



Getting Ready for School: Science with Your Child Everyday

Young children are natural born scientists! They are curious. When they play, they observe, experiment, ask questions and try to figure out how things work. Observing, experimenting, asking questions, and trying to figure things out are all key skills for school and life. You can support your little scientist!

Why is this important for school readiness?

Our world is changing and becoming more technological every day. Studies show that children can develop an interest in science, technology, engineering and math (STEM) when they are young. These areas will provide more career opportunities in their future.

Science helps children develop many different skills. They develop scientific skills like exploring, observing, making predictions, experimenting, and problem solving. Science also helps children develop their senses and awareness of the world around them.

Through science, children develop the ability to communicate their ideas, remain organized and focused, and develop critical thinking skills they will need throughout their lives.

Children are hands-on learners who explore the physical world around them through their play. "Like scientists using the scientific method, children have their theories about how the world works (their hypothesis), they test those theories (the experiment), they observe what happens (document the findings), and then try again (revise the theory and conduct another experiment)."

Science appeals to children because it gives them a way to be smart and to solve mysteries.

What can families do to help?

- ❖ Science can be fun and simple. You do not need fancy materials to provide your child with scientific learning opportunities. You can take advantage of everyday activities to support science by asking questions, talking with your child, and learning together.
- ❖ Observe outdoor animals such as birds, mammals (ex: squirrels), and insects. Talk about their features (ex: wings, legs), what they eat, and where they live.
- ❖ Watch the moon together as it appears to change shape over the course of a month. Draw pictures or take a picture to record the moon's different phases. Discuss what you both see and what is happening.
- ❖ In the kitchen, point out the changes that happen when you boil a liquid such as water or when cake batter is baked.
- ❖ It is important to ask your child questions when you participate in a scientific activity together. For example:
 - What happens when... (we add food coloring to the play dough recipe)?
 - How did... (the flower grow so tall)?
 - Why did... (the flower's petals fall off)?
- ❖ Remember, when participating in science activities it is important to follow your child's lead while keeping them safe. When your child carries out a simple experiment and it does not work, it is important to talk about why it did not work and to try again. This is part of the process of learning science.
- ❖ Always encourage your child's interests in science.

Activities to do with your preschooler:

❖ Add Materials to Your Child's Play: **Ramps**

Your child may enjoy playing with cars, trucks, and trains. Adding a plank of wood can get your child to begin thinking about physics, the science of motion and force. Here's one way to do this.

- Allow your child to first explore how he or she can use a board when playing with toy vehicles.
- Join the play and follow your child's lead. Suggest propping up one end of the board (for example on a stack of books) and sending a car down it (if your child hasn't already done this).
- Wonder aloud about making the car travel slower or faster down the board by adding or taking away books from the stack the ramp is on. Then experiment together. Your children will figure out that the steeper the incline, the faster the car will travel. To extend the experiment try other toys that roll!

❖ Looks Like Magic, But It's Science: **Leak Proof Bag**

This is a simple experiment you can do with your child that looks like magic but relies on chemistry. It works because the plastic bag is made of a polymer which has long flexible molecules. When your child pokes a pencil through the bag, the molecules of the bag wrap themselves around the pencil and the bag doesn't leak.



- You need a one-gallon plastic bag and sharpened pencils.
- With your child, fill the bag about halfway with water and then seal it. While holding it over the sink, have your child use the sharpened pencil to poke a hole right through the bag – in one side, out the other – and leave the pencil in the bag. You can do this with as many sharpened pencils as you have.

❖ Recording Children's Observations and Discoveries: **Making Good Use of Electronics**

Writing, drawing, audio recordings and pictures are all good ways for children to record their observations; keeping track of what you see is an important skill in science. When you notice your child is observing something such as melting

snow, leaves changing on the trees, a growing plant, you can suggest that your child record what he or she saw. "Do you want to draw that?" or "Do you want to take a picture?" or "Do you want me to help you write down what you noticed?" You can use your smart phone to take pictures or record sounds. You can use the internet to look up information and together learn more about the topics that your child is interested in.

❖ Playing with the Density of Liquids: **Lava Lamp Experiment**

There are many versions of the lava lamp experiment you can do with your child. As with all these types of experiments, you need to do it with your child, but have your child do as much of it as possible. Lava Lamp experiments work because they use liquids of different densities and chemical reactions. Vinegar is heavier or more dense than oil, and baking soda creates carbon dioxide bubbles (chemical reaction) when liquid is added to it. It's very cool to do and watch!



- You need: a clear plastic bottle or tall cup, baking soda, vegetable oil, vinegar, food coloring, funnel, eye dropper, small plastic cup
- Place a funnel in the bottle and ask your child to add 3-4 tablespoons of baking soda so it's flat at the bottom of the bottle. Use the funnel and pour enough oil so the bottle is about 2/3 full.
- Pour ½ cup vinegar into a small cup and ask your child to mix in a few drops of food coloring, then stir. Ask your child to add the colored vinegar to the bottle using the eye dropper and a few drops at a time and see (and maybe record) what happens,

Online Resources for families:

[Parenting Science: Preschool science activities](#)
[Fun Learning for Kids: 30 Science Activities](#)

Resources used for this tip sheet:

[Importance of Learning Science for Young Children](#)



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