

# KINDERGARTEN SCIENCE EXPLORATIONS TO DO AT HOME

One of the three core principals of [Each Child, Our Future](#), Ohio's strategic plan for education, is partnerships. The plan recognizes the collaboration between teachers and parents as the most important partnership. This document provides activities for students to complete in a home environment, allowing parents to be more closely involved in each child's mastery of science concepts. The investigations are written for a home setting using limited resources and are specifically targeted to each of [Ohio's Learning Standards for Science](#).

The resources listed in this document are provided to enhance planning, instruction and learning about science. They are not mandatory. Local districts are responsible for establishing the local curriculum and identifying appropriate instructional resources. The at-home projects are intended to provide activities that can be used by teachers to assign as homework or share with parents to supplement classroom instruction. Teachers should feel free to adapt the activities to align with the local curriculum. The projects are designed with the intent that technology is not necessary; although in many cases, the activities could be extended with additional components. When possible, data can be shared in small groups or with the entire class, analyzed and discussed to deepen understandings that students uncover during these activities.

It is important to build a strong foundation in science in the early elementary years so students are prepared for understanding more complex material in the intermediate and middle grades. It is equally important to continue students' science instruction by offering more advanced courses at the high school level. This allows students to be better prepared to compete for admission to college or other postsecondary programs, as well as for increasingly technical jobs. Advanced science courses in high schools also help produce a more scientifically literate public.

## **K.ESS.1 Weather changes are long-term and short-term.**

**Outside option:** Make a weather station out of household materials. Include something that can show which direction the wind is blowing like a piece of cloth or a homemade wind vane. Use a container with markings to collect rain. If you don't have a thermometer, just tell the temperature with words like very cold, cold, cool, warm, hot, very hot. Track the weather every day, recording it in a journal, on a chart or on a wall calendar. What are some ways the weather changes from day to day and from one season to the next?

**Inside option:** Make weather observations at a window. Choose a way to tell how hard the wind is blowing. Is it sunny, cloudy, storming? Draw a picture of the clouds you see. Are they white and puffy? Flat and gray? Black and scary? Listen out your window for animal noises (birds, insects). Do they change with different weather? Look for "pictures" in the clouds. Make up a story about your cloud picture. Have a parent write it down if you need help. Illustrate your story.

## **K.ESS.2 The moon, sun and stars can be observed at different times of the day or night.**

**Outside option:** Track the moon daily. Draw the shape of the moon and write what time you can saw it. Is the moon only out at night? Look for the moon at various times. What times can you see a full moon? Try to figure out when it rises and sets. What times can you see a crescent moon? Does it rise and set at different times than a full moon? Does the moon seem to move across the sky like the sun does? Find the moon, then check on it again an hour later to see how its position has changed.

**Inside option:** Make a series of drawings with your house and the sun. Show where the sun is compared to your house in the early morning, late morning, early afternoon and evening. You could do the same project for the moon.

**K.PS.1 Objects and materials can be sorted and described by their properties.**

**Outside option:** Practice measuring things in your yard or at the park. Compare the sizes of trees by wrapping a string around each trunk and putting a mark on the string for the diameter of the trunk (or cutting the string to length).

**Inside option:** Practice sorting household objects (toys or foods). Put them in order from heaviest to lightest, from longest to shortest, sort them by color or texture. Measure the size of objects by counting how many paperclips (or other object) long each is.

**K.PS.2 Some objects and materials can be made to vibrate to produce sound.**

**Outside option:** Make a wind chime garden. Design one or more devices that can make sound when the wind blows. Use materials you have around the house. Hang them where the wind can blow on them. Which materials make the loudest sounds? What do you observe about your materials when they are making sounds? Do they vibrate? What makes them start vibrating?

**Inside option:** Explore the sounds you can make with a plastic bottle. What happens when you blow across it? Does it change if you have water in the bottle? Does the amount of water make a difference in how it sounds? Try tapping a glass with water in it. What changes if you add more water? What if the glass is empty?

**K.LS.1 Living things have specific characteristics and traits.**

**Outside option:** Take the living organism challenge. Find as many living things as you can in your yard, field or park. Make a list by writing them down (a parent or older sibling can help) or by taking a picture of each. Call a friend on the phone and compare your lists. Who has the most? Do you have any your friend doesn't? Keep adding to your list.

**Inside option:** Look through your books and magazines to find pictures of living things. Are the living things characters in the story or just part of the background of the illustrations? Practice counting the number of living things in each picture. Which book has pictures of the greatest variety of living things? Which of the living things are real and which are imaginary?

**K.LS.2 Living things have physical traits and behaviors that influence their survival**

**Outside option:** Choose a living organism to observe. Try to identify the purpose of as many parts of the living thing as you can. Observe the behavior of the plant or animal. If it's an animal, where does it go? How does it get food? Where does it rest? How does it move? For a plant, see if it bends toward light or if parts of the plant open, close or move at different times of day. Some easy animals to watch include ants, squirrels and birds. If you have a wet area, this also can provide things to observe. You could attract animals to observe by providing a food source.

**Inside option:** Interview a grandparent or other relative by phone. Ask him or her to explain the purpose of each part of a familiar living organism (a pet, a tree). Write a list of each part and what it does. Ask why each part's shape or location is best for helping the organism survive.