Bringing Families and Science Together

With school and family support, children can learn about science during everyday school activities.

By Dara Hallman Gardner

How often have you heard parents say, “I was never very good at science,” as an excuse for their child’s lack of interest or success in science? Parents who share this fear of or discomfort about science may pass those feelings along to their children, affecting their children’s perception of the importance of science and their ability to do science (Kober, 1993).

Research has shown direct links between parental attitudes and student achievement at all grade levels. Studies show that the family experiences that students bring to school are some of the biggest predictors of success (Hazen and Trefil, 1991).

Families and schools should support each other in encouraging student interest and performance in science. Parents can take an active role in incorporating science into everyday life, while schools can make an effort to emphasize the relevance of science both inside and outside the classroom.

Science Is Everywhere

One way to bring science, families, and schools together is to incorporate science into events that typically happen during the school year. Conscious planning by teachers and administrators to bring science into these activities can create an effective learning experience for students.

School carnival. Create carnival games that explain physics principles and allow participants to change variables to make the games easier (or more difficult). Have each classroom create a booth to demonstrate these science principles and make these students the “experts” at the carnival.

PTA meetings. Have students present a short science lesson to parents. Student enthusiasm and knowledge can be very impressive and will emphasize to parents the benefit of a strong science program.

Science fair. This might seem obvious, but try to make it more of a community event, with speakers, exhibits, and hands-on activities. Expand your planning team and include university faculty and local professionals.

School assemblies. Bring in local scientists to share their models, such as a naturalist with his or her animals. Or have representatives of an outreach education program from a regional science center or museum provide exciting demonstrations and/or theatrics. Invite parents to attend the assemblies.

Ice cream social. Concoct liquid nitrogen ice cream, dry ice punch, rock (crystal) candy, or some other “cool” science food at a planned social event.

Open house. Arrange simple make-and-take science activities and have
students demonstrate these activities in various classrooms.

**Schoolyard cleanup.** Learn about the environment by doing a study on the amount and type of trash collected at school, or perhaps a study of various signs of erosion.

**Book fair.** Promote exciting science books by bringing in science authors or having students do a demonstration from a science activity book.

**School performances.** Work with the music teacher or local musicians to produce a low-tech band concert with homemade instruments that demonstrate principles of vibration and sound (see “Physics to Beat the Band,” *Science and Children*, November/December 1994).

**Sports events.** Highlight intriguing science facts during programs at school sports events, such as “A 400-foot home run will go about six feet farther for every one-inch drop in the barometer” (Adair, 1994). You can find many interesting facts in the book *Sportsworks* from the Ontario Science Center.

**Newsletters.** In every newsletter, include a science investigation for families to do at home with resources that are close at hand, such as experimenting with bubbles while cleaning the kitchen or washing the car.

**Field trips.** Brainstorm local resources and sites that emphasize scientific processes but might not be traditionally thought of as science, such as a dairy processing plant or an automobile factory. Ask the tour guide to mention specific scientific aspects of the site.

**Career days.** Invite community science professionals such as field biologists and DNA researchers to speak to the students. Ask all career speakers to mention how they use scientific principles in their jobs and to share what interested them in science when they were in school.

**Parent-teacher conferences.** Use a science activity to demonstrate a student’s progress in science since the beginning of the year, such as sorting and classifying objects or using batteries and bulbs to make a circuit. Give suggestions about how reading, writing, and mathematics skills can be emphasized using science—both in and out of the classroom. If portfolios are part of the parent-teacher conference, select a project (like planning a garden) that might include measuring, observing, and recording. Include a writing or literature assignment in conjunction with the project.

**Getting Involved**

When parents see the relevance of science in these activities, they may be more inclined to support an improved
science program within the school, as well as take initiative to participate in science-related activities outside the school. In order to make many of these activities successful, parents can help their children by taking an active role in their science learning. Encourage parents with these tips:

**Look for science in everyday experiences.** Parents can take opportunities to ask and to answer “What would happen if . . . ” questions. Children need to know that science isn’t just a “subject” but instead a way of asking questions and looking for answers to help them understand the world. These experiences can be found everywhere—if parents take the time to look.

**Encourage girls and boys equally in science.** Kahle and Lakes (1982) showed that nine-year-old boys had more opportunities than girls their age to use scientific equipment, perform science experiments, and take science-related field trips. All young children should be given opportunities in a variety of subjects so they may find areas of interest to pursue.

**Lead family discussions on science-related topics.** Parents should discuss in everyday conversation news stories or science- and technology-related storylines in movies or television shows. They can also ask their children what they think will happen in the future if certain events take place and to consider whom those events might affect.

**Explore informal education sites.** Science centers, museums, and natural science institutions give children the chance to make independent discoveries and participate in scientific processes while having a good time.

**Become active in your child’s formal education.** Opportunities for parents to volunteer in the school science program are plentiful. Parents can be guest speakers who relate how science is involved in their jobs, assist with hands-on activities, or coordinate a field trip to a science-related institution. It is important that parents take an ongoing interest in what is happening in school each day and encourage their children to share daily discoveries.

### Understanding Science

According to the new National Science Education Standards (1996), “An understanding of science makes it possible for everyone to share in the richness and excitement of comprehending the natural world. Everyone deserves to share in the excitement and fulfillment that can come from understanding and learning about the natural world.” Families and schools can make this happen together.

### Resources


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