

Arizona Project WET 5E Lesson 5 – Groundwater Connection

Prepared By: Michael Spaeth

Date: July 2026

LESSON 5 GROUNDWATER CONNECTION

PROJECT WET WATER LITERACY PRINCIPLES

Water Is a Natural Resource	a. All life on Earth uses water. b. The available freshwater supply on Earth is limited and must sustain multiple users. c. Water is not distributed equally across the Earth—there are arid regions and wet regions.
Water Resources Are Managed	a. Multiple users of water resources creates diverse and sometimes conflicting demands, which require water resource management practices. b. Management decisions involve distribution of water resources and protection of acceptable water quality and quantity. c. Management of water quality is critical for the health of humans and ecosystems. d. Individuals, communities, and industries have unique water footprints that impact water resources.
Water Resources Exist within Social Constructs	a. Over time, societies develop water management systems and practices to meet the needs of diverse water users. b. Political and economic systems affect equal access by all to water with geopolitical impacts. c. Communities do not have equal access to water quantity or quality. d. People's values, attitudes, and beliefs about water are shaped by their experiences. e. Individual and community water conservation efforts impact water availability on a local level.
LESSON SUMMARY	Students review what they learned about groundwater at the water festival and then dive deeper into how Arizona depends on groundwater. Learning more about wells and what happens when we over pump the aquifer, students explore the changes people can make to the groundwater system and our environments. Understanding the connection between groundwater and surface water along with realizing that groundwater is an integral part of our Arizona water cycle, helps students want to become groundwater guardians.

MATERIALS	• Arizona Groundwater Videos • Lesson-5-Groundwater-Diagram.pdf • 26-27-AWF-Lesson-5-Slides.pptx • Springing-into-Action_BackgroundReading_CareerConnections.pdf • LESSON-5_STUDY-NOTES-GROUNDWATER-IN-AZ_FITB-NOTES_QUIZ-WITH-KEY.pdf
TIME	50 minutes
GUIDING QUESTIONS	How does groundwater fit within the Arizona Water Cycle? What is the relationship between groundwater and surface water? Do we have an endless supply of groundwater?
LESSON PLAN	AWF-Unit-Lesson-Plan-5-Groundwater.pdf
ARIZONA STATE STANDARDS ADDRESSED IN LESSON	
SCIENCE	4.E1U2.10 Define problem(s) and design solution(s) to minimize the effects of natural hazards (in the context of droughts and water scarcity).
MATH	4.MD.B.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots.
ELA	*4.W.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. c. Link ideas within categories of information using words and phrases (e.g., another, for example, also, because). d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Provide a concluding statement or section related to the information or explanation presented.

Social Studies (Elaborate)	G2.1 Compare the different ways people or groups of people have impacted, modified, or adapted to the environment of the Americas. Key concepts include but are not limited to disease, farming, family structure, housing, cultural assimilation, cultural amalgamation, climate, transportation, domestication of animals, clothing, recreation, and utilization of renewable and non- renewable natural resources.
CTE (Elaborate)	Explore jobs, occupations, and careers to understand the value of all careers to society. Lesson 5 Springing into Action Career Connections.
ENGAGE	
Students review and identify the parts of the groundwater system that they explored during the water festival.	
EXPLAIN	
Students review and identify the parts of the groundwater system that they explored during the water festival. Through videos and slides students dive deeper into how wells work and how groundwater plays a pivotal role as a water source to Arizona. Students explore how human behavior can alter the land, the groundwater system and impact the water we have available. Use slides to review key ideas about groundwater.	
VOCABULARY	
EXPLORE	
Use this simulator to experiment with surfaces, rainfall and types of groundwater wells. https://has.concord.org/groundwater-movement.html	
ELABORATE	
Math connection: Make a line plot to display a data set of measurements using the following Arizona Groundwater Dataset . Solve problems involving addition and subtraction of fractions by using information presented in line plots.	
EVALUATE	
Groundwater handout and diagram quiz.	
REFLECT	

CONTENT KNOWLEDGE AND SUGGESTED READING FOR TEACHERS

- <https://asu.maps.arcgis.com/apps/dashboards/57696be87aac421f90ab2033807b7310>
- [Audubon Southwest - Understanding Arizona's Groundwater](#)