



## AMRDEC GEMS PROGRAM

The Application Process Is Now Open For AMRDEC GEMS

Application Deadline: **March 30, 2012**

Application Link: <https://www.usaeop.com/application/student1.aspx>

Aviation and Missile Research Development and Engineering Center, Redstone Arsenal (Huntsville), Alabama

### GEMS 1

There are 3 main curriculum areas for the GEMS 1 students: building and operating a robot; construction of a 13-step Rube Goldberg apparatus; and the design, construction, and testing of bridges. Numerous activities, icebreakers, and games are incorporated in order to build team cooperation, improve observation skills, and develop critical thinking and problem-solving skills. In every activity, the science behind each activity is stressed. Activities will include completing an electric circuit with the Rube Goldberg apparatus, determining which bridge design could support the most weight, and competing in a game of robot soccer. Other activities will include daily tours of various projects being developed by AMRDEC on Redstone Arsenal. These will include tours of the Prototype Integration Facility, Software and Engineering Directorate, and other laboratories within the Aviation and Missile Research, Development, and Engineering Center. In addition, the students will visit the U. S. Space & Rocket Center on Friday. Each project will culminate on Friday of the assigned week.

### GEMS 2

There are 3 main curriculum areas for the GEMS 2 students: building and operating a hovercraft; construction of an inexpensive PC and learning simple programming; and the design, construction, and testing of a trebuchet. Numerous activities, icebreakers, and games are incorporated in order to build team cooperation, improve observation skills, and develop critical thinking and problem-solving skills. In every activity, the science behind each activity will be stressed. Other activities might include tours of various projects being developed by AMRDEC on Redstone Arsenal. These include tours of the Composite Materials Lab and the Weapons Sciences Labs. In addition, guest scientists and engineers will speak to the students about various projects on which they were working. Each project will culminate on Friday of the assigned week. Activities may include testing the predicted results of a computer program written the previous day, completion of construction and operation of a person-sized

hovercraft, and staging a mock battle and siege using constructed trebuchets.

### GEMS 3

There is no application process for GEMS 3. Only students who have completed GEMS 1 and 2 will be invited to participate in GEMS 3. The number of candidate invitations anticipated for the 2012 GEMS 3 session is 20. If selected, students will complete advanced activities beyond those in GEMS 1 and GEMS 2, in addition to working with scientists, engineers, interns and co-ops to solve real world problems. Students may also participate in tours and hear various guest speakers and technical briefings.

### **2012 GEMS:**

GEMS 1 4-8 June  
GEMS 1 11-15 June  
GEMS 2 18-22 June  
GEMS 2 25 June-29 June  
GEMS 2 9-13 July  
GEMS 3 16-20 July

### Prerequisite

AMRDEC requires an essay for BOTH GEMS 1 and GEMS 2. This needs to be included with all GEMS applications for Redstone Arsenal. Applications without an essay will not be accepted for GEMS at Redstone Arsenal. (The length of the essay can be up to 500 words.)

### Points of Contact

If you have questions or concerns, please contact: Cherlyn Gittens on behalf of Ms. Gayla McMichael at [cgittens@tmtgroupinc.com](mailto:cgittens@tmtgroupinc.com), 256-536-9717, or the AMRDEC STEM Education & Outreach office by email at [AMRDEC-Outreach@amrdec.army.mil](mailto:AMRDEC-Outreach@amrdec.army.mil) .

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