

WEEKDAY WONDERS



Content developed by the
Tennessee Aquarium
Education Department



TENNESSEE
AQUARIUM



Mad Scientists: Day 4

Science is an important part of our lives, even when we do not realize it. This week, young scientists will have a chance to explore some of the science topics that we encounter around us every day. Whether it is plants or weather, water or colors, this week young scientists have a chance to find out more about the science around us.

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

Why is the Sun important?



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.



Make a Sundial

Tell your scientist that today's activities relate to the Sun and what it does for us. Gather a stick and a cup or small container. Your scientist will also need something to mark the ground with, such as sidewalk chalk or a large piece of paper and a marker.

Ask your scientist to fill the container with dirt or rocks so that the stick will stand up straight in it. Have him or her write an X at the place s/he wants to make a sundial. Have him or her place the cup on the X and be sure that the stick is straight.

Next, have your scientist check the sundial on the hour. S/he should mark the ground along the stick's shadow, near the end of it. Each hour, he or she should mark the ground with the new location of the shadow. Try to keep the cup and stick in place all day, but if that is not possible your scientist should place it back on the X each time.

Through the course of the day, your scientist will be able to observe how the Sun changes position, as well as how the angle of the light changes based on the shadows. Your scientist may need to add marks over more than one day to represent all the hours of the day. We suggest trying to have marks for at least the hours of 9:00 a.m. through 4:00 p.m.

Over the following days, have your scientist try to tell the time based on the sundial. S/he will need to check their ideas with a clock for a while but will catch on quickly. Soon they will be able to tell the time just by using the sundial. Talk with him or her about how not only do we get light from the Sun, but it is in predictable patterns, so we can use it as a tool to help us do things like tell time.



Melting Ice

In [yesterday's Weekday Wonders](#), your young scientist had a chance to explore solids and liquids. Today, your scientist can use the same ideas to explore the energy that comes from the Sun.

Have your scientist gather different colors of construction paper, including a black piece. Ask your scientist to find a sunny spot and lay all the piece of paper out. Then have him or her put a piece of ice in the middle of each. Try to make sure that all the ice cubes are roughly the same size.

Have your scientist keep track of which pieces of ice melt the fastest based on the color of the paper. Black should melt the fastest.

Tell your scientist that the Sun warms the Earth. Different colors of paper absorb heat differently, so they heat up at different rates. Black absorbs the most energy, so it gets hotter and melts the piece of ice more quickly. This experiment helps to show the energy that comes from the Sun to the Earth. It also explains why it is not a good idea to wear a black shirt on a hot, sunny day!



Sun Prints

Ask your scientist to gather several small, opaque items. These might include leaves, flowers, favorite toys, or household items. Lighter items such as leaves and flowers may need to be weighed down with heavier items such as small rocks. Have your scientist choose a piece of construction paper. Darker colors such as blue and black work best.

Have your scientist place their construction paper on the ground outside where it will be in full sunlight for several hours. Ask him or her to arrange their small items on top of the paper. When s/he is happy with the arrangement, make sure s/he knows that it's important for the experiment that the items do NOT move until it is finished! Leave the paper in the Sun for 2-4 hours. When the paper appears significantly faded, have your scientist remove their items and bring their sun print inside!

The Sun's UV rays will damage (fade) the paper that is exposed to the sunlight. The sections of the paper that are shaded by the items are protected from the UV rays and do not fade. This is also a good example of why we should wear sunscreen outside—so the sun does not also damage our skin!



Sun Salutations

Tell your young scientist that in yoga, people often start with sun salutations, which comes from the idea of saluting the sun. The Sun is an important part of our lives, so in today's movement activity, have your young scientist do some sun salutations.

Sun salutations can help a young scientist focus and stretch his or her body. It also energizes the body and shows gratitude. There is a beach (or aquarium!) themed free, printable guide to sun salutations for kids found here: <https://childhood101.com/yoga-for-kids-sun-salutation/>. You can also find many videos about this movement on the Internet.



A Sunny Story

At this point, your young scientist should have some ideas about why the Sun is important for living things. Ask him or her to write a story about a day when the Sun “slept in” or “took a vacation.” Have your scientist use the story to show what would happen if we did not have the Sun for a day.