

Class/Grade Level	9
Topic	Introduction to Water: Water is Life
State Standards/ Course Objectives	<p><b>Concept 1: Changes in Environments</b> Describe the interactions between human populations, natural hazards, and the environment.</p> <p>PO 1. Evaluate how the processes of natural ecosystems affect, and are affected by, humans.</p> <p>PO 2. Describe the environmental effects of the following natural and/or human-caused hazards:</p> <ul style="list-style-type: none"> <li>• flooding</li> <li>• drought</li> <li>• earthquakes</li> <li>• fires</li> <li>• pollution</li> <li>• extreme weather</li> </ul> <p>PO 3. Assess how human activities (e.g., clear cutting, water management, tree thinning) can affect the potential for hazards.</p> <p><b>Concept 2: Science and Technology in Society</b> Develop viable solutions to a need or problem.</p> <p>PO 4. Analyze the use of renewable and nonrenewable resources in Arizona:</p> <ul style="list-style-type: none"> <li>• water</li> <li>• land</li> <li>• soil</li> <li>• minerals</li> <li>• air</li> </ul>
Materials List	<p>Video: Water is Life (Navajo Nation Division of Natural Resources Video)</p> <p>Student Reflection Journals</p>
Duration Type	1 Class Hour
Objectives	<p>TSW define the phrase “water is life” in their own words.</p> <p>TSW list immediate examples from their home that illustrate the meaning of “water is life”.</p> <p>TSW create a graphic organizer with group to demonstrate the meaning of “water is life”.</p> <p>TSW discuss how the video interprets the Navajo philosophy of “water is life”.</p> <p>TSW interpret the oral traditional story to apply to current Navajo traditional practices involving water homage at feasts</p> <p>TSW discuss and interpret how the video has translated the Navajo traditional beliefs that water is</p>

	<p>sacred and critical to life.</p> <p>TSW identify and define the following key terms: drought, water management, renewable resource, ecosystems, abiotic factor</p>
Anticipatory Set	<p>Bellwork:</p> <ol style="list-style-type: none"> <li>1. TSW respond to the following question in their science journals: “Water is Life” is a Navajo Traditional saying. What Navajo practices at home and in the community support the idea that “Water is Life”? What do you think would be the consequences in Ganado if our community were to experience a severe drought that lasted longer than 5 years.</li> </ol>
Teaching: Input	<ol style="list-style-type: none"> <li>1. Students will work together at their table groups to create a group list that shows how water is connected to everyday living at their homes and in their chapter communities.</li> <li>2. Students will create a graphic organizer using their group list demonstrating the connections water has on every living organism in a community/home/ecosystem.</li> <li>3. Students will present their graphic organizer to the class and demonstrate their line of thought through oral explanation.</li> <li>4. Teacher will tell the Navajo traditional creation story of how Frog took water away from the people because he was disrespected at a feast of celebration.</li> <li>5. Students will analyze the story to discuss cause/effect of water loss on all biotic factors in the creation world. Students will discuss how the drought implemented the current Navajo traditional practice of drinking water before feasts to pay homage to Frog and his gift of water.</li> <li>6. Teacher will create cause/effect graphic organizer on the board using oral student responses as guide.</li> <li>7. Students will watch video: Water is Life and discuss the connections between the video and the oral story to emphasize the meaning of “Water is Life”.</li> </ol>
Teaching: Checking for understanding	<ol style="list-style-type: none"> <li>1. Students will discuss their journal entries at their table groups to compare answers. Teacher will monitor discussions to ensure that all students are participating.</li> </ol>

	<ol style="list-style-type: none"> <li>2. Students will explain their group graphic organizer and teacher will ask questions that measure their level of engagement.</li> <li>3. As teacher tells oral story, teacher will ask for predictions from students in regards to what will happen next in the story.</li> <li>4. Students will guide teacher in class graphic organizer on board outlining cause/effect of the drought.</li> <li>5. Ticket out the door: List 3 things that you learned from today's discussions.</li> </ol>
Questioning Strategies	<ol style="list-style-type: none"> <li>1. Bellwork: Journal Question</li> <li>2. Group Question: Water importance in the community and at home</li> <li>3. What is the student definition of key terms?</li> </ol>
Guided Practice	<ol style="list-style-type: none"> <li>1. Group graphic organizer</li> </ol>
Independent Practice	<ol style="list-style-type: none"> <li>1. Student journals</li> <li>2. Ticket out the door</li> </ol>
Differentiation	<p>Individual written reflection</p> <p>Group discussion</p> <p>Group oral presentation</p> <p>Creative graphic representation and artwork</p> <p>"What next" storytelling</p>
Closure	<ol style="list-style-type: none"> <li>1. Students will reflect and analyze their learning by answering the 3 questions as their ticket out the door:  "What 3 things did you learn from today's lesson and/or discussion? Explain the importance of each of the 3 things to your life at home and community.</li> </ol>

References:

Navajo Department of Natural Resources. *Video: Water is Life*. 1995. Window Rock, Arizona.

Extensions:

1. Class will explore how light reflection and refraction are affected by water.
2. Discuss indigenous fishing techniques using harpoons or spears and discuss how tribal peoples may have passed TEK to ensure that fish are caught in reference to reflection and refraction.
3. Students will research and debate water rights issues facing the Navajo Nation: the Little Colorado River.