



Bulletin

Massachusetts Parent Information & Resource Center (PIRC)

Available online in English, Spanish, and Portuguese at www.masspirc.org



Science in the Summer



Why is the sky blue? Where do mountains come from? Why do things fall? Why? Parents are used to tough questions! Summer is a great time to foster children's natural curiosity by engaging in these questions. You don't have to know the answers, be a rocket scientist, or even be "good" at science yourself to foster a love of science.

Here are some tips to guide you in sparking your child's interest in science:

- 1) **Your attitude sets the stage for learning.** Curiosity, excitement, joy—these powerful emotions influence learning. Parents' attitudes can keep this natural enthusiasm strong. Encourage questions, help kids find answers, talk about their interests. Avoid negative statements such as, "I never liked science."
- 2) **Science is for everyone!** Many of us grew up believing that only some people were good at science. Today, we know that kids' beliefs about their abilities make a huge difference in their success. Science is really about looking at the world as a problem-solver. It means being willing to grapple with not knowing the answers. Effort and hard work are what matter most. When you see your child wrestling with a problem, praise that effort.
- 3) **Help children explore the science around them.** Summer time is a great time to 'think science.' Play games and choose activities that help kids become familiar with scientific concepts and thinking. In addition to the ideas below, the U.S. Department of Education has a list of activities to do at home and in the community at www.ed.gov/parents/academic/help/science/index.html (English and Spanish).
- 4) **Help children observe objects carefully.** Noticing details can help children learn to classify or group things. You can help by asking questions about an object's size, shape, color, how it moves, and how it might change over time. Encourage your child to record these observations.
- 5) **Encourage children to ask questions.** Curiosity is the essential trait of a scientist. Learning to ask questions, propose answers, and test them out are keys to learning in all academic disciplines.
- 6) **Listen to children's ideas and explanations.** Being listened to gives children confidence. Expressing their ideas helps them sort out what they know and don't know.
- 7) **Introduce your children to different environments.** Beaches, swamps, and parks, as well as kitchens and backyards are good places to discuss science. Look for situations that encourage playful exploration. Check out museums, libraries, zoos, aquariums. Libraries often have free or low cost tickets for these resources.
- 8) **Seize the teachable moments.** Your child sees a beautiful flower and asks about it. Take the opportunity to discuss flowers and how they grow. You can follow up by planting bulbs or flower seeds in the garden or in the house and watching them grow. Toys can also spark discovery and learning. It's not the number of toys that is important, but the kind of toys. The more things a child can do with a toy, the more likely it is to be educational.
- 9) **Provide hands-on experiences.** Give children the chance to do science. Science begins for children when they discover that they can learn about the world through their own actions, such as blowing soap bubbles or adding a block that causes a structure to collapse. Talk about what is happening. Actions that require children to use their senses, such as planting and watching a seed germinate, give a strong framework for abstract thinking later in life.
- 10) **Use the media.** Many movies, television specials, magazines, newspapers, books, and computer programs focus on science. Talk with your children about the science they see. Was it interesting to them, and why? Also, check out Web sites. An excellent place to start is the National Science Teachers Association Web site at www.nsta.org/portals/parents/explore.aspx.

Did you know...

...about two-thirds of the academic achievement gap can be explained by unequal access to learning opportunities over the summer? Over time, summer learning loss can make a student's chances of graduating or entering college less likely.

Parents and their communities are critical to keeping learning alive over the summer.

All kids deserve and need opportunities to continue learning over the summer!

Curriculum Frameworks: Good ideas to try at home

Massachusetts education standards are known as *Curriculum Frameworks*. They describe what all students should know and be able to do at various grade spans in each academic subject area. Each spring, statewide MCAS tests assess how well students have learned the standards.



An example of science standard for grades Pre-K to 2 is: "Understand that air is a mixture of gases that is all around us and that wind is moving air." The suggestion for teaching this idea that you can do at home is to "Use a hand pump to inflate a

basketball. Observe and discuss how and why the basketball gets larger as you add more air." The idea that "air takes up space" can also be show by blowing bubbles.

The *Curriculum Framework* for each subject has a section at the end ("Appendix") that gives "Additional Activities to Enhance the Learning Standards." You can look at the *Curriculum Frameworks* for all grades spans and subject areas at www.doe.mass.edu/frameworks/current.html.

Sources:

- "Helping Your Child Learn Science." 2005. Washington, D.C.: U.S. Department of Education. (In English and Spanish). www.ed.gov/parents/academic/help/science/index.html
- "How Can I Help My Child Become More Interested in Science, Technology, Engineering, and Mathematics?" Retrieved 4/15/09. <http://ksnn.larc.nasa.gov/parent.html>

Stop the brain drain and turn on the faucet to summer learning!

Summer is a great time to bring science to life for your kids! Your own kitchen or backyard, window sill and playground are full of opportunities to explore and experiment with subjects like biology, how plants grow, the weather, and the environment. These "informal" opportunities, outside the school walls, can give a great boost to your child's science learning.

This *Bulletin* suggests ways to keep learning alive during the summer months while nurturing children's curiosity about science.

For more about how you can support your child's education, or to be added to the Mass PIRC mailing list, please visit www.masspirc.org or call toll-free at 1-877-471-0980. Telephone assistance, Web site, and print resources are available in English, Spanish, and Portuguese.



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