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The Winchester STARBASE Academy ([http://starbasewinchester.webs \[1\]. com/](http://starbasewinchester.webs.com/)) provides inspiring and exciting STEM education activities to 4th- and 5th-grade public and private schools students in northwestern Virginia. Winchester STARBASE is part of the Department of Defense STARBASE program, and is managed by the Virginia Department of Military Affairs.

Students and their teacher attend the program for 5 days providing 25 hours of instruction. The STARBASE curriculum emphasizes Engineering, Chemistry, Physics, Math, and Technology. Programs have an inquiry-based curriculum containing “hands-on, mind-on” experiential activities that highlight the real-world applications of each area. Examples include: i

- Using PTC’s CAD software sketching and modeling to create a physical product on a Stratasys 3-D printer.
- Egg drop tests using the Engineering Design Process i Investigations with molecule building kits, chemical & physical changes, and atmospheric properties
- Newton’s laws of motion using inertia toys, straw rockets, Newton’s cradles, and solid fuel rockets
- Navigational concepts using Tyvek maps and handheld GPS units
- Programming robots to traverse an obstacle course / perform required maneuvers

Math is embedded throughout all activities as well as metric measurement lessons, circuit board geometry, and data analysis of an Alka-Seltzer rocket. Students learn about different STEM careers during presentations from military, government, and private sector volunteers, including Air Force pilots, medical professionals, and civil and structural engineers. AIAA members have participated, presenting information on the Space Shuttle, Space Station, and Mars programs. Over 2,700 students in the Winchester STARBASE region have attended the five-day program. The program is being expanded for the upcoming school year, doubling participation from 750 students per year to an anticipated 1,500.

Full credit for photo and text goes to the Aerospace America Bulletin.

www.aerospaceamerica.org [2].

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Links:

[1] <http://starbasewinchester.webs>

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