

Easy Lesson Plan Template

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P = Pretest (think essential questions)

O = Objectives (measurable - see Bloom's taxonomy)

C = Catch (hook, anticipatory set, etc... use different senses, not a question)

A = Activity (procedure of what the students should do)

R = Review (how will students go over what they've learned?)

A = Assessment (formative and/or summative)

P = Posttest (same as pretest for comparison purposes)

S = Standards (Wyoming, NGSS, etc...) showcasing crosscutting concepts¹

<p>Pretest Questions</p>	<p>1) What is a watershed? a) All of the land that drains into the same location or body of water b) All of the bodies of water on earth create one watershed c) Water on the surface of land</p> <p>2) How does water move throughout a watershed? a) Only through rivers, lakes, and oceans b) Water runs downhill over land and into bodies of water c) Water sits on land until it rains and drains directly into the ocean</p> <p>3) Why do you think it is important to have a healthy watershed? (3 min)</p>
<p>Objectives</p>	<p>Students will...</p> <ul style="list-style-type: none"> ● analyze the movement of water through a Continental Divide and Grand Canyon simulation (NetLogo) ● modify, predict, and observe the raindrops of the watershed of the Grand Canyon (NetLogo) ● research where Sheridan, WY gets their drinking water ● discuss what creates a healthy watershed and why
<p>Catch</p>	<p>https://www.youtube.com/watch?v=QOrVotzBNto 1:17 minute “What is a watershed?” (2 min)</p>
<p>Activity</p>	<p>1.Vocab (3 min) Watershed a) All land that drains into the same location or body of water (often separated by an area or ridge of land)</p> <p>Continental Divide a) Line that divides water flow between Atlantic and Pacific ocean. Provide maps to have all students draw where they think</p>

¹ <http://ngss.nsta.org/CrosscuttingConceptsFull.aspx>

the continental divide falls in the US.

2.Simulation Activity (20 min) Using NetLogo Program



- a) Based on where we live (Sheridan, WY), which ocean do you think our watershed drains into? Refer to map and see if students have another answer.
- b) Show continental divide simulation to whole class. Students analyze the movement of water through a Continental Divide and Grand Canyon simulation.
- c) Students modify, predict, and observe the raindrops of the watershed of the Grand Canyon w/ guiding questions.

4.Where does Sheridan get its water? (5-10 min)

- a) Students research where Sheridan residents get their drinking water. Discuss as class.
- b) Water for Sheridan is sourced from Big Goose Creek, and during times of peak usage the water supply is supplemented from the Twin Lakes Reservoir.
- c) Do we drink water directly from Big Goose Creek?
<http://www.sheridanwy.net/departments/utilities/water>

5.Water health (5min)

- a) Why can't we drink water directly from streams, lakes, or ponds?
- b) Write 3 things you think are harmful in drinking water.
- c) Do we all need water to survive?
- d) Do other people have to drink water that makes them sick to survive?

Review

First discuss with shoulder partner. Then as a class. **(3 min)**

- 4) What is a watershed?
- 5) How does water move throughout a watershed?
- 6) Why do you think it is important to have a healthy watershed?

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<p>Assessments</p>	<p>Collect predictions and guiding questions from NetLogo Grand Canyon simulation activity.</p>
<p>Posttest Questions (same as pretest questions)</p>	<p>7) What is a watershed? a) All of the land that drains into the same location or body of water b) All of the bodies of water on earth create one watershed c) Water on the surface of land 8) How does water move throughout a watershed? a) Only through rivers, lakes, and oceans b) Water runs downhill over land and into bodies of water c) Water sits on land until it rains when it runs downhill 9) Why do you think it is important to have a healthy watershed? (3 min)</p>
<p>Standards</p>	<p>Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. MS-ESS2-4</p> <p>Diciplinary Core Ideas ESS2.C: The Roles of Water in Earth’s Surface Processes</p> <ul style="list-style-type: none"> • Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. (MS-ESS2-4) • Global movements of water and its changes in form are propelled by sunlight and gravity. (MS-ESS2-4)
<p>Crosscutting Concepts from NGSS</p>	<p>Cause and Effect</p> <ul style="list-style-type: none"> • Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-ESS3-1)