



## Science in the Preschool Classroom



Article by Kati Gilson and Verneice Cherry

## Introduction of S.A.M.E. Network

In 1992, Reginald "Hats" Adams, President and CEO of the Science and Math Excellence (S.A.M.E.) Network at Rush - Presbyterian - St. Luke's Medical Center (<http://www.rush.edu/rumc/page-1160429716445.html>), had a vision that children on Chicago's West Side should have the same kind of education opportunities that children in affluent suburbs have. S.A.M.E. Network's mission is to ensure that superior science and math education is provided to children who reside on the West Side of Chicago. S.A.M.E.'s mission is met by using a combination of classroom and extracurricular programs to improve children's skills while exposing them to a wider variety of potential career paths. S.A.M.E. is a coalition of a leading academic health care institution, public and independent schools, businesses, not-for-profit organizations, and community groups. S.A.M.E. is fortunate to partner with Chicago Public Schools in providing this important foundation in a child's education. Dr. Cozette Buckney, Liaison to Board President and CEO of Chicago Public Schools, has provided invaluable support to this and other S.A.M.E. program initiatives.

The Preschool Program is one of many programs sponsored by the S.A.M.E. Network. This innovative program has 18 preschools; Howard Hughes Medical Institute (<http://www.hhmi.org/>) supports 12 preschools as part of a larger grant to fund S.A.M.E. programs. The goal of the Preschool Program is to provide a stimulating environment for guiding children in the development of science, math, and literacy skills by providing science labs and materials appropriate for young children. Children begin to understand fundamental science concepts and develop abilities of inquiry by using their natural curiosity to motivate exploration of their surroundings. The ultimate objective of the science program is to have children achieve science literacy.

## How to Incorporate Science into your Classroom

S.A.M.E.'s preschool program focuses on three process skills - observation, classification, and communication. The following science ideas can be taught to preschoolers and can be spiraled as needed.

A good early childhood science program develops the science process skills of observation, classification, and communication. Young children, because of their innate curiosity eagerly embrace all types of science activities. The easiest way to incorporate science into the early childhood classroom is to "find" the science in the activities you are already doing. A lesson about "me" can include making pasta skeletons with the children's pictures as the head. Color mixing, exploring which materials dissolve in water, comparing similarities and difference in objects, and cooking are all science

activities.

### **Set up a science center.**

This does not need to be expensive. Large and small magnifiers, prisms, balance scales, mirrors, magnets, color paddles, and a variety of objects to observe and measure are a great way to start. Models and animal puppets are always a hit. Throw in a few theme-related books, puzzles, and writing materials and you're set. Change the materials on a regular basis to keep things interesting.

### **Teach what you know.**

If you like animals or plants, start there. Meal worms make great class pets. They are easy to care for and you can observe their life cycle. Plants come in a variety of sizes, shapes, and textures. They can be observed and measured. Lima bean seeds are easy to plant and grow. Don't forget to include "Jack and the Beanstalk" with this activity. Even teachers without a green thumb can provide plant science activities for their students by bringing in flowers and leaves for children to observe and take apart.

### **Use your surroundings.**

Get pine needles from your Christmas tree vendor, dog fur from your local groomer, pick up pine cones, feathers, leaves, etc. whenever you find them. Ask your local pet shop for snakeskin, feathers, and other animal items. Once the word gets out that you collect these things, people will save them for you.

### **Be a good observer.**

If your students start to do something unusual with an item or use it in a non-standard way, step back and watch. He/she may be making a new discovery and just might teach you a thing or two.

### **Introduce new items and concepts to the group.**

The children need to understand what things are for, and how to use and take care of them. Let them play. Children must have time to freely explore new things before participating in a structured activity.

### **Answer their questions honestly.**

If you don't know an answer, find out. Then, tell the children where you found the answer. Even preschoolers understand looking up information in books, on computer programs, and on the Internet.

The best way to promote science literacy is to expose your students to a variety of books, from preschool level to adult. Just make sure the adult books have lots of pictures. You will need the information in the adult books to answer the children's questions.

A few simple additions to your classroom and curriculum will provide endless opportunities for creative thinking, problem solving, and exploration. Your students will be on their way to becoming "Super Scientists."

# Resources for Educators

## In Print

- *Science with Young Children Revised Edition* by Bess-Gene Holt  
Publisher: National Association for the Education of Young Children, Washington, D.C. 1993
- *Biology for Every Kid, Chemistry for Every Kid, Physics for Every Kid, Animals, Machines, Magnets, Microscopes and Magnifying Lenses, Molecules, Play and Find Out about Science, Play and Find Out Human Body, Play and Find Out Insects* by Janice VanCleave  
Publisher: John Wiley & Sons, Inc., New York
- *Discovery Science Explorations for the Early Years, Pre-Kindergarten* by David A. Winnett, Robert A. Williams, Elizabeth A. Sherwood, and Robert E. Rockwell  
Publisher: Addison-Wesley Publishing Company, CA 1996
- *Look Once, Look Again, Science Series*  
Topics include: Exploring Habitats and Exploring Plants and Animals  
Publisher: Creative Teaching Press, Cypress, CA 1997
- Scholastic titles include: *Insects and Spiders, Animal Homes, Polar Regions, Amazon Rainforest, Weather Tree, Energy & Force, Machines & Tools, Animal Life Cycles, Birds, Desert, Ocean*  
Publisher: Scholastic Publishing, Jefferson City, MO
- *Your Big Backyard* and *Wild Animal Baby* Magazines  
Publisher: National Wildlife Federation, Harlan, IA

## Online

- Jay Jay the Jet Plane  
<http://pbskids.org/jayjay/>
- ZOOM  
<http://pbskids.org/zoom/>
- Exploratorium Science Snacks  
<http://www.exploratorium.edu/snacks/index.html>
- National Wildlife Federation  
<http://www.nwf.org/kids>
- NSTA: Elementary Science Classroom: Science & Children  
<http://www.nsta.org/elementaryschool/>

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