



What is Water Scarcity?

Duration: 30 minutes

Description:

Understanding that water is a limited resource is essential for promoting conservation behaviors and inspiring creative thinking behind possible solutions. World Data Lab's Water Scarcity Map illustrates water accessibility across the globe, providing three levels of access (water stress, water scarce, and absolute scarcity) and how access to water relates to population from 2000 to 2030. Students will interact with the map to achieve the objectives below.

Materials Needed:

Laptop

Google Chrome, Internet Explorer, or Mozilla FireFox

Learning Objectives

1. Define water scarcity and water access.
2. Be able to navigate geographical data.
3. Understand the relationship between water and population.
4. Identify ways to conserve water.

Applicable Education Standards

<p>Common Core State Standards/Next Generation ELA</p>	<p>4R7: Identify information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, illustrations), and explain how the information contributes to an understanding of the text.</p> <p>SL2: Paraphrase portions of information presented in diverse formats (e.g., including visual, quantitative, and oral).</p> <p>4W1a: Introduce a precise claim, supported by well-organized facts and details, and organize the reasons and evidence logically.</p>
<p>New York State Science Learning Standards</p>	<p>ESS2.E: Biogeology - Living things affect the physical characteristics of their regions. (4-ESS2-1)</p> <p>Influence of Engineering, Technology, and Science on Society and the Natural World - Engineers improve existing technologies or develop new ones to increase their benefits, to decrease known risks, and to meet societal demands. (4-ESS3- 2)</p>
<p>California Science Framework/Next Generation Science Standards</p>	<p>[SEP-8] Obtaining, Evaluating, and Communicating Information</p> <p>ESS3 A: Natural Resources</p> <p>Principle I: The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services.</p>



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Instructions:

1. Before going to the map, read the script about water (below).
2. Have students break into small teams of 3 or 4.
3. Go to <https://worldwater.io/> on Google Chrome. Scroll down the page until you find the map.
4. Each team will choose a country from the list below. Depending on class size, you can decide how many countries to use.
 - a. Australia
 - b. India
 - c. Egypt
 - d. Brazil
 - e. Canada
 - f. Guatemala
 - g. Spain
 - h. Madagascar

Note: Students may need assistance locating their countries, however, let them know that if they move the mouse over the map online, the country name will appear.

5. Have the teams explore the Water Scarcity Map. Take a look at how the map looks at different years (2000, 2010, 2019, 2030) and for different views (driest month, Use the map to answer the following questions:

Script:

Today we are going to talk about water scarcity. The water that humans use every day is freshwater, but only 2.5% of all water on Earth is freshwater -- the rest is saltwater. That means that 97.5% of all water is found in the oceans.

Using a map, we are going to look at what it means to share this 2.5% of freshwater between all of the people and animals in the world. Not everyone has the same access to water, even though we need it all the time. If people cannot access water easily, it is considered scarce. As we will soon learn, water scarcity - or the lack of access to freshwater - is different depending on where you live.



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Instructions: Have you ever gone to get a glass of water and it isn't there? Did you know that all over the world, some people have to walk up to three miles a day to find water to drink?

Access to freshwater can change based on different factors. For example, some people may live closer to a lake. Or, some people may live in a very dry place where water dries up. This makes water a scarce resource.

Find your country on the map. Zoom in and out and look at it during different years. Notice how water access changes.

- 1. Which color means people have the least access to water? Yellow, Orange, or Red?**
- 2. Based on the map, do people have more water in 2000 or 2019?**
- 3. What happens to the size of the population over time? Are there more or less people in 2019 or 2030? If there are more people, will there be more water to share?**
- 4. How does lack of water affect people?**
- 5. What are some possible ways to save water?**
- 6. Find your country. What do you think causes water scarcity here?**