

Engineering is for Elementary Students: Why Kids Should Study Engineering Before They Can Spell It

Christine Cunningham
Vice President, Museum of Science, Boston

Abstract

In a landmark shift, national science standards—along with many state science standards—are starting to include engineering concepts and skills as part of K-12 STEM instruction. What does engineering look like when children are doing it? And why should very young children study a subject traditionally reserved for college students? In this talk I'll use a striking collection of candid short videos, shot in classrooms across the country, to show how engaging with engineering challenges helps children develop habits of mind that can support their academic success in many subjects. I'll also share some pedagogical strategies educators can use to support the development of robust engineering experiences for children. And I'll report on research that shows engineering is highly effective in engaging students from diverse populations in science and engineering learning.

Biography

Dr. Christine Cunningham is an educational researcher who works to make engineering and science more relevant, accessible, and understandable, especially for underserved and underrepresented populations. A vice president at the Museum of Science, Boston since 2003, she founded and directs Engineering is Elementary™, a groundbreaking project that integrates engineering concepts into elementary curriculum and teacher professional development. To date, EiE has served 5.8 million children nationwide and 70,000 educators. Cunningham has previously served as director of engineering education research at the Tufts University Center for Engineering Educational Outreach, where her work focused on integrating engineering with science, technology, and math in professional development for K-12 teachers. She also directed the Women's Experiences in College Engineering (WECE) project, the first national, longitudinal, large-scale study of the factors that support young women pursuing engineering degrees. Cunningham is a Fellow of the American Society for Engineering Education. She holds B.A. and M.A. degrees in biology from Yale and a Ph.D. in Science Education from Cornell University.

