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The exploration of space in the classroom

August 13, 9:21 PM · [Phoenix Science News Examiner](#) · Veronica Ann Zabala-Aliberto

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In a high school classroom in Buckeye, Arizona a class is learning about space exploration. When traditional classrooms barely get to the space exploration portion of their textbooks by the end of the school year, Lt. Col. Tom McClain and his cadets spend a whole academic year learning how space affects our daily lives, the importance of understanding orbits, evaluating space-systems engineering, reviewing rockets and launch vehicles and so much more.

Buckeye Union High School's Air Force JROTC focuses not only on the structure of our Nation's government and the importance of citizenship and leadership, but enhances a better understanding of the world around us. High School cadets are introduced to space exploration (past, present and future) for both human and robotic space exploration. Understanding remote sensing satellites and the schematic of a spacecraft are crucial in order to better grasp the "Why" and "How" of orbital mechanics. With crisp new textbooks and workbooks, the student cadets work through a curriculum that is mainly overlooked in a traditional classroom.

With hands-on activities, the students learn kinesthetically how to build rockets and incorporate their math, science and technological skills they have acquired in the classroom. The Buckeye Union High School Air Force JROTC Rocket Club participates in rocket competitions to test the structural integrity and performance of these student-built rockets as well as have a little fun while learning. Instead of reading about rockets these future engineers of tomorrow are putting their skills to the test. Their educator is more than qualified as well. Lt. Col. Tom McClain (retired) has been with the high school since fall 2007 as the AFJROTC Senior Aerospace Science Instructor. McClain retired from the USAF in 2001 as a Lieutenant Colonel and as the Chief of Air National Guard Inspections. During his military career he was a fighter pilot and forward air controller. He served at Luke AFB, AZ, Nellis AFB, NV, Kunsan and Osan AB, Republic of Korea, George AFB and March AFB, CA, Maxwell AFB, AL, and the Pentagon, Wash DC. He also had been employed as a Research Analyst and Engineer for General Dynamics, Analytical Services, SAIC, and Computer Sciences Corporation.

In addition to the class curriculum, the students get to participate in field trips to various locations throughout the Phoenix region that have a strong emphasis in science. On one fieldtrip they ventured to Flagstaff to visit the Lowell Observatory to learn about astronomy and the next day they explored the Grand Canyon to study geology. Later on in the year they visited Arizona State University's Lunar Reconnaissance Orbiter Camera Science Operations Center to see scientists,

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engineers and other students working on the lunar mission supplying us all those wonderful mages of the lunar surface. In that same afternoon they visited the Mars Spaceflight Center to learn about the highly successful Mars Exploration Rovers that have been roving the Red Planet.

So, whether it is terrestrial or planetary science, rocketry, or space policy, you can bet if your child is in the Air Force JROTC program in high school they will have gained more knowledge about math, science and technology then most students that will reinforce not only their academic careers but their professional ones as well.

For more info: [Air Force JR ROTC](#), [Buckeye Union High School](#)

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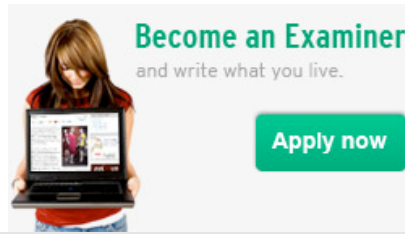
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