National Education Association

A Parent's Guide to Raising Scientifically Literate Children

This guide was developed to provide parents with information they can use to support their children in the learning of science.

Science is all around us.

Nearly everything we do has a scientific or technological implication. We are a nation of citizens that depend greatly on science and technology. Parents and educators can do many things to build a love and respect for science in our children.

What does it mean to be scientifically literate?

Scientifically literate children have and continue to develop the critical thinking skills necessary for academic success. Scientifically literate citizens understand the importance of science in their daily lives, can evaluate public policy decisions, and make informed decisions about science reports in the media.

Teachers talk about hands-on science. What are they talking about? What does it mean for my child?

Often in the past science was only defined as reading the text and answering questions about the science content or watching the instructor demonstrate a science experiment. Teachers still use these strategies, but now we also see children with their "hands-on" the materials, learning about science first-hand and conducting experiments themselves. Under the guidance of teachers, students experience the excitement of observing scientific phenomena directly.

What if my child's teacher doesn't seem to teach science?

Ask questions to find out why that is. Often teachers integrate science with other subjects and so you may only think science is not taught. Volunteer to help. Hands-on science takes much organizing and many consumable materials. Offer to set up a program to collect the cotton balls, straws, paper plates and other materials needed for an effective science program. Volunteer to help out during your child's science class, or offer to share your scientifically related hobby or job with your child's class. If you're a gardener or an engineer, share what you know.

What can I do to encourage my child?

- Foster your child's natural curiosity. Take a 10-minute walk around the backyard, your neighborhood or a local park. Start a collection of natural items such as leaves. Take the leaves home and identify the trees they came from (visit The National Arbor Day Foundation at www.arborday.org for help). You and your child can make rubbings of the leaves by placing white or notebook paper over the leaves and using a crayon to rub over the paper. You should see an imprint of the leaf on the paper. Write one or two sentences that describe what you and your child observed. Read the book as a bedtime story.
- Take your child to a museum or a nature center. Many cities and towns have museums or technology and nature centers designed specifically for children. If there isn't a center or museum in your town, take a virtual field trip on your computer or a computer in the library. Visit:
  Exploratorium: The Museum of Science, Art and Human Perception - www.exploratorium.edu
  Oregon Museum of Science and Industry - www.omsi.edu
  American Museum of Natural History presents Ology - http://ology.amnh.org

Dive and Discover: Exhibitions to the Sea Floor (Woods Hole Oceanographic Institution) - www.divediscover.whoi.edu
DuPage Children's Museum - www.dupagechildrensmuseum.org/kdn
Current Science and Technology Center at the Museum of Science of Boston - www.mos.org/cst

- Consider a camp that focuses on science or technology. If your child is interested in space, the *U.S. Space and Rocket Center*- www.spacecamp.com holds week-long space camps for children ages 9-18, and the United State's first woman astronaut, Sally Ride, sponsors a special parent/daughter weekend program, specifically designed for girls between 7 and 11 years of age.

Other things you can do. . .

- Encourage your child to take science every year she's in high school. Typically, colleges are looking for students to take two to four years of laboratory science.
- Take family time and do an experiment together. It can be as simple as filling up the kitchen sink with water and testing items to see what sinks and what floats, or shaking heavy cream in a jar until it turns to butter. Ask your child to predict what will happen before doing the test, and ask why he thought it happened after.

What if we do an experiment together, and my child asks a question and I don't know the answer?

That's okay. In fact, that's what science is all about — finding out the answers to questions that we have and things we wonder about. Say, "I've often wondered that myself. How do you think we could find the answer to that question?" Then, look for the answer together.

Help your child choose a book from the National Science Teachers Association's (NSTA) list of *Outstanding Science Trade Books for Students K-12*. The NSTA has published these lists since 1996. Access them online or write for a single copy of the list by sending $2.00 with a stamped (3 oz.), self-addressed 6"x 9" envelope with 83¢ postage to CBC at 12 West 37th St., 2nd fl, New York, NY 10018-7480.

What references are available to help me support my child's interest in science?

Web sites:

The National Science Teachers Association - www.nsta.org
American Association for the Advancement of Science Pro0ject 2061 - www.project2061.org/default_flash.htm

Books:

The Way Things Work. David McCauley
365 Simple Science Experiments. Muriel Mandell, E. Richard Churchill, Louis Loeschnig, and Frances Zweifel
The Five Biggest Ideas in Science. Charles M. Wynn and Arthur W. Wiggins
Reader's Digest Children's Atlas of the Universe. Robert Burnham

Magazines:

National Geographic for Kids
National Geographic
Ranger Rick
Your Big Backyard
Discover
Zoobooks