STEM ED

A program created by the

US Army Corps of Engineers®

and

dodea
DEPARTMENT OF DEFENSE EDUCATION ACTIVITY

STEM ED

SCIENCE
TECHNOLOGY
ENGINEERING
MATHEMATICS

BUILDING STRONG® STEM STUDENTS

STEM

Why STEM?

Concerns about the quality of Science, Technology, Engineering, and Mathematics (STEM) education and U.S. dominance in science and technology have been mounting for decades, and has risen to a new level with the publication of various reports in the last few years. In the 1980s, the U.S. led the world in the percentage of college graduates with STEM degrees. Today, we rank among the lowest in the world, and the level of interest of American students in technical disciplines continues to remain comparatively low.

Some of the greatest challenges facing the world today include protecting our environment, responding to climate change, developing new source of energy, repairing our crumbling infrastructure, providing safe drinking water in the developing world, and enhancing human health through biotechnology. Yet, the U.S. faces a potentially serious shortage in developing the STEM talent needed to tackle these challenges. The U.S. Army Corps of Engineers and Department of Defense Education Activity partnership serves to make a difference by educating and exciting students about their own potential for personal engagement in these issues.

How can we meet the STEM Challenge?

The U.S. Army Corps of Engineers (USACE) aspires to increase awareness of and interest in engineering among a large, diverse population of middle- and high-school students. At nearly 35,000 strong, USACE team is a diverse group of men and women with a vast array of knowledge and skills. They work in a range of professions as engineers, biologists, environmental scientists, geologists, construction managers and engineering technicians. These civilian and military professionals recognize the critical role that Science, Technology, Engineering and Mathematics education plays in ensuring the security of our nation and enabling the U.S. to remain the economic and technological leader of the global marketplace. They are also committed to teaming with others to strengthen STEM–related programs that inspire current and future generations of young people to pursue career fields needed to tackle the challenges of today and the future.

The U.S. faces a potentially serious shortage in developing the STEM talent needed to tackle challenges facing the world today.

Students participate in the engineering design process using the application of mathematics, science, and technology to create products and systems that meet human needs.

Parterning to make a difference.

USACE and the Department of Defense Dependents Activity (DoDEA) have established a partnership for the purpose of leveraging the strengths of both organizations to advance STEM education in communities where DoDEA and USACE activities are co-located. Creating local partnerships sets forth a more strategic approach for connecting DoDEA students and teachers with real-world STEM applications related to specific civil works projects or other USACE functions within the community. Each site will have the freedom to set priorities, choose partners, and select activities that represent the best fit between the USACE and DoDEA. This facilitates a more strategic, personalized approach – not a scatter plot of STEM outreach activities.

1. **Connect and leverage USACE STEM professionals to establish a focused and sustainable long-term STEM partnership in communities where DoDEA and USACE activities are co-located.**
2. **Increase student awareness and interest in STEM curricular and co-curricular activities and careers.**
3. **Increase awareness of the need for more STEM focused professionals to address USACE missions and the Nation's needs in the future.**

OBJECTIVES

The purpose of the contest is to provide middle school students with a realistic, engaging introduction to engineering; and to increase awareness of and interest in engineering among a diverse population of middle-and high-school students. The contest will provide students with an opportunity to:

- Explore STEM challenges related to the USACE mission that align with DoDEA's mathematics, science, and technology curriculum.
- See firsthand the possibilities of turning ideas into realistic solutions.
- Participate in the engineering design process using the application of mathematics, science, and technology to create products and systems that meet human needs.