

WEEKDAY WONDERS



Content developed by the
Tennessee Aquarium
Education Department



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Living Things and the Environment: Day 3

This week, Weekday Wonders will help young scientists explore ecosystems and the world around them. They will start by learning about living and nonliving things, then find out more about the needs of plants and animals. Toward the end of the week, young scientists will discover how plants and animals rely on each other and determine how the parts of an ecosystem share resources.

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

What do plants need to live?



Daily Nature Journal

Young scientists should complete a daily nature journal entry for the day. The [Guide to Nature Journaling](#) can help you guide them on how to nature journal. If they are doing their journaling in the same spot each day, ask what they see that is similar and different to other days.



Growing from Scraps

You may have fond memories of growing a potato in water when you were young. Did you know that this kind of investigation can be done with many other plants? In this activity, young scientists will have a chance to explore plants and their needs by growing them from food scraps you might have around the house.

Start by helping your young scientists gather the plant parts that they will grow. They will also need water, one or more small dishes, and a partially sunny area. More information about the type of plants and the parts to use is on page 2.

Have your young scientist add about an inch of water to each dish. Help your scientist cut the plant part to a 2–3 inch section. Partially submerge the plant scraps in the water and place the dish(es) in a sunny spot. For small seeds put a paper towel folded over several times in to the bottom of the dish and wet it,

then place your seeds on top. Help your scientist pick a spot that is sunny but does not get too hot during the day, or it will bake the plants rather than help them grow.

Each day, your young scientist should change the water in the dish. Within a week, they should be able to see some sprouting beginning. If not, encourage them to try again.

Plant parts that can be used for this investigation are as follows.

<u>Top</u>	<u>Root</u>	<u>Seed</u>	<u>Other</u>
Carrot	Onion	Pepper	Basil (stem)
Turnip	Green onion	Pumpkin	Mushroom (stalk)
Radish	Garlic	Avocado (pit)	Potato (peel with eye)
Beet	Celery	Dandelion	
	Romaine lettuce		

For the youngest scientists, talk with them about why they need to change the water every day and why they need to put the plants in a sunny spot. Plants need water and light to grow.

For older scientists, ask them to develop an investigation. For example, they might try to grow several pieces of potato: one with no water, one in the dark, one in a closed jar or container, and one in ideal conditions. This will help them further explore the idea that plants need water, sunlight, and air to grow.



Nature Journal

Explore a tree. Blindfold your young scientist and help them to a tree. Have them feel it and smell it, seeing what they can learn about the tree. If you have other types of trees near you, help them explore another tree.

Have your young scientists write or draw in their nature journals to describe the experience. What could they tell about the tree? Did they know which tree they were meeting? What was a surprise to them?



Sun Leaves and Shade Leaves

Ask your young scientist to find a bush or tree that is partly in the sun and partly in the shade for much of the day. This might be a bush that is partially shaded by a building or it might be that it has many leaves at the top and then other leaves that are shaded by the top leaves. Alternately, they can find two plants of the same kind, one in the shade and one in the sun. Then have your scientist compare the leaves in the two parts. What does your scientist notice is similar and different between them?

If you have a small ruler, ask your young scientist to measure several leaves from the part in the sun and several leaves that are in the shade much of the time. For each leaf, they should measure from the tip to the stem to compare the lengths. Slightly older scientists can take an average of the measurements for each section.

On graph paper (see page 4), have your scientist trace around a leaf from the sunny part of the plant and a leaf from the shaded part of the plant. Then ask them to count the number of squares contained within each outline.

Young scientists should find that leaves from the shaded part of the plant are bigger—both in terms of the measured size and the number of squares contained within the outline. This is because plants need sunlight to live. If they are in a sunny part of the plant, they can get sunlight easily. If they are in a shaded area, the leaves grow bigger so that they have more surface to absorb sunlight. This lets them still get the amount of sunlight they need, even if less light reaches them.

If your scientist does not see any differences, you can also ask them to simply explore the different sizes of leaves on a single plant. That can be interesting, too!



Move Like Seeds

One characteristic of living things is that they can reproduce, or make more living things like them. Plants have seeds that are spread around to help them grow new plants. Have your young scientist name as many ways that plant seeds get spread as they can. Then ask them to move across the yard to show each way seeds are distributed. Add in any ideas that your young scientist did not name. You can also write these movements on paper and have them draw a prompt to know which way to move.

Different plants have seeds that are distributed in different ways. Some ways that seeds can be spread are:

- float through the air
- explode
- pop or shoot out of the plant
- get eaten and moved with an animal then get returned to the ground in waste
- float downstream in water
- fall to the ground from the plant
- blown by wind
- carried on a human's shoe or clothing

Sun Leaves and Shade Leaves Graph Paper

