

WEEKDAY WONDERS



Content developed by the
Tennessee Aquarium
Education Department



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AQUARIUM



Water Warriors: Day 3

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

How do everyday activities affect water quality?



Daily Nature Journal

Young scientists should complete a nature journal entry for the day. The [Guide to Nature Journaling](#) will help you guide them on how to nature journal.



Nature Journal

Everyday activities, like gardening, washing your car, or walking your dog, may affect the quality of our water. Have your young scientist consider these three activities and tell how each may affect water quality. Ask your young scientist to think of other everyday activities that they think might affect water quality. Have your scientist list or draw each one and write at least one effect s/he thinks it might have on water quality.



How Did That Get in the Water?

Through this activity, you and your young scientist will discover some of the routine activities that may affect the quality of water. Help your young scientist collect the following

items:

- food coloring
- vinegar
- coffee grounds or cocoa powder
- a few small rocks
- small sticks
- dry leaves or dried spices like basil, oregano, or chives
- liquid dishwashing detergent
- cooking oil
- raisins or small candy pieces
- a few small pieces of metal like paper clips, washers, or safety pins
- thread cut into 4 inch lengths.

These items will represent pollutants that enter the water. Your scientist will also need a teaspoon and a clear container with a wide opening, such as a jar or bowl.

Have your young scientist add 1 cup of water to the container. Tell your young scientist that this represents a river. Read the following story or have your young scientist read it. As each episode takes place, have your scientist add the appropriate items to the water. Remind him or her that streams and rivers collect materials as they flow.

- Strong winds blow debris into the stream. Deposit 1 teaspoon of crumpled dry leaves (or dried seasoning), 2 pieces of small sticks, a few small gravels, and a few small pieces of metal into the water.
- A construction site has not used proper protective procedures; the rain and wind wash loose soil into the stream. Deposit 2 teaspoons of coffee grounds or cocoa powder into water.
- A car wash fundraiser takes place and the runoff flows directly into the stream. Deposit 1 teaspoon of dish detergent into the water.
- A fisherman gets his line caught and tangled, the line is cut loose without collecting it. Deposit 2 pieces of thread into the water.
- A nearby parking lot contains leaked oil, antifreeze, and other fluids. Deposit 1 teaspoon of cooking oil and 1 teaspoon of food coloring into the water.
- A pet owner takes her dog for a walk in the park. The dog goes to the bathroom and the owner does not collect the poop. Deposit 7 raisins or small candies into the water.
- After cleaning out the cabinet, a homeowner flushes unused medicines down the drain. Deposit 3 teaspoons of vinegar into the water.

Have your scientist make observations about the way the water looks and smells. Ask him or her to talk about the effects the look and smell might have on plants and animals that live in or near it.



Clean Up Time

Tell your young scientist that even though many of the activities in the previous activity occur regularly, all water gets treated before entering our homes. In this activity, your scientist will have an opportunity to try to clean up the polluted water.

Have your scientist gather the materials s/he will need for this activity.

- Polluted water from the previous activity
- 2 additional clear containers
- A funnel
- Items for filtering, such as cotton balls, pantyhose, coffee filters, colander, sieve, and sand

Have your young scientist make notes about the amount of water in the container: the color, the smell, and any observable pollutants. Then, have your young scientist think about each pollutant added to the water and consider which items might remove that item from water. Have your young scientist make predictions about which filter s/he thinks will take out each pollutant.

Next, have your scientist begin testing the different filters to clean the water. Have your young scientist pour the water and pollutants into the first filter, collecting the water in the second clear container. Have him or her write about the following questions.

- Was your scientist's prediction correct about what was removed?
- If the prediction was not accurate, what was removed?
- Was anything else removed?

Have your scientist continue testing each filter and recording whether each prediction was accurate and what may have been removed. Once all filters have been used, have your young scientist evaluate the water. Is the amount of water the same as when s/he began? What color is the water now? Is the smell different?

Ask your scientist why s/he thinks it is important to clean water. He or she will probably discuss humans needing clean water. S/he may also talk about animals and plants.

Extension: Have your young scientist consider other items that may help filter the water. Collect the items and continue the filtering process to return the water as closely to its original state. He or she might also try combining different materials to see if that is helpful.



Water Warrior Walk

Have your scientist take a walk in the area. Have him or her look for activities that might affect the quality of water. Even if you do not live near water, your scientist can still look for debris that might get washed into storm drains, people washing cars, and other activities. You may wish

to have your young scientist write down observations. Every week or two your young scientist can make new observations around the neighborhood.