

Changing Ecosystems: Day 3

Weekday Wonders helps young scientists explore changes in ecosystems this week. They begin by thinking about what changes in their neighborhood. The scientists will dig deeper into how the places that animals live change, focusing on both land and water. Then they will consider how often ecosystems change, finishing the week learning about why diverse ecosystems are healthier ecosystems.

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 places change for animals who live in water?



Daily Nature Journal

Have your young scientist go outside to complete his or her daily nature journal entry. You can use the [Guide to Nature Journaling](#) if your scientist needs a reminder on the information to put into nature journal entries.

Your scientist should also add to the Week-long Drawing that he or she started in [Monday's Weekday Wonders activities](#).



Freshwater Finds

Have your young scientist put on their thinking cap and try to write down as many animals as they can think of that might live in a creek, stream, pond, river, or lake. Your scientist should consider the smallest invertebrates to the larger reptiles, amphibians, and fish. They may need help to realize that this activity is focused on freshwater, rather than saltwater, so animals that live in the ocean should not be included on this list.



Habitat at Risk

In your young scientist's Freshwater Finds nature journal entry, s/he considered the different animals that live in bodies of freshwater. In this activity, your scientist will experiment to see what happens to a newt when the stream they live in becomes polluted. Start this activity by collecting a few household items to create a "newt," a stream, and the pollutants that will be introduced.

- empty 16 ounce or 1 liter plastic bottle
- kitchen sink or tub of similar size filled with water
- 1 cup of dirt
- 2 different food colors

To begin, help your young scientist use a nail or similar object to punch holes all around the plastic bottle. Tell your scientist that this plastic bottle represents a Spotted Newt. Newts are amphibians. Their skin is very sensitive and absorbs water.

Ask your young scientist to submerge the bottle at the bottom of the tub of water. The newt has now found a safe place to live at the bottom of the stream. Have your scientist observe the water and the newt at the bottom of the stream and share why this is a good habitat that will provide food, water, and shelter for the newt. They should notice that the water is nice and clean and should provide many food sources.

Tell your young scientist that a company has started constructing a large hotel next to the stream. As they are building, a rainstorm moves in, washing soil into the stream where the newt lives. Have your scientist pour some dirt into the water to represent soil that washed into the stream. Carefully swish the tub to evenly disperse the dirt into the water and have your scientist give your newt a squeeze under the water to represent a day passing.

Now have your young scientist imagine that quickly after the hotel opens, people visit the area and picnic around the stream. Some of these people leave their trash behind, and the wind blows it into the stream. To represent this litter, have your young scientist squeeze 20 drops of one of the food colors into the water tub. Carefully swish the water again, and have your scientist give the newt another squeeze to show time passing.

Finally, tell your scientist that the hotel parking lot collects oil and other car fluids from visitors' cars. Rain washes these fluids into the stream. Your scientist should squeeze 20 drops of the other food color into the tub. Give the tub another swish, and have your young scientist give the newt a final squeeze.

Have your scientist remove the newt from the stream to examine what they see, and have him or her consider what the newt's skin absorbed and how that changed over time. What do they think would happen to the newt?

Encourage your scientist to reflect in their journal and consider the following questions.

- What could the town do to help protect the stream?
- What other issues may occur if oil, litter, and soil are entering the stream?



Water Observations

Find a source of water near you, such as a pond, creek, or spring. Visit the water with your young scientist, taking a tall, clear container with you. **Note:** *Always be careful around water, particularly when it has rained or may rain soon. Do not take chances that may lead to slipping into the water or being caught in a flash flood.*

Have your scientist observe the water. Ask him or her to write or draw a description of the water, including what it looks like and what they see in it. Have your scientist label it “from the shore.”

Once your scientist has completed the description, help him or her carefully place the bottom of the plastic container into the water, just breaking the surface. Have your scientist look through the top of the container. What do they see? How is it different than what was seen just looking at the water’s surface? Again, your young scientist should write or draw a description, being sure to label it “beneath the surface.”

Have your scientist consider the differences between the two observations and note them on their descriptions or drawings. Discuss with your scientist how the water and the animals might be affected by litter, chemicals, or siltation.



Dance of the Drops

Have your young scientist pretend he or she is a drop of water falling into the yard or onto the house and create an interpretive dance to show what happens. Your scientist should move in a fluid way, imagining where he or she would go once they landed on the grass or roof. Have him or her consider the high and low points of the ground outside. As your scientist flows, ask him or her to think about what they may collect and carry with them if they were a water droplet. Add to the fun by having them narrate the story as they move.