

STEM MOMENTS: EVERYDAY FUN WITH ENGINEERING AND TECHNOLOGY



Engineering is the process of using math, science, and technology to create, innovate or solve a problem. Technology describes the tools that children use to observe, measure, and experiment. Think of a toddler whose ball has rolled under a chair. She uses a toy rake to reach it and, in 30 seconds, shows us she's an engineer who uses the rake as a "technology" tool to solve her problem. With support from parents and caregivers, children—starting at birth—can learn to think like engineers and problem-solve throughout their daily routines and activities.

From birth to five, children develop an understanding of engineering and technology as they:

- Experiment with solving the problems they encounter in their world;
- Use and combine objects in new ways—like leaning a piece of cardboard against a pile of books to make a ramp;
- Test how things work, like turning a light switch on and off;
- Make predictions, like predicting how high a block tower can be built before it falls; and
- Use information about what works and doesn't work to improve their creations.

Young children learn about engineering and technology through their own exploration and by talking, watching, and playing with you. When you follow your child's lead and describe his actions and discoveries, you help him learn these important STEM skills.

LEARNING STEM THROUGH PLAY: PARENT-CHILD PLAY ACTIVITIES THAT SUPPORT ENGINEERING SKILLS

- 0-12 MONTHS** Give your baby lots of opportunities to explore materials and combine objects during play. Let her drop spoons in a metal bowl or show her how to tap a spoon on the bowl. Point out how the "shiny, metal spoon" sounds loud!
- 12- 24 MONTHS** Encourage your young toddler to build using boxes of different sizes—empty cereal boxes, shoe-boxes, and more. Use words like big, small, tall, wide or square to describe the boxes as he plays. Point out what makes the tower stronger, like starting with a flat, solid base. And remember that knocking it down and starting over is half the fun!
- 24-36 MONTHS** Give your child some technology to explore: Lean a piece of cardboard against the side of a chair. Let your toddler roll balls or cars down the ramp and talk about how far and fast each one goes. Test ramps that you find in your community, like rolling pinecones or balls down the slide at the park. What makes objects go faster or slower down the ramp?
- 3-5 YEARS** Give your preschooler challenges to try. How many plastic cups can she stack while you set the table? Can she find a different way to dig a hole at the park, without using a shovel? Talk about her experiments by asking questions like, "What do you think will happen if..." Or, "What else could we use to..."



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