

<i>Song/Musical</i>	<p>Create and write a song about the water cycle! Use the tune from “Row, Row, Row Your Boat” to put your song. Your song must last for the entirety of the tune played. Be sure to include specific aspects of the water cycle.</p> <ul style="list-style-type: none"> -Water Cycle -Evaporation -Condensation -Precipitation -How the water cycle works, and any other components you feel should be included that relate to the water cycle. <p>Include a cover page with the name of your song. Be creative! You will perform this song for the class.</p>	<p>This week we have been learning about the water cycle. Research another cycle that is present on our planet (Nitrogen cycle, rock cycle, etc).</p> <p>Create a song based on the tune “Yankee Doodle”. Be sure to tell your listeners what the cycle is, how it works, what its purpose is, and the key components that are involved in the cycle. Include a cover page with the name of your song. Be creative!</p>	<p>Create a song about the water cycle taking place on another planet in our solar system. Do research! Think about the weather on this planet. What would be the energy source for the water cycle? What role would gravity play? How would the processes be different on this planet? Put this information into a song that you can share with the class. Include a cover page with the name of your song. Be creative!</p>
<i>Category</i>	<i>Wet Wombats</i>	<i>Puddle Panthers</i>	<i>Rain Rangers</i>

<p><i>Game</i></p>	<p>Create a matching game based on the water cycle. Include terms from the whole unit, their definitions, and pictures. Be sure to include all vocabulary for the water cycle. Include directions for the participants playing your game, along with a support sheet for the players to refer back to in order to see if they are matching the terms, definitions, and pictures correctly.</p>	<p>Create a “Who Wants to be a Millionaire” game plan. The first question should start at \$100,000 the last question should be worth \$1,000,000 (Total of 10 questions). Each question should have three choices. You need to provide the player of the game with 3 life lines that will provide guidance throughout the game. All questions need to pertain to the information we have been learning about the water cycle in class. Include directions for your game and have an answer key made.</p>	<p>Create a “Jeopardy - like” game chart. You can set up a chart of 3 rows and 5 columns, with one of the slots being a “daily-double.” Each slot in the chart should have a monetary value. The questions should correspond to either a definition of a vocabulary word from the water cycle or questions about the processes of the water cycle, how the water cycle works, and how the water cycle affects Earth. Include directions for your game, and have an answer sheet made.</p>
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Day Three:

- Once the tiered activities are handed in, the students will have a science gallery in their classroom that will allow other fourth grade students to view student work and hear student explanations of their project choice.
- **Lesson Closure:**
 - **Do Now:**
 - The teacher will place a glass of water on a desk for students to observe when they walk into the classroom.
 - After taking a few minutes to observe the glass of water, the students will sit at their desks and respond to the writing prompt on the board in their science journals.
 - Writing Prompt: Is this the same water the dinosaurs drank? Explain why or why not.
 - Students must use the information they have received from creating their PowerPoint presentations and tiered activities to write an educated and knowledgeable response to this question
 - After ten minutes of writing, the teacher will initiate a class discussion about the writing prompt, wrapping up what has been learned throughout the course of the unit.

Anchor Activities

- Because each group and each student will be working on its own schedule, there will be times when one group finished early while another needs more time to accomplish its task. These activities are designed to give students an activity to do that is both fun and informative.
 - **Anchor Activity #1:** Students will use a website designed by NASA, in which students follow the adventure of Droplet, the water molecule, as he enters the great water cycle. Students' task as they play this game is to get Droplet safely through the forest, into the river, and out to sea so that the sun can warm him once again and help him get back to the clouds. Many obstacles lurk in the corners of this journey!
 - <http://kids.earth.nasa.gov/droplet.html>
 - **Anchor Activity #2:** A corner of the room will be named "The Water Hole". In this special place, there will be a vast array of reading material on the water cycle (books, magazines, books on tape, and articles).
 - Some books will include:
 - *A Drop Around the World* by Barbara Shaw McKinney
 - *The Water Cycle* by Helen Frost
 - *Water Dance* by Thomas Locker
 - *Water, Water Everywhere (Discovery Readers' Series): A Book About the Water Cycle* by Melvin and Gilda Berger
 - Various articles from *Discover Magazine*, a publication for students about matters dealing with the subject of science.
 - *The Water Cycle (Look, Listen, Learn) – Audio CD*
 - After reading each book/article or listening to different audio books, students will be given a worksheet entitled, "I Did Not Think There Was Anything Else I Could Learn About the Water Cycle, until I Found Out That...."
 - Students will fill in the new information they learned from their readings/audio CD's on this worksheet.
 - The aim will be to fill in the sheet by the end of the unit with additional information they have found through their readings.

- **Anchor Activity #3:** Read following scenario:

- Source: The comic strip was taken from Tom Snyder's website: <http://www.tomsnyder.com/products/productextras/SCISCI/watercycle.html> .



Waiting for the subway, Mr. I.M. Richman slips and falls in a puddle of water.

1



Above him, he sees water dripping from some pipes. They must be leaking! I.M. Richman decides to sue Pip Peterson, the maker of the pipes.

2



Pip Peterson asks Science Court attorney Alison Krempel to defend her company. "Our pipes don't leak, Ms. Krempel!"

3



In Science Court, Alison Krempel calls an expert witness, meteorologist Maria Hernandez. "Water in the air condensed on the outside of the pipes and dripped onto the floor. The pipes weren't leaking," says Maria.

4



"Water in the air? Do you expect us to believe that there is water roaming around in the air?" asks Doug Savage, I.M. Richman's attorney.

5



Judge Stone and the Science Court jury must decide: Is Pip Peterson guilty of leaky pipes? Or could the water have come from the air?

6

- In box number six, Judge Stone and the jury are trying to decide on two decisions:
 - Is Pip Peterson guilty of leaky pipes?
 - Could the water have come from the air?
 - Make an educated decision based on your knowledge and research you find in books from "The Water Hole" in your classroom and information from internet sources.

Art : Tiered Activity for Individual Assessment

CATEGORY	4	3	2	1
Graphics - Originality	Several of the illustrations used in your project reflect an exceptional degree of student creativity in their creation and/or display.	One or two of the illustrations used in your project reflect student creativity in their creation and/or display.	The illustrations are made by the student, but are based on the designs or ideas of others.	No illustrations made by the student are included.
Grammar	There are no grammatical mistakes on the project.	There is 1 grammatical mistake on the project.	There are 2 grammatical mistakes on the project.	There are more than 2 grammatical mistakes on the project.
Graphics - Relevance	All illustrations are related to the topic and make it easier to understand.	All illustrations are related to the topic and most make it easier to understand.	All illustrations relate to the topic.	Illustrations do not relate to the topic.
Required Elements	The project includes all required elements as well as additional information.	All required elements are included on the project.	All but 1 of the required elements are included on the project.	Several required elements were missing.
Knowledge Gained	Student can accurately answer all questions related to facts in the project and processes used to create the final product.	Student can accurately answer most questions related to facts in the project and processes used to create the final product.	Student can accurately answer about 75% of questions related to facts in the project and processes used to create the final product.	Student appears to have insufficient knowledge about the facts or processes used in the project.
Content - Accuracy	At least 7 accurate facts are displayed on the poster.	5-6 accurate facts are displayed on the poster.	3-4 accurate facts are displayed on the poster.	Less than 3 accurate facts are displayed on the poster.

Attractiveness	The project is exceptionally attractive in terms of design, layout, and neatness.	The project is attractive in terms of design, layout and neatness.	The project is acceptably attractive though it may be a bit messy.	The project is distractingly messy or very poorly designed. It is not attractive.
Mechanics	Capitalization and punctuation are correct throughout the project.	There is 1 error in capitalization or punctuation.	There are 2 errors in capitalization or punctuation.	There are more than 2 errors in capitalization or punctuation.
Labels (**For Family Tree Only)	All items of importance on the family tree are clearly labeled with labels that are easy to read.	Almost all items of importance on the family tree are clearly labeled with labels that are easy to read.	Several items of importance on the family tree are clearly labeled with labels that are easy to read.	Labels on the family tree are too small to view OR no important items were labeled.

Making A Game : Tiered Activity for Individual Assessment

Student Name: _____

CATEGORY	4	3	2	1
Knowledge Gained	The students could easily and correctly state several facts about the topic used for the game without looking at the game. All information included in the game is accurate.	The student could easily and correctly state 1-2 facts about the topic used for the game without looking at the game. 1-2 errors were found in the information included in the game.	The student could had difficulty correctly stating 1-2 facts about the topic used for the game without looking at the game. More than two errors were found in the information included in the game.	The student could NOT correctly state facts about the topic used for the game without looking at the game. More than five errors were found in the information included in the game.
Attractiveness	Contrasting colors and original graphics were used to give the cards and gameboard visual appeal.	Contrasting colors and at least 1 original graphic were used to give the cards and gameboard visual appeal.	Contrasting colors and "borrowed" graphics were used to give the cards and gameboard visual appeal.	Little or no color or fewer than 3 graphics were included.
Rules	Rules were written clearly enough that all could easily participate.	Rules were written, but one part of the game needed slightly more explanation.	Rules were written, but people had some difficulty figuring out the game.	The rules were not written.
Creativity	The group put a lot of thought into making the game interesting and fun to play as shown by creative questions, game pieces and/or game board.	The group put some thought into making the game interesting and fun to play by using textures, fancy writing, and/or interesting characters.	The group tried to make the game interesting and fun, but some of the things made it harder to understand/enjoy the game.	Little thought was put into making the game interesting or fun.

**Oral PowerPoint Presentation Rubric:
Tiered Activity for Individual Assessment**

CATEGORY	4	3	2	1
Pitch	Pitch was often used and it conveyed emotions appropriately.	Pitch was often used but the emotion it conveyed sometimes did not fit the content.	Pitch was rarely used OR the emotion it conveyed often did not fit the content.	Pitch was not used to convey emotion.
Comprehension	Group is able to accurately answer almost all questions posed by classmates about the topic.	Group is able to accurately answer most questions posed by classmates about the topic.	Group is able to accurately answer a few questions posed by classmates about the topic.	Group is unable to accurately answer questions posed by classmates about the topic.
Enthusiasm	Facial expressions and body language generate a strong interest and enthusiasm about the topic in others.	Facial expressions and body language sometimes generate a strong interest and enthusiasm about the topic in others.	Facial expressions and body language are used to try to generate enthusiasm, but seem somewhat faked.	Very little use of facial expressions or body language. Did not generate much interest in topic being presented.
Preparedness	Group is completely prepared and has obviously rehearsed.	Group seems pretty prepared but might have needed a couple more rehearsals.	Group is somewhat prepared, but it is clear that rehearsal was lacking.	Group does not seem at all prepared to present.
Listens to Other Presentations	Listens intently. Does not make distracting noises or movements.	Listens intently but has one distracting noise or movement.	Sometimes does not appear to be listening but is not distracting.	Sometimes does not appear to be listening and has distracting noises or movements.

Speaks Clearly	Speaks clearly and distinctly all (100-95%) the time, and mispronounces no words.	Speaks clearly and distinctly all (100-95%) the time, but mispronounces one word.	Speaks clearly and distinctly most (94-85%) of the time. Mispronounces no more than one word.	Often mumbles or can not be understood OR mispronounces more than one word.
Stays on Topic	Stays on topic all (100%) of the time.	Stays on topic most (99-90%) of the time.	Stays on topic some (89%-75%) of the time.	It was hard to tell what the topic was.
Content	Shows a full understanding of the topic.	Shows a good understanding of the topic.	Shows a good understanding of parts of the topic.	Does not seem to understand the topic very well.

**HyperStudio/Powerpoint Appearance and Content : Group PowerPoint Presentations:
The Water Cycle**

CATEGORY	4	3	2	1
Sequencing of Information	Information is organized in a clear, logical way. It is easy to anticipate the type of material that might be on the next card.	Most information is organized in a clear, logical way. One card or item of information seems out of place.	Some information is logically sequenced. An occasional card or item of information seems out of place.	There is no clear plan for the organization of information.
Effectiveness	Project includes material required for all groups, along with the additional presentation requirements for each group. The presentation acts as a highly effective study guide on the topic. All information included is completely accurate.	Project includes most required material, but not all. It is lacking one or two key elements. It is an adequate study guide. There are some incorrect components of included information.	Project is missing more than two key elements. It would make an incomplete study guide. Much of the information included is incorrect.	Project is lacking several key elements and has inaccuracies that make it a poor study guide. The majority of information included is incorrect.

Use of Graphics	All graphics are attractive (size and colors) and support the theme/content of the presentation.	A few graphics are not attractive but all support the theme/content of the presentation.	All graphics are attractive but a few do not seem to support the theme/content of the presentation.	Several graphics are unattractive AND detract from the content of the presentation.
Originality	Presentation shows considerable originality and inventiveness. The content and ideas are presented in a unique and interesting way.	Presentation shows some originality and inventiveness. The content and ideas are presented in an interesting way.	Presentation shows an attempt at originality and inventiveness on 1-2 cards.	Presentation is a rehash of other people's ideas and/or graphics and shows very little attempt at original thought.
Cooperation	Group delegates tasks and shares responsibility effectively all of the time.	Group delegates tasks and shares responsibility effectively most of the time.	Group delegates tasks and shares responsibility effectively some of the time.	Group often is not effective in delegating tasks and/or sharing responsibility.

Writing a Song : Tiered Activity for Individual Assessment

CATEGORY	4	3	2	1
Penmanship (Conventions)	Song is neatly written or typed with no distracting corrections.	Song is neatly written or typed with 1 or 2 distracting corrections (e.g., dark cross-outs; bumpy white-out, words written over).	The song is generally readable, but the reader has to exert quite a bit of effort to figure out some of the words.	Many words in the song are unreadable OR there are several distracting corrections.
Song Content	Writer uses vivid words that linger or draw pictures in the reader's mind, and the choice and placement of the words seem accurate, natural and not forced.	Writer uses vivid words that linger or draw pictures in the reader's mind, but occasionally the words to the songs are used inaccurately or seem overdone.	Writer uses words that communicate clearly, but the words lack variety, punch or flair.	Writer uses words that do not communicate strongly or capture the reader's interest. The words do not fit in as dialogue.
Flow & Rhythm (Sentence Fluency)	All sentences sound natural and are easy-on-the-ear when read aloud. Each	Almost all sentences sound natural and are easy-on-the-ear when read aloud, but 1 or 2 are stiff and awkward or difficult to	Most sentences sound natural and are easy-on-the-ear when read aloud, but several are stiff and awkward or are difficult to	The sentences are difficult to read aloud because they sound awkward, are

	sentence is clear and has an obvious emphasis.	understand.	understand.	distractingly repetitive, or difficult to understand.
Grammar & Spelling (Conventions)	Writer makes no errors in grammar or spelling that distract the reader from the content.	Writer makes 1-2 errors in grammar or spelling that distract the reader from the content.	Writer makes 3-4 errors in grammar or spelling that distract the reader from the content.	Writer makes more than 4 errors in grammar or spelling that distract the reader from the content.
Focus on Topic (Content)	There is one clear, well-focused topic. Main idea stands out and is supported by detailed information.	Main idea is clear but the supporting information is general.	Main idea is somewhat clear but there is a need for more supporting information.	The main idea is not clear. There is a seemingly random collection of information.
Cover Page	Cover is a creative and professional looking advertisement promoting the song.	Cover is a creative looking advertisement promoting the song.	Cover lacks some creativity and is missing advertisement components.	Cover is basic and minimal. Creativity is not expressed.

Writing : Tiered Assessment for Individual Assessment

CATEGORY	4	3	2	1
Writing Process	Student devotes a lot of time and effort to the writing process (prewriting, drafting, reviewing, and editing). Works hard to make the finished product 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.
Introduction	First paragraph or your introduction has a "grabber" or catchy beginning.	First paragraph or introduction has a weak "grabber".	A catchy beginning was attempted but was confusing rather than catchy.	No attempt was made to catch the reader's attention in the first paragraph.

Neatness	The final draft of the writing piece is readable, clean, neat and attractive. It is free of erasures and crossed-out words. It looks like the author took great pride in it.	The final draft of the writing piece is readable, neat and attractive. It may have one or two erasures, but they are not distracting. It looks like the author took some pride in it.	The final draft of the writing piece is readable and some of the pages are attractive. It looks like parts of it might have been done in a hurry.	The final draft is not neat or attractive. It looks like the student just wanted to get it done and didn't care what it looked like.
Focus on Assigned Topic	The entire story or essay is related to the assigned topic and allows the reader to understand much more about the topic.	Most of the story or essay is related to the assigned topic. The story wanders off at one point, but the reader can still learn something about the topic.	Some of the story or essay is related to the assigned topic, but a reader does not learn much about the topic.	No attempt has been made to relate the story or essay to the assigned topic.
Organization	The story or essay is very well organized. One idea or scene follows another in a logical sequence with clear transitions.	The story or essay is pretty well organized. One idea or scene may seem out of place. Clear transitions are used.	The story or essay is a little hard to follow. The transitions are sometimes not clear.	Ideas or scenes seem to be randomly arranged.
Spelling and Punctuation	There are no spelling or punctuation errors in the final draft. Words are spelt consistently throughout.	There is one spelling or punctuation error in the final draft.	There are 2-3 spelling and punctuation errors in the final draft.	The final draft has more than 3 spelling and punctuation errors.
Accuracy of Facts	All facts presented in the story or essay are accurate.	Almost all facts presented in the story or essay are accurate.	Most facts presented in the story or essay are accurate (at least 70%).	There are several factual errors in the story or essay.
Creativity	The story or essay contains many creative details and/or descriptions that contribute to the reader's enjoyment. The author has really used his/her imagination.	The story or essay contains a few creative details and/or descriptions that contribute to the reader's enjoyment. The author has used his imagination.	The story or essay 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 or essay. The author does not seem to have used much imagination.

NOTES:

The comic strip was taken from Tom Snyder's website:

<http://www.tomsnyder.com/products/productextras/SCISCI/watercycle.html> .

The rubrics were created using rubistar: <http://rubistar.4teachers.org/index.php> .

The video is made by Disney and the program is called Bill Nye the Science Guy.