

EDUCATION RAISING KIDS

# How to Raise Scientifically Literate Kids

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Imagine if our kids walked into their schools to take a test and told the teachers that all their answers must be correct because they're using "alternative facts." What if a true or false exam could never be marked wrong because the truth was left up to interpretation? The presumption behind the use of "alternative facts" is that whatever you claim must simply be accepted as truth, without proof.

I could go on and on about why this is a travesty to society and future generations, but let's focus on what we can do as parents to raise children who view information through a realistic, scientific approach so that they don't fall prey to such lies in their lives.

## What is scientific literacy?

According to the [National Academies](#), scientific literacy is "the knowledge and understanding of scientific concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity." A scientifically literate person has the capacity to:

- Understand, experiment, and reason as well as interpret scientific facts and their meaning.
- Ask, find, or determine answers to questions derived from curiosity about everyday experiences.

- Describe, explain, and predict natural phenomena.
- Read articles with understanding of science in the popular press and engage in social conversation about the validity of the conclusions.
- Identify scientific issues underlying national and local decisions and express positions that are scientifically and technologically informed.
- Evaluate the quality of scientific information on the basis of its source and the methods used to generate it.
- Pose and evaluate arguments based on evidence and to apply conclusions from such arguments appropriately.

Science is a tremendously critical part of our lives. We rely on scientific data to protect us from contaminated food, polluted air and water, and transportation accidents – just to name a few. Every time we go to the doctor, our lives depend on accurate medical information. When we go shopping, our health and safety are tied to numerous scientific studies that have identified which products are safe for us to use.

If we no longer believe in science, then we are no longer safe.

### **How to raise scientifically literate children**

Neil deGrasse Tyson is an American astrophysicist, cosmologist, author, and science communicator – and also a father. During an interview a few years ago, he explained the importance of raising scientifically literate children. He said that it is important for children to be surrounded by situations that force them to think about how the world works.

Understanding science empowers them to not be taken advantage of and helps them to confront critical issues that impact their lives, and society as a whole. He emphasized that if children do not grow up to be scientifically literate, they will be disenfranchised from the democratic process.

We have the power to raise educated children who have the ability to evaluate the information presented to them. Here are some ways that you can instill a sense of inquisitiveness and scientific literacy in your children.

#### **Read**

From a very young age, read books about science topics to encourage your children's curiosity and broaden their knowledge base. As they get older, encourage them to read about science topics that interest them, whether it be dinosaurs, outer space, climate, or computers.

Check out the [National Science Teacher's Association book recommendations](#), subscribe to magazines like [National Geographic Kids](#), and find websites geared toward science education for children.

#### **Watch**

Seek out children's television programming and videos that focus on science. My children loved watching [Sid the Science Kid](#) on PBS when they were younger, which is all about the scientific discovery process.

Now that my son is older, he enjoys watching Discovery Channel shows, including [Mythbusters](#), which tests scenes from books or movies using experiments. I love this show because it really teaches the value of not believing everything we see, and instead to test ideas using the scientific method.

#### **Visit**

Take your children to [awe-inspiring places](#) where they can learn about science, such as museums, planetariums, botanical gardens, aquariums, nature centers, and zoos. Incorporate science into your vacations by hiking, skiing, fishing, and visiting places like national parks, lakes, and beaches. During these activities, encourage your children to ask questions about what they observe and enjoy a back-and-forth discussion.

#### **Experiment**

When it comes time to make birthday and holiday wish lists, be sure to add some science kits to your children’s list. My children have always enjoyed these. They’ve built their own model volcano, hooked up electric circuits to make things spin or buzz, and learned about measuring and chemical reactions using everyday products.

You can also set up your own experiments. It can be as simple as filling up the kitchen sink with water and testing different items to see what sinks and what floats. Be sure to ask your children to predict what will happen before doing the test, and then ask why they thought it happened after their observations.

**Attend**

Sign your kids up for extracurricular science and technology classes or summer camp. A couple summers ago, my son enjoyed a week at [Camp Invention](#), and now he attends a local computer science class after school. These have been great opportunities for him to learn in depth about science topics that especially interest him.

**Create**

By incorporating simple science-based activities into your children’s daily life, you can inspire their interest in and love for science. Spend time together in the kitchen baking and explaining how measuring works and why baked goods rise in the oven. Plant a family garden and appreciate [spending time outside](#) learning about nature and then enjoying the food that grows. When your children need to take medicine, explain how chemicals affect us and how important it is to follow the directions on the bottle.

There are endless opportunities to bring science to the forefront of your children’s lives so that they begin to see the world through a scientifically literate lens. When you learn together, you make it incredibly meaningful, and most of all, have fun!

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Excellent ideas! We agree, critical thinking skills, a sense of awe and wonder, and an appreciation for discovery can be gained at young ages by delving into the world of science. And to do science for GOOD, we recommend looking into how kids can become Citizen Scientists as well. :-)

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