

## **All the Water in the World**

**A story time about our drinking water supply**

### **LESSON PLAN**



The objectives of the lesson are to teach children the following: 1) although there is a lot of water in the world, *almost* all of it is salt water, which we can't drink or use to grow food; 2) only a tiny part of the world's water supply is fresh water that can meet our drinking water and other water supply needs; 3) we need to take care of our rivers, streams, lakes, and groundwater

(where much Wisconsin's water supply comes from.)

This lesson plan works very well with children in preschool through second grade. The lesson lasts from 45 minutes to an hour, based on the number of books read. To orient the children to what it means to be a scientist, think scientifically and "do science," use the "**A Scientist Is...**" and "**Scientific Method**" handouts available at the end of this lesson plan.

## SING

Begin with your favorite welcome song.

## SCIENCE CHAT

Begin by asking the children how much water they think is in the world and how much of that water is drinkable. It is best to demonstrate with a map or a globe in hand.

### Water Supply Brainstorm

Look at a globe (or map) with the students. See if they can find where they live.

- 1) **Have them point out the blue areas of the globe - lakes, rivers and oceans, especially those in Wisconsin.** Explain that these are called **surface waters**.
- 2) Ask the students if they know **which kinds of waterbodies are salt water (marine environments) and which are fresh water (aquatic environments).** **Have they ever tasted salt water? Was it good?**
- 3) Ask the students **if they think there is more water or land on the globe. Is there water beneath the surface of the ground that we cannot see on the globe?**



## Water Supply Demonstration

Prepare 100 pieces of ziti pasta – dye or color one blue and two green, leaving the rest plain. **(Use the pie chart that follows the “Did You Know” facts.)**

Spread the ziti out on a table. Explain that there are 100 ziti pieces that represent all (100%) of the water in the world. **Ask the students if they know what the green and blue ziti pasta represent.**

**\*\* The 97 plain ziti pasta pieces represent the salt water in our oceans -- 97% of all the water on earth** (a water supply that is, at this time, too expensive and requires too much energy to convert to fresh water on a big scale).

**\*\* Explain that the two green ziti pasta pieces represent water that is stored as ice in glaciers and at the poles (2%).**

**\*\* The lonely blue ziti pasta piece represents the fresh water that is available for plants, animals and people (1%).** And remind them that this includes water used for agriculture – something we might forget.

Ask the students what we should do to take good care of the water we use in our homes and businesses. This is a good time to encourage brainstorming – have the children say their suggestions in turn to the entire group.

In sum: **Use only what you need!**

**DID YOU KNOW?**  
**Facts about the Earth's Water**

Earth is called a **water** planet

Earth has different types of water:

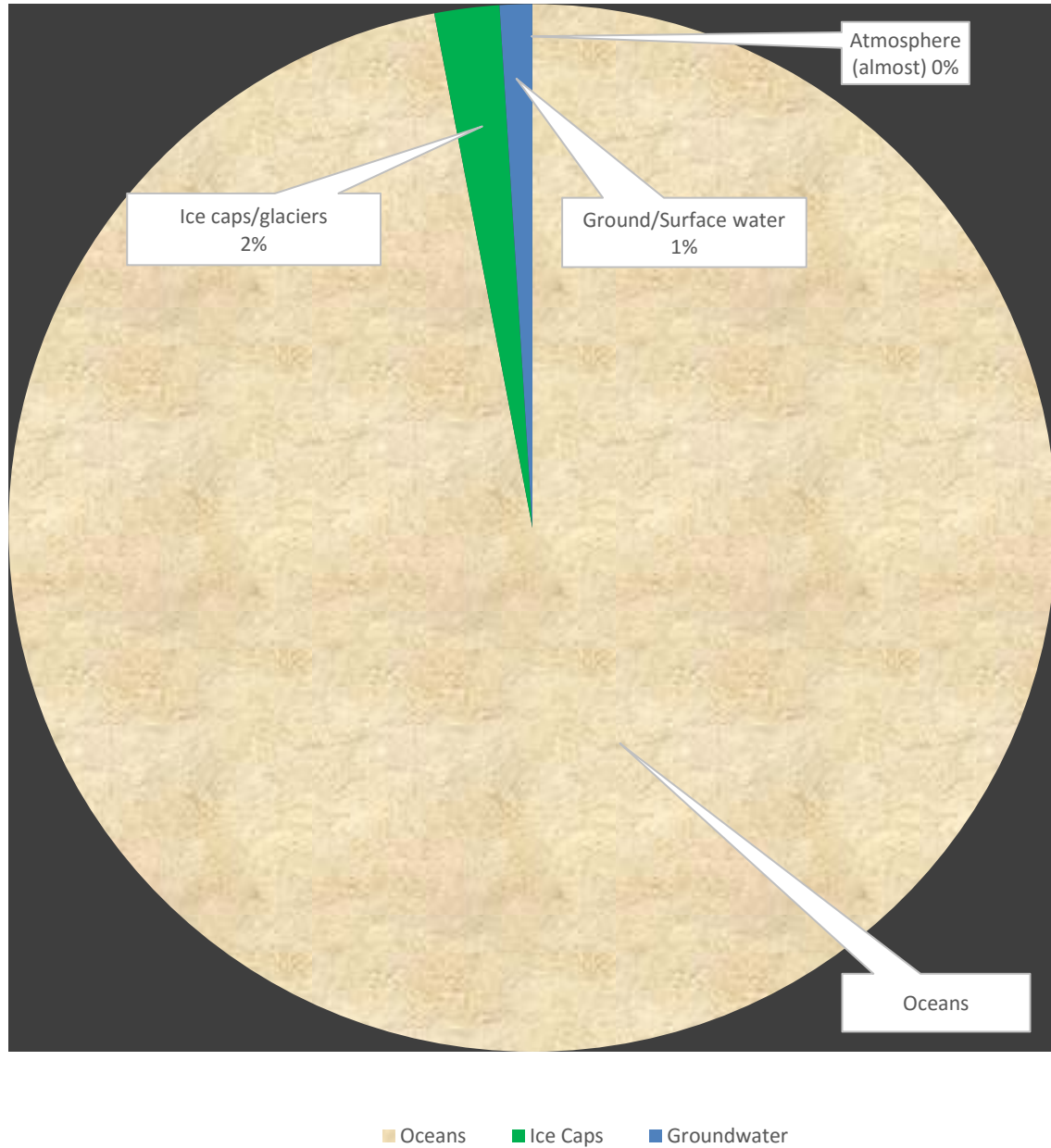
<b>Oceans</b>	<b>97%</b>
<b>Polar ice caps/glaciers</b>	<b>2%</b>
<b>Groundwater/surface water</b>	<b>less than 1%</b>
<b>Atmosphere</b>	<b>itty bitty</b>

Of the 1% of groundwater/surface water (potable = drinkable by humans)

<b>Agriculture</b>	<b>42%</b>
<b>Electricity</b>	<b>39%</b>
<b>Manufacturing</b>	<b>8%</b>
<b>Water in rural &amp; urban homes, etc.</b>	<b>11%</b>

**[Note: Feel free to post these water facts.]**

# Earth's Water Supply



**[Note: Feel free to post this poster]**

## READ

Here are some suggestions from the Wisconsin Water librarians, but feel free to swap out with your own favorites OR visit our **subject specific reading lists:** [The Great Lakes](#), [Oceans](#), [Ponds and Lakes](#), [Rivers](#) and [Wetlands](#).

*All book descriptions are quoted with permission from the Cooperative Children's Book Center (CCBC) or Kirkus Reviews (KR).*

READ: [All the Water in the World \(2011\)](#) by George Ella Lyon, illustrated by Katherine Tillotson.

"A poetic, informative, and thought-provoking picture book looks at water from a global/environmental perspective but never loses sight of the personal for children..." (CCBC)

For ages 4-8. Highly Commended, 2012 Charlotte Zolotow Award.

READ: [Water is Water \(2015\)](#) by Miranda Paul, illustrated by Jason Chin.

"The rhyming text is expanded into a visual story by illustrations of a brown-skinned boy and girl interacting with the water cycle through the seasons as they wait for the school bus in the rain, skate on a frozen puddle, squelch through spring mud, and enjoy late summer cider." (CCBC)

For ages 4-9. Highly Commended, 2016 Charlotte Zolotow Award.

READ: [I Get Wet \(2002\)](#) by Vicki Cobb, illustrated by Julia Gorton.

"Kids who wonder why their fingertips get wrinkly in the bathtub will find the answer to this question and other scientific stumbers in this simple but not simplistic study of the ways of water... Easy, quick experiments are interwoven into the text, delivered in a chatty style..." (KR)

For ages 3-6.

READ: [In the Swim: Poems and Paintings \(1997\)](#) by Douglas Florian.

"In the 21 lighthearted, teasing poems and full-page paintings of [In the Swim](#), no rhyme is unrealized, no pun is left unturned. Florian's quirky, inventive humor is brimming with wit and child appeal." (CCBC)

For ages 8-11.

READ: [Water Rolls, Water Rises= El Agua Rueda, el Agua Sube \(2015\)](#) by Pat Mora, illustrated by Meilo So.

"Water not only rolls and rises, it slithers, snakes, streams, slides, hums, plunges, skids, slips and much, much more in this language-rich offering... Each three-line verse in [Pat Mora's] bilingual (English/Spanish) tribute to water is set against an expansive watercolor painting by Meilo So inspired by a specific geographic place on earth that is noted at volume's end." (CCBC)

For ages 5-8, Honor Book, 2015 Charlotte Zolotow Award.

READ: [Water Can Be \(2014\)](#) by Laura Purdie Salas, illustrated by Violeta Dabija.

"An imaginative picture book describes water in tangible terms that are intriguingly varied with each season... The rhyming couplets provide creative ways of looking at water in each season, while the illustrations ground the ideas with concrete images." (CCBC)

For ages 4-7, Highly Commended, 2015 Charlotte Zolotow Award.

READ: [The Water Walker \(2017\)](#) by Joanne Robertson.

"Josephine Mandamin, concerned about water quality and conservation, organized a group of other Ojibwe women to walk around all the Great Lakes and the St. Lawrence River, blessing and singing to the water. They accomplished this remarkable feat in seven years, and then organized women from other Native Nations to do the same with the Atlantic and Pacific Oceans, the Gulf of Mexico, and in the frozen north. The account uses numerous Ojibwe words (defined in the glossary) to give a strong sense of setting and of the organizer's Ojibwe heritage. Other colorful details, such as the fact that [Mandamin] went through 11 pairs of sneakers on her walks, make her unusual story particularly appealing to children." (CCBC)

For ages 6-10.

READ: [Agua, agüita = Water, Little Water \(2017\)](#) by Jorge Tetl Argueta, illustrated by Felipe Ugalde Alcántara, translated from the Spanish by Gabriela Baeza.

"A first-person narrative in Spanish and English tells the story of the water cycle. Agüita (Little Water) starts the journey deep inside Mother Earth, gradually working its way to the surface, where it forms as a drop of morning dew. It eventually makes its way into a river and then into the sky. Argueta's poetic text moves from the smallest drop to an ever-expanding personification of water ("I am all colors / and have no color. / I am all flavors / and have no flavor. / I am all shapes / and am shapeless ... ") Ugalde Alcántara's textured paintings suggest Aztec-inspired symbols, and the text itself appears in Nahuatl at the back of the book." (CCBC)

For ages 3-6.





## SING

Use any song you like adapted to the theme of water. Here is one suggestion:

Row, row, row your boat  
gently down the stream.  
Merrily, merrily, merrily,  
merrily life is but a dream

Rock, rock, rock your boat  
gently down the stream.  
If you see a crocodile,  
don't forget to scream. ("Ahhhh!")

Row, row, row your boat  
gently to the shore.  
If you see a lion there,  
don't forget to roar. ("Rawwwwr!")



## DO SCIENCE: TASTE TEST

### Supplies:

2 pitchers of water

Box of salt

Paper cups

### How To:

- Review the amount of water available for drinking in the world.
- Fill two pitchers with water.
- In one pitcher, pour a substantial amount of salt.
- In the other pitcher, leave the water as is.
- Ask the kids to take a “taste test” of the world’s saltwater/undrinkable seas.
- Do they like it? If not, how should they think about their drinking water supply?

## CRAFT: ZITI NECKLACE

### Supplies:

Boxes of uncooked baked ziti pasta, can be different colors

String or narrow yarn (small enough to be threaded through ziti and strong enough to hold it)

### How to:

Make baked ziti necklaces by stringing thread or yarn through the ziti and tying. While doing so, review the statistics of [All the Water in the World](#) and how to be a good water citizen.

## TO LEARN MORE ABOUT THE WATER SUPPLY

1. The United States Geological Survey (USGS) Water Science School website:  
<https://water.usgs.gov/edu/>.
2. The Water Footprint Network school resources webpage:  
<http://waterfootprint.org/en/resources/school-resources/>.
3. The US Environmental Protection Agency (EPA) webpage on water topics:  
<https://www.epa.gov/environmental-topics/water-topics>.
4. The EPA webpage on lessons plans, teacher guides and online environmental resources for educators: <https://www.epa.gov/students/lesson-plans-teacher-guides-and-online-environmental-resources-educators>.
5. The National Wildlife Federation's (NWF) lesson plans and webinars (see "habitats" and "watersheds"): <https://www.nwf.org/Educational-Resources/Educator-Tools/Lesson-Plans-and-Webinars>.
6. Scientific American - Education "Bring Science Home" (lesson plans/experiments/K-12): <https://www.scientificamerican.com/education/bring-science-home/>.
7. The National Geographic Society's webpages on teaching resources, activities and lessons: <https://www.nationalgeographic.org/education/teaching-resources/>.
8. Smithsonian Science Education Center curriculum "How Can We Provide Freshwater to Those in Need": <https://ssec.si.edu/water>.
9. Global Water (an international humanitarian organization whose mission is to help rural peoples in poor countries provide themselves access to safe water and sanitation): <http://globalwater.org/about-us/>.
10. USGS Water Science School – Desalination (converting saltwater to fresh water): <https://water.usgs.gov/edu/drinkseawater.html>.
11. Great Lakes and Wisconsin Water Facts from the Sea Grant Institute: <http://www.seagrant.wisc.edu/Home/AboutUsSection/PressRoom/Details.aspx?PostID=796>.

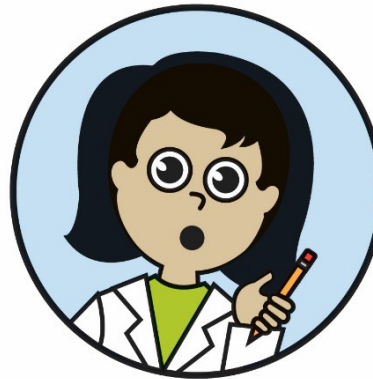


### A SCIENTIST IS SOMEONE WHO...

- Observes and wonders
- Asks questions
- Listens to ideas of others
- Conducts experiments
- Shares his/her ideas and discoveries
- Explores the world around him/her
- Uses tools to solve problems

### A SCIENTISTS SAYS...

- I agree with you because...
- I disagree with you because...
- Why do you think that?
- So, what you're saying is...
- Can you tell me more?
- Can you give me an example?
- How could we test that?
- That reminds me of...



# DOES IT SINK OR FLOAT? SCIENTIFIC METHOD

THINK LIKE A SCIENTIST

