

Helping Children Learn at Home: Math and Science Tips for Young Children

Did you know that the games you play with your toddlers and preschoolers can influence their interest in learning math and science as they grow older? Young children are capable of learning such concepts as big and small, high and low, fast and slow, and heavy and light. By helping your children learn these concepts, you are helping them begin to learn about math and science. According to educational experts from the National Science Foundation ("Helping Children Learn at Home," 1997), "young children are natural mathematicians and scientists" because of their curiosity and their desire to explore and experiment.

When parents encourage their children to ask questions and help children explore and discover the natural world, they are helping build an interest in math and science. Many experts say that children who have such experiences when they are very young develop an enjoyment for and a confidence in math and science that pays off as they get older.

Here are some ideas for what you can do to develop your preschooler's interest in math and science.

- ***Go for a walk with your child.*** Take time to stop along the way and watch things that children notice, such as flowers, animals, and bugs. Talk with your child about what you see, and ask about what he sees.
- ***Draw pictures together.*** Draw a picture of what you have seen, whether it was on your walk together, on your front steps, in the backyard, or from your window. Ask your child to draw a plant, an animal, or a favorite place, and then ask her to tell you about the drawing.
- ***Turn a drawing into a story.*** Write down what your child says about the picture he just drew. Ask him to make up a story about the picture, and save it with other artwork and stories he has developed.
- ***Listen to your child and ask questions about what she is seeing and doing.*** Children need to have time every day to tell another person about what they have seen or what they think. When you ask your child to tell you about a walk or a trip to the zoo, you are encouraging her to think and choose words.
- ***Choose toys that help your child learn.*** Young children learn about the world primarily by playing. As a result, they need toys that encourage them to imagine and explore, which are not necessarily those that are advertised on television. Toys do not have to be expensive, but they should be simple, safe, and long-lasting. Some ideas for toys include:
 - ***Balls.*** They can be bounced, rolled, thrown in the air, the grass, or the sidewalk. Which bounces the highest? Lowest? Which ones sink in water? Which ones float?
 - ***Blocks.*** Building blocks can be a great math and science toy because they help children learn about engineering and geometry. You can either buy a set of wooden, plastic, or cardboard blocks, or you can make your own out of egg cartons, cereal boxes, or wood scraps. For young children, make sure the blocks are big enough to handle easily and keep out of mouths. Have enough blocks in different shapes and sizes to build unusual structures. Have children paint the blocks in bright colors.

- **Puzzles.** Puzzles help children learn to solve problems as well as learning about shapes, sizes, and colors. For toddlers, make sure the puzzle has some large pieces. You can make your own puzzle by pasting a magazine picture onto a piece of cardboard, then cutting it into large pieces. Or make a puzzle from one of your child's drawings. As children get older, they can do more difficult puzzles.
- **Plant a garden with your child.** Planting a garden, any size, is a great family activity. A garden can be a patch of dirt in the yard or a container on a window sill, and it has a season of math and science lessons in it. Measure the space or container, determine where the plants will get sunlight, find out how much seeds will cost, count the seeds, measure the rows, watch the plants grow and chart their growth, pick vegetables, look for insects, and learn what plants need to be healthy.
- **Read to your child.** Read books aloud every day. Look at picture books and talk about what you see. Alphabet and counting books are always popular, and you'll experience a sense of pride as you watch your children learn. Plan a regular time to go to the school library, public library or bookmobile. Enlist brothers, sisters, aunts, uncles, and grandparents to help read stories. Have your child read to you if he wants to or tell you a story based on the pictures in the book. Remember that it does not matter if you read in English, Spanish, or Chinese as long as you help your child develop a reading habit.
- **Monitor TV watching.** Turn off the TV and limit viewing. Too much TV viewing takes time away from other activities. Many experts have shown that children who do things other than watch TV usually do better in math and science in school. When you do let your child watch TV, look for high-quality educational programs, and watch and discuss programs with your child to help build a habit of critical reflection.

Source:

Helping children learn at home. (1997, March 27). Pointers for Parents (National Science and Technology Week Publication SP/96-8). Arlington, VA: National Science Foundation.

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