

WEEKDAY WONDERS



Content developed by the
Tennessee Aquarium
Education Department



TENNESSEE
AQUARIUM



Water Warriors: Day 2

This week your young scientist has a chance to get to know water better. Your scientist will consider the question, “How much water do I use in a day?” S/he will also consider ways to keep water clean and how people and animals use water, including having fun in it. The Tennessee Aquarium works to make sure that humans and animals have clean water. This week, your scientist will have that same opportunity.

These curated activities are listed in a suggested sequence but may be done in the order that works best for you and your young scientists. Learn more about this series in the [Introduction to Weekday Wonders](#).



Question of the Day

Could your water usage affect others?



Daily Nature Journal

Ask your young scientists to spend some time outside completing their daily nature journal. Use the [Guide to Nature Journaling](#) to see the other prompts to help your scientist nature journal each day. This daily habit builds awareness of the rich life around us.



How Dry I Am

Ask your young scientist to go outside or look out of a window and imagine that no rain has fallen for 6 months. No one has been allowed to water either. What does s/he see that would be different without the water that every ecosystem needs? Ask how your scientist thinks living things might be affected. Ask how the surroundings would look, feel, sound, and smell different.

Have your scientist write about the ideas or draw a picture of what it might look like outside. Your scientist’s nature journal is a great place to record ideas.



Will There Be Enough?

Gather the materials your young scientist will need for this activity.

- 1 plate
- 4 cards, each labeled with one of the following to represent four generations. You can substitute the names of people in your family if you think it will be easier for your scientist.
 - Great-grandparents
 - Grandparents
 - Parents
 - Children
- Large bag of any small food item considered highly desirable in your family, such as chocolate candies, chewy fruit candies, peanuts, or chocolate chips.

Have your young scientist count out 32 of the food items and place them on the plate. He or she should lay out the four cards and put the plate in front of great-grandparents. Tell your scientist that the 32 food items represent water that is safe to drink.

To understand how the simulation is going to work, have your scientist take 16 of the food items as water that the great-grandparents use. Tell your scientist to not eat them! Then tell your scientist that half of the water can be cleaned by humans or natural processes, so they can add half (8 of the items) back to the plate and move it to be in front of the grandparents.

The scientist should again take 16 food items to represent water that the grandparents use. Half of it can be cleaned and made drinkable again, so the scientist can return 8 of them to the plate.

After one more round like this for the parent generation, the scientist should find that there is no water left for the children's generation. Tell him or her that s/he is going to have a chance to try again and see what happens when using different amounts of water.

Allow your scientist to try again. Tell him or her to think about the activities different generations may have used water for and share that it does not need to be the same amount of water for each generation. Make sure that each time no more than half of the water is "cleaned" and put back on the plate. Ask him or her to keep track of the data (the amount of water used and the amount available for each generation) with each round.

Next, challenge your scientist to try to find a good balance that allows the generations to use water but not take all of it before the future generations have a chance. Remind him or her to consider the activities that people need water to do, so it may not be reasonable to only take 1 food item each round.

Follow up this activity with a discussion of questions such as

- What types of activities is the water being used for?

- Do you think people use more or less water today than when your great-grandparents were young? This can lead to discussions about how water saving toilets and showers but also water-based games, large bathtubs, and pools.
- How do you think the different generations might feel about how much water the previous generation used?
- What can you do to make sure there is enough water for the next generation?



Beat the Dam

Explain to your young scientist that one of the fish that the Tennessee Aquarium has worked to bring back to the Tennessee River system is the Lake Sturgeon. For more than 20 years, the Aquarium has released thousands of young Lake Sturgeon in the upper reaches of the river. The Tennessee Valley Authority has helped by maintaining the correct water flow necessary for these fish to breed.

Tell your scientist that humans have built dams along the Tennessee River. Because Lake Sturgeon migrate long distances along the river to breed, dams have an impact on them.

In this activity, your young scientist will have a chance to play the role of a Lake Sturgeon. Determine a playing area for the game.

The young scientist(s) should try to “swim” from one side of the playing area to the other, which represents migrating upstream. For sturgeon, breeding season is only during certain times. To represent that, decide on an amount of time, such as 10 seconds, that the Lake Sturgeon will have to migrate.

An adult or another scientist will play the role of the dam. S/he should stand in the middle of the playing area with arms outstretched. The “dam” can only move across the playing area (perpendicular to the way the sturgeon are moving) but cannot move forward or backward. The dam will try to catch the sturgeon during the migration.

To begin, the dam should start counting the time aloud while trying to tag any sturgeon. The round ends when the sturgeon gets to the opposite side of the playing field, the time runs out, or the dam tags the sturgeon. If the sturgeon makes it to the other side, s/he gets to choose whether to be the sturgeon or the dam in the next round. If the time runs out or the dam catches the sturgeon, the dam chooses the roles for the next round.