

**UDL Lesson Plan  
Grade 5 Science**

<p><b>Lesson Objective/s:</b> To research and construct a water cycle including evaporation, condensation, precipitation and run-off To express one impact of people on the water cycle (this objective will continue)</p>
<p><b>Assessment/s:</b> Science notebooks, completed products graded with rubric</p>
<p><b>State Standards Correlation:</b> 3.01 Investigate the water cycle including the processes of:</p> <ul style="list-style-type: none"> <li>• Evaporation</li> <li>• Condensation</li> <li>• Precipitation</li> <li>• Run-off</li> </ul>
<p><b>Materials/Resources:</b> individual plastic bags (gallon size), clear plastic cups (1 per student), pitcher, water, red food coloring, water, duct tape, CD Rom (Global Climate Change) or Video Streaming Website, create or find a Webquest about the water cycle, bookmark/locate books/articles about the water cycle, poster board, markers, digital cameras</p>
<p><b>Preplanning:</b> Prepare Power Pt., vocabulary, advance organizer, graphic organizer (hole punch), prepare labels, gather self-monitoring sheets, count out materials and prepare water for experiment, prepare rubric for products (<a href="http://rubistar.4teachers.org/index.php">http://rubistar.4teachers.org/index.php</a>), determine student pairs/groupings</p>

Lesson Element	Procedure for Teacher and Materials	Potential Barriers for Learning:  The student has challenges with...	UDL Multiple Means of... Representation Engagement Expression
<b>Lesson Opening</b>	<p>What do you know about the water cycle? Do you know how human activity can affect it?</p> <p>Objective: In this lesson you will research and construct a water cycle. You will actually get to make your own water cycle bag! You will also be creating your own published product to explain the water cycle in detail.</p>	<p>Attention</p> <p>Making strategic connections</p> <p>Motivation</p>	<p>Use a rain stick or bell to alert students to the lesson Have student(s) sit near teacher Purposefully link to prior knowledge</p> <p>State purpose, show enthusiasm Post objective and advance organizer in room. Review as needed throughout lesson verbally or by pointing. Provide individual copies as needed.</p>

	<p>Advance Organizer:</p> <ul style="list-style-type: none"> <li>✓ Review vocabulary</li> <li>✓ Watch video</li> <li>✓ Power Point</li> <li>✓ Make a water cycle bag</li> <li>✓ Identify 4 processes</li> <li>✓ Share impact of humans on water cycle</li> </ul>	Organization/Focus	
<b>Teacher Input</b>	<p>Vocabulary:</p> <ul style="list-style-type: none"> <li>• water cycle</li> <li>• evaporation</li> <li>• condensation</li> <li>• precipitation</li> <li>• transpiration</li> </ul> <p>Show a video clip about the water cycle</p> <p>With a Power Pt, or projected text, highlight the amount of water on the earth and how it keeps recycling.</p> <p>Show how humans affect the water cycle; highlight the average daily water use by people (bath, cooking, shower, drinking water, etc.)</p> <p>What are the main processes in the water cycle? How do harmful chemicals get into groundwater?</p> <p>Teacher demonstrates how to</p>	<p>Language</p> <p>Hearing impairment</p> <p>Visual impairment</p> <p>Language barriers</p> <p>Comprehension Motivation</p>	<p><b>Review vocabulary; Students make cards with visuals and definition and keep together on a ring; students sing water cycle that includes vocabulary/definitions.</b></p> <p><b>Add closed caption to the video</b></p> <p><b>Project any text/pictures/charts used, provide magnification devices</b></p> <p><b>Add visuals to Power Pt. or select text to be projected that includes visuals/charts; provide symbolic or language translations as needed</b></p> <p><b>Ask questions</b></p>

	make a water cycle bag.		
<b>Guided Practice</b>	Students will follow teacher model in making the bags and will place them near a heat source.	Comprehension Working with others	<b>Use concrete examples, 'hands on' learning</b> <b>Work in pairs; students may choose to work along</b>
<b>Independent Practice</b>	<p>Students will write in their science notebooks about what they observed in their bag and predict what they think will happen next and give a reason.</p> <p>Create a poster, brochure, or write an article about the water cycle, Students will be asked to tell or show one or more ways people can positively or negatively impact the water cycle process.</p> <p>Extension: Students will prepare a debate for a current events problem related to harmful chemicals in ground water.</p>	<p>Difficulty writing</p> <p>Low vision, Reading difficulty, Writing difficulty</p> <p>Difficulty organizing ideas</p> <p>Confidence Staying on task</p> <p>Language/Comprehension</p> <p>Need extra challenge</p>	<p>Students can draw pictures to show what their bag looks like</p> <p>Use WebQuests, print materials (with read aloud), video, Power Pt. presentation to create a poster, brochure, article, oral report, original song/rap, show knowledge of the water cycle.</p> <p>Use organizers from today's note-taking</p> <p>Ms. Gimble will circulate, provide frequent positive feedback, and praise for efforts</p> <p>Mr. Clark will work with a few students who need extra practice with vocabulary/language. They may review the video, Power Pt., and song. They will use digital cameras to create a storyboard of the water cycle.</p> <p>Provide tasks that require students to use their own thinking to create and solve a problem. Provide interactive CD to general ideas if needed.</p>
<b>Closure Time:</b>	<p>Ask: What did you learn? What are the processes in the water cycle? How can people impact the water cycle in positive and/or</p>	Summarizing important information, making connections in their learning	Students can use their vocabulary word cards as 'response cards' to answer water cycle process questions

negative ways?

Tell students that tomorrow they will observe changes in their lab bag experiments.

Students may begin to share their products or at least talk about what they are doing. They will likely take a couple of days to complete.

Assign homework: Interview two people after you leave school. Ask how they think the water cycle impacts their lives. Record their responses. Review information on class website about the water cycle to get more information for products.

Transition to next lesson singing water cycle song/rap from beginning of lesson.

Organizing

Confidence  
Task commitment

Organizing,  
Writing, Memory

Transitioning to next  
lesson/activity  
Memory

Assist students in planning for the next day

Praise student efforts

Mr. Clark will also post homework, Power Pt. presentation, and WebQuest on class website. He will go over homework assignment and make sure students use their planners. Peers may assist with writing planner entries.

Use a song, movement, perhaps add rain stick

**Some** students will produce a product (article, letter, poster) to address the environmental concerns that impact the water cycle, water supplies, and/or the safe consumption of water.

**Most** students will create water cycle bags and create a product that describes the processes. They will also tell or show one way people can positively or negatively impact the water cycle process.

**All** students will create water cycle bags and identify 4 processes.

Activity Source: Geophysical Institute. *Arctic climate modeling program*. Fairbanks, AK: University of Alaska Fairbanks, 2009. Available from <http://www.arcticclimatemodeling.org>.

The full activity can be accessed at: [http://www.arcticclimatemodeling.org/subject\\_water\\_cycle.html](http://www.arcticclimatemodeling.org/subject_water_cycle.html)

### Water Cycle Web Resources:

- Online resource for background knowledge: Link to a song from the internet about the water cycle at: <http://www.teachertube.com>
- Allows student to follow a drop of water through the water cycle. Has text, pictures, and diagrams. <http://ga.water.usgs.gov/edu/watercycle.htm>
- A collection of websites on this topic with some differentiation:
  - Thematic Pathfinders for All Ages: <http://42explore.com/water.htm>
  - The Water Cycle by EPA, an interactive site: [http://www.epa.gov/safewater/kids/flash/flash\\_watercycle.html](http://www.epa.gov/safewater/kids/flash/flash_watercycle.html)

- The Water Cycle with illustration and activities: [http://www-k12.atmos.washington.edu/k12/pilot/water\\_cycle/grabber2.html](http://www-k12.atmos.washington.edu/k12/pilot/water_cycle/grabber2.html)
- NCKidScience, made possible by the Carolina Center for Public Service at UNC Chapel Hill. <http://www.nckidscience.com/Resources/?grade=5&goal=3>