

You're Invited

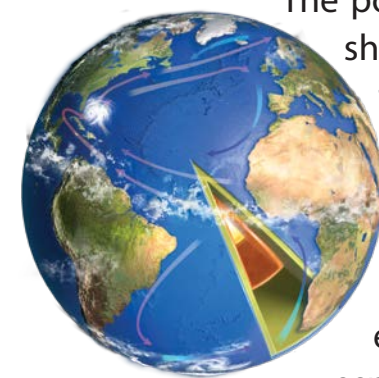
“Water Today and for the Future,” the theme of Earth Science Week 2021 (October 10–16), emphasizes the importance of learning how to understand, conserve, and protect water, perhaps Earth’s most vital resource.

Water is essential for life on Earth. While more than 70 percent of Earth’s surface is covered by water, most of it is saltwater in oceans. Only about 3 percent of the water on our planet is freshwater, and most of that is in glaciers, in the atmosphere, or otherwise inaccessible, leaving less than 1 percent of the total available for use by people and other living things.

Earth Science Week 2021 learning resources and activities are engaging young people and others in exploring the importance of water — and water science — for living things,

Earth systems, and the many activities that people undertake. Individuals of all backgrounds, ages, and abilities are being engaged in building understanding of water’s role in topics including energy, climate change, the environment, natural hazards, technology, industry, agriculture, recreation, and the economy.

You are invited to join in the celebration of Earth Science Week 2021. Play your part by learning and raising awareness of the essential part that water plays in our lives and in the Earth systems — today and tomorrow.



The poster front includes an image of the Earth designed to show many places where water is found in the Earth’s systems — clouds, oceans, lakes, glaciers, Earth’s interior, plants, and more. The image can be used as the focus of a discussion of Earth’s systems — the atmosphere, biosphere, geosphere, hydrosphere — and how water is part of those systems and their interactions. The exosphere and anthroposphere can also be considered, especially with respect to water in the future.

The poster image can be found online at:
www.earthsciweek.org/images-and-logos

Learning Activity: Water in the Earth System

Grades: 5-8

Activity source: AGI

Materials:

- Earth Science Week poster
- Computer with internet access

NGSS Connections:

- Science and Engineering Practices — Obtaining, Evaluating, and Communicating Information
- Disciplinary Core Ideas — Earth and Human Activity
- Cross-cutting Concepts — Systems and System Models

Procedures

Look at the icons on the front of the poster. Each one represents a place that water is found a way that water is used. The icons are arranged in groups to suggest relationships between different places where water is found, how water is used, and/or a water-related issue.

1. Review what you know about the water cycle and what it tells about water in the Earth system. Use the poster to identify a cluster of icons that shows where water is found in the Earth system. What other icons might you add to show places where water is found that have not been included? For each, write down the name of that part of the hydrosphere and a short description.
2. Make a list of five major ways that you think you use water. Look at the poster. Do you see icons that could represent those uses? If one of your uses does not seem to be shown, what might an icon for it look like? Try sketching your new icon.
3. Choose any five icons. Sketch each along one side of a piece of paper. Beside it, write words that you think would be an appropriate label for the icon. Fold your paper so the sketches still show, but your labels are covered. Have someone look at the icons and suggest their own labels. Show them your labels. Are any of your labels the same as what they suggested? If there are

differences, why might that be? Are the different labels that you and the other person suggested related in some way?

4. The icons are clustered in ways that are meant to suggest places where water is found naturally in some cases, uses of water in other cases, and issues related to water in some other cases.
 - a. Which sets of icons do you think are uses, and which do you think are places where water is found? Which icons do you think indicate water-related issues?
 - b. If you were going to give each cluster of icons on the poster a heading that describes how the icons relate to each other, what might those headings be?
 - c. Look at the list of headings you made for the uses of water. Are there any other uses of water that you can think of that are not represented by a group of icons?
5. Look at the image of the Earth on the poster. Suppose you were going to choose ten icons to place directly on that image of the Earth to show how they relate to the Earth’s systems. Which ten icons might you choose? Which icons might be easy to place on the image? Which would be harder to place in a specific location? Why might that be?
6. Suppose you were going to make a similar poster where the sizes of the icons

Get Connected

Where to start? Simply go online and explore some of the electronic resources available through the Earth Science Week website:

- **Classroom Activities** (www.earthsciweek.org/forteachers/classroomactivities.html) allow you to search a collection of more than 120 activities, offering a wide diversity of ways to explore Earth science.
- **Focus Days** (www.earthsciweek.org/focusdays.html) offer information, learning activities, and other resources about areas highlighted on special days during the week, such as Minerals Day (Monday) and Geologic Map Day (Friday).



ESW 2020 Visual Arts Contest entry by Elizabeth Xu

represent how large or small the different sources or uses of water are. Larger icons would represent more water and smaller icons would represent less water.

- a. Identify a cluster of icons that represents Earth’s sources of water. Which do you think would be the biggest icons? Which would be the smallest?
 - b. Identify a cluster of icons that represents the uses of water. Which do you think would be the biggest icons? Which would be the smallest?
 - c. Where could you find information that would help you to describe how much water is consumed by different uses?
7. Think about some of the sources and uses of water in your local area. Write a list. In what ways are your local sources or uses of water related to hazards or conservation issues?
 8. You’ve been thinking about the relative sizes of different parts of the hydrosphere and the uses of water. For your local area, think about the sources and uses of water and brainstorm how they might change in the future.
 - a. How might the poster appear different in the future?
 - b. For each change in the size of a source or a use of water describe what you think might have caused that change. What effect might those changes have?

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Water Footprint Calculator (Grace Communications Foundation)

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Find Out More

See the Earth Science Week 2021 Toolkit (www.earthsciweek.org/materials) and website (www.earthsciweek.org) for instructional resources, newsletters, local events, and scores of classroom activities. Have a great Earth Science Week!

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Earth Science Week Future Dates

- October 9–15, 2022
- October 8–14, 2023
- October 13–19, 2024

Your Vital Role

Earth Science Week offers everyone an opportunity to explore, experience, and share geoscience:

- **Schools and classrooms** can hold classroom activities and invite guest geoscientists to give presentations. Students can do projects, compete in program contests, watch webcasts, and go on field trips to museums or local parks.
- **Geoscience companies and other organizations** can reach out to communities by obtaining Earth Science Week Toolkits for local classrooms, hosting an open house, or sending a geoscientist to visit a local school.
- **Museums and science centers** can shine a spotlight on geoscience-related exhibits or create a program especially for Earth Science Week.
- **Families and citizen groups** can participate by planning an event or activity for their communities, youth groups, or schools.