Science and Math at Home for Ages Six to Ten

Did you know that many everyday activities could help your child learn science and math?

Most six to ten year olds are enthusiastic about science and math activities. They continue the interest and curiosity they had as preschoolers. At the same time, their knowledge of the world and their skills increase. Their language, reading, and math skills develop enormously during these years. They get better at using tools, such as pencils and scissors, and materials for exploring or building.

Parents can actively support their child's science and math experiences. Developing your child's enjoyment and confidence builds a foundation for school and career success. Here are some ways to encourage interest in science and math when your child is in the first three or four years of school:

Explore questions about the world of science and math together.

Children this age ask a lot of questions. What keeps a room warm on a cold day or cool on a hot day? How come it's sunny in one room of the apartment in the morning and in a different room in the afternoon? Where does the drinking water come from? What part of a light bulb glows? How do clothes help us in different kinds of weather? What happens to mosquitoes in the winter? Can the same drop of water rain on me twice?

Talking to someone lets children turn their ideas and thinking into language. It helps them choose, use, and practice the words of science and math. Conversation helps children organize their experiences. It's especially helpful for children who use more than one language to practice words and ideas, especially when they are learning something new.

Use the kitchen for science and math exploration. Cooking calls for measuring, timing, and seeing chemical changes.

When Carlos baked bread with his mother, she helped him read the recipe. He used measuring cups for the flour and measuring spoons for the water, sugar, and yeast. He let the dough rise for an hour. He and his mother talked about what they thought made the dough increase in size. They put some yeast in warm sugar water, watched it bubble, and noticed the smell. They thought the dough must be full of air bubbles. Once the bread was baked, it couldn't be punched down anymore. Heat from the oven made more changes.

Choose toys and books that help children learn.

Lots of science and math can be learned through play. Going to a toy store to choose a gift for a child can be overwhelming. It's helpful to know some good toys and games for fun and learning. Good toys

for science and math learning are magnets, dice, magnifying lenses, puzzles, and blocks. Some games are Mastermind, Mr. Super Mind, Othello, and Tangrams. Origami, puzzle books, rock and mineral books, and science and math activity books make good gifts.

Calculators are no longer expensive. With a calculator, children can explore number patterns and do complex math problems that would be too hard to do in their heads. They still need to learn the facts of arithmetic and to estimate, but calculators can make solving math problems fun.

Read and listen to your child read.

The habit of reading, listening, and discussing enriches all members of a family. There are wonderful science books written for children that adults can learn from and enjoy as well. They can be found in a library, in a bookmobile, or as inexpensive paperbacks. People can also learn a lot of science and math by looking at photographs and illustrations. Children enjoy magazines such as 3-2-1 Contact, Ranger Rick, Owl, Zillions, and WonderScience.

Encourage hobbies or collections.

Many children this age love to collect things, such as leaves, rocks, buttons, coins, stamps, and keys. When they organize collections, they use math and science skills such as observing, sorting, grouping, and describing. If they make a box or case for their collection, they must plan, measure, and think about the concepts of area and volume

Sign up for math or science programs for children this age or for children and adults together.

Many museums and clubs have math and science programs for elementary school children after school, on Saturdays, or during vacations. How do you find these programs? Ask at the school office, at the guidance office, or your child's teacher. Ask other parents. Call up museums and other community organizations. If they don't have a program, ask them if they know who does. The school or public library lists local organizations. Librarians can help you find programs. Find out if there is a Family Science or Family Math program in your community. If not, perhaps a group of parents could get together and help start one up.

Use playtime with friends as a chance for fun and learning.

When your children have friends over to play, use this everyday event as a time for learning. Plan a baking project; take a trip to the zoo; go on a library expedition. Take turns with other parents.

Adult supervision is important. Adult encouragement and enthusiasm add to children's interest. Adults can lend a hand and make sure explorations and experiments are done safely. Providing a snack adds to the fun.

Find a plant or an animal your child can care for.

Children this age can take care of a plant or a pet. Learning what a living thing needs to be healthy is a way to think about the health of all plants and animals, including ourselves! Learning to be responsible is an important life skill.

Monitor TV watching.

Turn off the TV and limit viewing. Too much TV viewing takes time away from other activities, like cooking, playing games, doing puzzles, and looking at books. Even though it may be a hard habit to break, students who engage constructively in something other than watching TV usually do better in science and math in school. When you do let them watch TV, choose carefully the shows they watch. Wild America, Square One, and 3-2-1 Contact, are examples of educational TV for children. Watch these programs, too! Talk about what you have seen.