



WATERSHED 360°

EPISODE 2 | "THE WEIGHT OF WATER" (5:11)

Nebraska Social Studies and/or Science Standards Addressed

Geography-Location and Place

SS 5.3.1 Explore where (spatial) and why people, places and environments are organized in the United States.

SS 5.3.1.a Use maps and atlases to locate major human and physical features in the United States.

Geography-Regions

SS 5.3.2 Compare the characteristics of places and regions and draw conclusions on their impact on human decisions.

SS 5.3.2.a Identify criteria used to define regions within the United States.

SS 5.3.2.b Identify and classify regions and places within the United States using physical and human features.

SC.5.13 Earth's Systems

SC.5.13.4 Gather and analyze data to communicate understanding of Earth's systems.

SC.5.13.4.A Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

SC.5.13.4.B Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.

SC.5.13.4.C Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

Each episode of Watershed 360° begins with the same two questions. "Who cares about a watershed? And why?"

Each episode ends with the question, "Do you know your watershed?"

Tell students that they should be able to answer these questions after viewing most or all of the episodes. However, the first two questions have many different answers.

[Watershed_questionsposters.pdf](#)



OBJECTIVE(S)

Students will describe the process and purpose of measuring snowpack.

VOCABULARY

hydrologist: person who studies the distribution, circulation, and properties of water

<https://www.nationalgeographic.org/glossary/?term=hydrologist>

snowpack: layers of snow that naturally build up during snowfalls

<https://www.nationalgeographic.org/glossary/?term=snowpack>

snotel shelter: a shed-like structure to house electronics that are used to monitor snowpack and runoff (a short form of snow telemetry)

federal sampler: a snow tube set used to weigh and sample snowpack

CAPTIONS

Snowpack is monitored to predict spring runoff and surface water levels. 1:33

Snowmelt runoff is a major source of fresh water around the globe. 2:51

Snowpack impacts the water supply for millions of people downstream. 3:02

Snowmelt is the source of 75 percent of water in the American West. 3:14

Headwaters are biologically, chemically, and hydrologically connected to downstream rivers. 4:13

LOCATION

Berthoud Summit, Colorado (Boulder Creek Watershed upstream from South Platte River)



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GRADES 4-8

QUESTIONS

1. Why do hydrologists measure the snowpack? (*To predict how much melted snow will run off the mountain in the spring.*) Why would this matter? (*Too much runoff might cause flooding. Too little might mean a water shortage.*)

Brian said that just because the water (snow) falls there doesn't mean it belongs to them. It melts and runs off into the Clear Creek, which flows into the South Platte, which flows into the Platte, which flows into the Missouri, which flows into the Mississippi, which flows in the Atlantic Ocean from the Gulf of Mexico. Trace the path of the water on a map.

[insert blank (no text) outline map of US]

2. "Who cares about a watershed? And why?"

Brian said the water is used to irrigate crops that he buys for food. Lexi said that it is important to keep enough water in the streams so native fish and wildlife can survive.

ACTIVITIES

"You Be The Judge-Who should get the water?" (groundwater.org) can be found in the Watershed 360° Resources Document | 5-8.

The suggested grade levels are 6-12 but it could easily be adapted as a teacher-led class discussion for students in grades 4-5 after doing the simple introductory activity.

[You-Be-The-Judge.pdf]

ADDITIONAL RESOURCES:

This site provides additional information, photos, and video clips that support the content in this episode. There is also a graph ("Not All Snow is Created Equal") that shows how snowpack amounts can be converted to projected amounts of water and another that shows how the amount of snowpack varies from year to year.

<http://projects.plattebasintimelapse.com/mountains-to-fields/snow/>

SOURCES:

National Geographic Society. "Vocabulary." Vocabulary | National Geographic Society, www.nationalgeographic.org/glossary/

Water Comes from White Wonder. (OAD).

Retrieved from <http://projects.plattebasintimelapse.com/mountains-to-fields/snow/>

snow telemetry, https://www.wcc.nrcs.usda.gov/about/mon_automate.html