NSTA Position Statement

Parent Involvement in Science Learning

Introduction

The National Science Teachers Association (NSTA) believes the involvement of parents and other caregivers in their children's learning is crucial to their children's interest in and ability to learn science. Research shows that when parents play an active role, their children achieve greater success as learners, regardless of socioeconomic status, ethnic/racial background, or the parents' own level of education (PTA 1999; Henderson and Mapp 2002; Pate and Andrews 2006). Furthermore, the more intensely parents are involved, the more confident and engaged their children are as learners and the more beneficial the effects on their achievement (Cotton and Wikelund 2001).

Historically, innovations in science and technology have been powerful forces for improving our quality of life and fueling economic development worldwide. To continue to reap the economic and social benefits that accrue from such innovation, as well as to find solutions to challenging problems in the areas of health, energy, and the environment, we must ensure parents and children value science learning and recognize the tremendous opportunities that can arise from being more scientifically and technologically literate and better prepared to participate in the 21st-century workforce.

Parents and other caregivers have a critical role to play in encouraging and supporting their children's science learning at home, in school, and throughout their community. Teachers also play an important role in this effort and can be valuable partners with parents in cultivating science learning confidence and skills in school-age youth. NSTA recognizes the importance of parent involvement in science learning and offers the following recommendations to parents.

Declarations

Children are naturally curious about the world around them. Parents and other caregivers can nurture this curiosity in children of all ages by creating a positive and safe environment at home for exploration and discovery.

- Acknowledge and encourage your children's interests and natural abilities in science, and help them further develop their interests and abilities over time.

- Encourage your children to observe, ask questions, experiment, tinker, and seek their own understandings of natural and human-made phenomena.
- Foster children's creative and critical thinking, problem solving, and resourcefulness through authentic tasks such as cooking, doing household chores, gardening, repairing a bike or other household object, planning a trip, and other everyday activities. Actively engage with your children during mealtime discussions or group games requiring mental or physical skills, or by talking about books they are reading or television programs about science they have watched.
- Provide frequent opportunities for science learning at home and in the community through outdoor play; participation in summer programs; or trips to parks, museums, zoos, nature centers, and other interesting science-rich sites in the community.
- Provide your children easy access to science learning resources such as books, educational toys and games, videos/DVDs, and online or computer-based resources.
- Join your children in learning new things about science and technology. Take advantage of not knowing all the answers to your children's questions, and embrace opportunities to learn science together.

Schools are essential resources for science learning. The more actively engaged parents and other caregivers are in their children's schooling, the more beneficial schools can be for building their child's appreciation and knowledge of and confidence and skills in science and technology (Cotton and Wikelund 2001). This holds true throughout the school-age years, from preschool through college.

- Become a partner in your children's schooling. Communicate regularly with your children and their teachers, school administrators, and counselors to learn more about your children's science learning opportunities and performance.
- Encourage your children to participate in extracurricular opportunities focused on science, technology, engineering, and math (STEM), such as clubs, field trips, after-school programs, and science research competitions.
- Seek out opportunities to meet and get to know teachers of science. Volunteer in the classroom or on a field trip; serve on a science curriculum review or policy development committees; or attend a school's open house or family science night event.
- Be informed about the science program at your children's school. Learn more about the school's curriculum and the amount of time devoted to science learning and hands-on laboratory experiences at each grade level, and find out whether teachers believe they have the necessary resources and experience to teach science effectively. Become involved with the local school board to ensure that science learning is a top priority in the school system and that adequate resources are available. If you are home schooling, be sure that you are meeting or exceeding the same science standards covered in the local school curriculum.
- Establish high expectations for your children's science learning, as well as for the school system that fosters it.

- Be an advocate for science learning by supporting local, state, and national science education policies and investments in science resources, including school curriculum materials, laboratory equipment, and teacher and administrator professional development. It is also important to advocate for organizations that support schools and home school families, including museums, libraries, and other science-rich nonprofit organizations.
- Reach out to policy makers to impress upon them the value of science and technology learning and its importance to your children's future.

Parents and other caregivers play an important role in ensuring that their children have the necessary knowledge and skills in science and technology to become scientifically literate and informed citizens. It also is imperative that we develop a strong science- and technology-skilled workforce. Parents can encourage children to consider and pursue a science- or technology-related career and to obtain the necessary knowledge and skills that will allow them access to and success in such a career.

- Seek out opportunities to introduce your children to individuals in your community whose work relates to science or technology. This may include trades and professions such as construction or manufacturing, public safety, medicine, natural resource management, or research.
- Participate in "Take Your Child to Work" days, and expose them to the science and technology in your workplace. Encourage your employer to promote and support these opportunities.
- Attend career fairs with your children. Help them explore a broad range of career options and learn about and understand the necessary skills and coursework required to pursue these careers.
- Look for special events and programs in your community that enable your children to meet scientists, or visit a worksite or local university where science and technology are prevalent. Support your children's participation in online academic mentorship programs that pair students and scientists to carry out STEM projects.
- Find opportunities in your community to connect science and technology businesses, schools, and non-school learning venues such as museums, libraries, and clubs. Encourage both financial and personnel investments in science learning. Ask businesses to give employees release time to support science learning at school or in the community and to become mentors for school-age youth.
- Encourage your children to disbelieve negative stereotypes about scientists, and help them understand that anyone can have a career in science.
- Model values that support learning, self-sufficiency, responsibility, and hard work so your children will develop at an early age the confidence and determination to pursue their career interests in science or technology.

—Adopted by the NSTA Board of Directors
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References

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Henderson, A. T., and K. L. Mapp. 2002. *A new wave of evidence: The impact of school, family, and community connections on student achievement.* Austin, TX: Southwest Educational Development Laboratory. Full report available online at *http://www.sedl.org/connections/resources/evidence.pdf*; conclusion available at *http://www.sedl.org/connections/resources/conclusion-final-points.pdf*.

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Pate, P. E., and P.G. Andrews. 2006. Research summary: Parent involvement. Westerville, OH: National Middle School Association (NMSA). Available online at *http://www.nmsa.org/Research/ResearchSummaries/ParentInvolvement/tabid/274/Default.aspx*.

Additional Resources

Barber, J., N. Parizeau, and L. Bergman. 2002. *Spark your child's success in math and science: Practical advice for parents.* Berkeley, CA: Lawrence Hall of Science, University of California at Berkeley. Also available online at *http://www.lawrencehallofscience.org/gems/GEMSpark.html*.

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