

Activity This activity compares and contrasts the water distribution in the state of Missouri.

Missouri Learning Standards ESS2.C.1 Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution.

Learning Outcomes

- Students will identify different lakes, and rivers.
- Students will compare and contrast the locations of major lakes and rivers.
- Students will examine major bodies of water to determine the percentage of Missouri that is covered in water.

Map URL: <http://arcg.is/uXPLL>

Ask

Where is water available in your area?

- Click the map link above or type it into your Internet browser.
- This map shows the major rivers and lakes in Missouri.
- Click the button, Show Contents of Map. Hint: Look in the upper left corner, under the Details button.
- Click the Counties layer and the Places layer.
- Ask students to locate Osage County on the map. Hint: You can type **Osage County, MO** into the search field.
 - ? What major river runs through this county? [*Gasconade River*]
 - ? What two rivers create the Northern and Western border of the county? Hint: You may have to zoom in to see the name. [*Missouri River and Osage River*]
 - ? Are there any major lakes located in this county? [*No*]

Acquire

How are Missouri's rivers and lakes connected?

- Hover your mouse over the **Major Rivers** layer. Click the button **Show Table**.
- Demonstrate to students that when you click on the name of the river it will highlight its location on the map. You can also click on the river location and it will highlight the name in the table.
- Ask students to locate Stockton Lake on the map. Hint: You may have to zoom in to see it. Located in Southwest Missouri.
 - ? What river flows in to Stockton Lake? [*Sac River*]
- Ask students to locate Mark Twain Lake on the map. Hint: It is located in Northeast Missouri.
 - ? What two rivers flow into Mark Twain Lake? [*Middle Fork Salt River and North Fork Salt River*]

Explore

Where are the largest bodies of water located?

- Exit out of the Major Rivers Table.
- Click the Major Rivers layer. This will remove the rivers and make the lakes more identifiable.
- Explore the map. Ask students to point to the large bodies of water in Missouri.
 - ? Which lake appears to be the largest? [*Answers may vary*]
 - ? What are the names of these bodies of water? Hint: You can click on the pin point for more information. [*Lake of the Ozarks, Truman and Table Rock*]
 - ? Which of these lakes has the largest surface area? [*Lake of the Ozarks, 87.34 square miles*]

Analyze

What percentage of Missouri is water?

- Use the zoom tool to zoom out and view the entire state of Missouri.
- Use the measure tool to find the approximate area in square miles of Missouri.
- Click the Major Rivers layer. Prompt students to look at the entire state and predict what percentage of Missouri's surface area is covered in water.
- Click on the water symbol located in the Northeast portion of Missouri. Follow the **Water and Land Data** link and look at the data for Missouri.
- ? What is the total area in square miles for Missouri? [69,707 square miles]
- ? How does this answer compare to the area you calculated? [Answers will vary]
- ? What is the total water area in square miles? [965 square miles]
- ? What percentage of Missouri is covered in water? [1.4%]
- ? How does this compare to other states? [Answers will vary]

Act

Why should we protect Missouri's water?

- ? Why is it important to conserve and protect Missouri's water? [Answers may include: water is an important resource. It is used as a resource for food, transportation, recreation, animal habitats, and drinking]
- ? What are some ways we can conserve and protect Missouri's water? [Answers may include: conserving water in our daily lives (taking shorter showers, turning off water when brushing teeth), disposing of trash and other waste materials properly, picking up litter]

BOOKMARK

- At the top of the map, click the Measure button.
- Hover and click the Area button.
- Click continuously to trace along the area you want to measure.
- Double-click to finish.

MEASURE

- At the top of the map, click the Bookmarks button.
- Choose your bookmark; the map will take you there.

Next Steps

DID YOU KNOW? ArcGIS Online is a mapping platform freely available to U.S. public, private, and home schools as a part of the White House ConnectED Initiative. A school subscription provides additional security, privacy, and content features. Learn more about ArcGIS Online and how to get a school subscription at <http://connected.esri.com>.

THEN TRY THIS...

- Log in to your ArcGIS organization account and perform analysis on rivers and lakes in the United States.
- Use the Measure tool to find the length of various rivers.

TEXT REFERENCES

- *Project Wet Curriculum and Activity Guide*

WWW.ESRI.COM/GEOINQUIRIES

Version Q4 2016. Send feedback: <http://mga.missouri.edu>

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