

# Gains in the Education of Mathematics and Science (GEMS)

The Gains in the Education of Mathematics and Science (GEMS) program at Fort Detrick brings local students to the cutting-edge world of science for the U.S. Army Medical Research and Development Command (USAMRDC). The program is designed for current 4th through 12th grade students of all academic abilities in the 2022-2023 school calendar. GEMS promises a hands-on experience that will excite.

**To Learn More:** <https://cvent.me/2wv4Zr>

**To Apply:** <https://cvent.me/x8m3AX>

## Engineering and Computer Science 1 (Battlebots)

Battlebots is for students who are currently in 5th-7th grade. Students will build their very own Lego robot. Throughout the week they will test their designs through activities such as a Ruck March, Parachute test and more. At the end of the week students will go head to head to see who has the strongest bot.

## Engineering and Computer Science 3 (Robotics)

Robotics is for students who are currently in 9th-12th grade. Students will build, train, and code their robot. Throughout the week students will go through a series of tests that help them evaluate their robot and make adjustments to create the best robot. At the end of the week students will complete a simulated bomb removal.

## Crime Scene Investigation (CSI)

Crime Scene Investigation is for students who are currently in 6th-8th grade. Students will work with a partner to determine who killed the professor. Students will have to complete fingerprinting, hair/fiber analysis, DNA isolation and more to determine the killer. At the end of the week students will review all the evidence and present who they believe the killer is and explain what they think happened.

## Earth and Environmental Science

Earth and Environmental Science is for students in the 4th-5th grade. Students will learn more about their environment by performing soil and water analysis. They will learn about the ocean through a squid dissection and solar power by building a solar bug.



## Intermediate Science

Intermediate Science is for students in 7th-9th grade. Students will learn about the environment through a frog dissection, biomedical by creating a circulatory system and designing a candy "pill", chemistry by launching Alka-Seltzer Rockets and more.

## Engineering and Computer Science 2 (Learn Play Code)

Learn Play Code is for students currently in 6th-8th grade. Students will learn about coding by creating animated character, designing games and fixing hacked code. Students will also learn about circuits by creating a LED card, test their design skills by building a toothpick and marshmallow structure and more.



## Advanced Science

Advanced Science is for students in the 9th-12th grade. Students will determine if they have the PTC gene by performing a DNA extraction and gel electrophoresis analysis. Students will perform a fetal pig dissection and learn how to suture.