



2013 **ANNUAL REPORT**



SHAPING OUR
FUTURE DoD WORKFORCE
THROUGH **SCIENCE, TECHNOLOGY,
ENGINEERING AND MATHEMATICS**



TABLE of CONTENTS

INTRODUCTION

DoD STARBASE Graduates Making Headlines in STEM	2
A Letter from DoD STARBASE Graduate, Savannah Jensen	5
A Letter from DoD STARBASE Graduate, Carlo Aceves	6
A Letter from DoD STARBASE Graduate, Tanner Kellogg.....	7
An Issue of National Importance.....	10
A Letter from Colonel Cassie Barlow, Commander 88th Air Base Wing	12
A Letter from Major General Glenn Curtis, The Adjutant General of Louisiana.....	14
Vision and Mission Statements of DoD STARBASE	15
DoD STARBASE Map.....	16
DoD STARBASE Inspires Youth Through Collaborations and Rigorous STEM Initiatives	18
A Letter from Melissa Gavarrino, Secondary Supervisor of Science, East Hartford Public Schools	27
A Letter from Karen Cooksey, Principal, Pat Henry Elementary, Lawton, OK	29
A Letter from Larry Flynn, President of Gulfstream Aerospace Corporation	31
A Letter from Shirin Saadat, Technical Director, Construction & Home Improvement Markets, 3M	32
2013 DoD STARBASE Accolades	34

2013 ASSESSMENT

Executive Summary	36
Highlights.....	36
The Participants.....	39
The Military	39
The School District	40
The Community.....	40
The Program Elements of DoD STARBASE	40
Grade Level.....	40
Class Size.....	41
Racial Composition.....	41
Gender Composition	43
DoD STARBASE Staff	43
Employment Affiliation	43
Staffing Model.....	44
Staff Development.....	44
Staff Changes and Departures	45
Volunteers.....	46
DoD STARBASE Curriculum.....	46
Challenges to Program Growth	47
The DoD STARBASE 2.0 Program Elements	49

Program Requirements	49
Participants.....	50
Curriculum.....	51
Staff	52
Funding	52
Program Oversight	53
Compliance	53
Compliance Procedures	53
Performance Level Descriptions.....	54
Compliance Adherence.....	54
Fiscal Analysis	55
Student Assessment.....	58
Overview.....	58
Instrument Design and Review	58
Student Demographics	59
Student Knowledge and Skills Assessment	62
Pre/Post Knowledge Assessment Mean Scores by Curriculum Areas	64
Pre-Post Knowledge Assessment Scores	66
Yearly Comparisons for Post-Program Knowledge Assessment	70
Student Attitudinal Assessment	74
Military-Related Attitudes	81
Drivers of Opinion.....	93
Teacher Assessment.....	95
Introduction.....	95
Overall Trends.....	96
Historical Trends.....	97
DoD STARBASE Teacher Survey Analysis.....	98
Teacher Assessment Summary	111

CONSIDERATIONS

APPENDICES

DIRECTORY

DoD STARBASE Graduates Making Headlines *in STEM*



The DoD STARBASE 2.0 Rocketry Team from John Adams Middle School takes to the Launchpad to meet with Team America Rocketry Challenge contest manager Anne Ward. [Pictured L-R are Brycen Ellis, Trinity Waybright, Gretchen Evans, Dakota Meadows and Anne Ward.]

DoD STARBASE 2.0 STUDENTS FROM CHARLESTON, WV COMPETE IN NATIONAL ROCKETRY COMPETITION

Students from the Charleston, WV DoD STARBASE 2.0 program became the first DoD STARBASE-sponsored team, and one of only a handful of middle school teams this year, to earn a spot in the national finals of the Team America Rocketry Challenge (TARC). Their accomplishment underscores the value of the DoD STARBASE 2.0 initiative in promoting STEM education at the middle school level. It also reinforces the idea that greater student success can be achieved through hands-on experiential learning and collaboration with positive adult role models.

Barbara Koscak (along with Brig. Gen David Arendts) uses her A. Scott Crossfield Teacher of the Year money to fund the first summer program called "Project STARS" at Selfridge Air National Guard Base, Michigan.

DoD STARBASE HISTORY



Science teacher Greg Mallory served as the 2.0 Club Coordinator at John Adams Middle School. Team members Brycen Ellis, Gretchen Evans, Dakota Meadows and Trinity Waybright and their volunteer mentors Scott Hamilton, Angela Parsons-Douglas and Frank Waybright designed and constructed a TARC rocket. The challenge was to build a rocket that could transport a raw egg on a 48-50 second round-trip flight to an altitude of 750 feet. Restrictions on the rocket's mass and parachute diameter added an additional layer of complexity to their task.

Teaching met technology as team members learned rocket flight fundamentals through a discovery-based approach and then applied simulation techniques along with 3-D computer-aided design software tools to enhance the design process. Virtual rockets were designed using simulation software where competitors could select from a vast catalog of commercially available rocket components and then conduct simulated test launches under various conditions to predict the altitude and total flight time. After designs were finalized, students took an even greater leap into the 21st century by designing rocket fins and an engine mount assembly using PTC Creo Elements software and printed their parts with a 3-D printer. Each team member analyzed the digital altimeter which is contained in the rocket nosecone and collects time and altitude data on each test flight.

Over 700 teams from across the United States participated in local "Fly-Offs" to determine the finalists for the TARC competition. The DoD STARBASE 2.0 team from John Adams conducted two launches under the watchful eye of a National Association of Rocketry observer who scored the launch based upon the official TARC contest guidelines. The results placed them in the top 100 and secured a spot in the TARC National Finals at Great Meadow, The Plains, VA.

The team learned a number of valuable lessons through their DoD STARBASE 2.0 experience but none as important as working hard to overcome adversity – a skill which became particularly valuable less than one week before the TARC National Finals. A manufacturing defect in two rocket engines resulted in catastrophic failure of both engines and



Continued on next page

Barbara Koscak receives the W.K. Kellogg Foundation Grant for the first STARBASE program at Selfridge Air National Guard Base, Michigan.

The U.S Congress appropriates funds for six additional DoD STARBASE Programs in Sacramento, CA; Topeka/Wichita, KS; St. Paul, MN; Charlotte, NC; Tulsa, OK; and Portland/Klamath Falls, OR.

1991



1993



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irreparable damage to the team's competition rockets during their final two test launches. The team met every evening after school and used every available ounce of daylight to rebuild and test new rockets for the competition. They applied the finishing touches to their new rockets in the lobby of their hotel just hours before the finals.

So what does the future hold for the DoD STARBASE 2.0 team from John Adams Middle School? As soon as they returned from their TARC adventure, they were already beginning to discuss plans for next year's rocket. Some team members were sketching designs while others discussed parachute rigging and brainstormed ideas on how the 3-D printer might be used to construct even more rocket components. The future team is already growing. Throughout the process, 6th grade students who were too young to compete in the TARC were learning, designing, and building their own rockets right alongside the competition team. They have already set TARC 2014 in their sights and the DoD STARBASE 2.0 program will help them get there.



DoD STARBASE Program Manager Ernie Gonzales, along with West Virginia DoD STARBASE Director Chris Treadway and STARBASE Minnesota Director Kim Van Wie, congratulate members of the DoD STARBASE 2.0 Rocketry Team.

Core Components (13) are developed for the DoD STARBASE curriculum: Teamwork, Bernoulli's Principle, Four Forces of Flight, Space Exploration, Avoiding Substance Abuse, Properties of Air & States of Matter, Aircraft Control Surfaces, Newton's Laws of Motion, Development, Innovation and Use of Technology, Flight Simulation, Model Rocketry and Goal Setting.

DoD STARBASE serves over 6,700 students at 26 programs in 18 states.

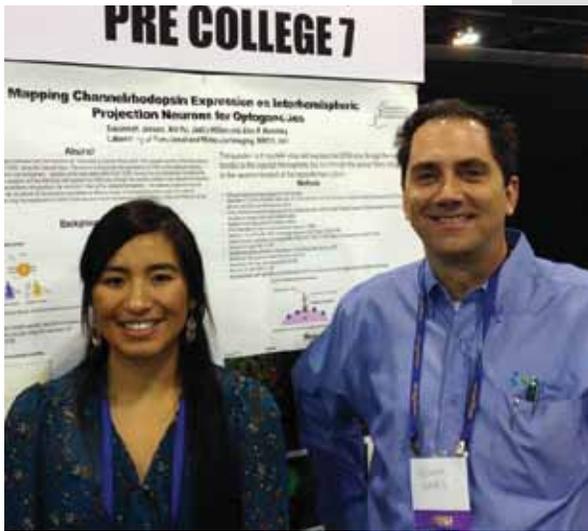
1996



1999



A Letter from DoD STARBASE Graduate, *Savannah Jensen*



Savannah Jensen with Adam Haas PTC Application Engineer Group Leader and Academic Programs during presentations at AISES during the fall of 2013.

My name is Savannah Jensen. I am a member of the Oglala Lakota Sioux tribe, and I live on the Pine Ridge Reservation in South Dakota. I am currently a 17-year-old senior and attend Red Cloud Indian High School. I attended DoD STARBASE as a fourth grader at Red Cloud Elementary. My desire to attend DoD STARBASE began as early as second grade when my older cousins came back to tell stories of their rockets and seeing a room full of stars. I made it a goal to attend DoD STARBASE in Kyle, South Dakota.

When I was a little girl I had always been fascinated with the stars especially because my Lakota people once traveled by the stars. Traditional star knowledge was my first aspect on science, and my love for science was sealed by the opportunities given to me by DoD STARBASE. It introduced me to the magic and possibilities of science. I remember feeling like I was the smartest child because I was able to build my own rocket. I also remember two very smart energetic teachers who taught the technique and application of rockets. Such as, what is thrust or lift or how can one increase the thrust or lift when it's time to build the rocket? This challenge of problem solving inspired me to make the best rocket. It was the most significant experience to be able to apply what I learned to an experiment.

Applying research to experiments is now a passion of mine. Carrying on what DoD STARBASE has introduced to me has taken me farther than I have ever imagined. In 2013, I designed and performed my own research experiment and attended the National American Indian Science and Engineering Fair in Albuquerque New Mexico. Amazed, I placed first in Environmental Science, won the special award Best Traditional Project, and qualified for the Intel International Science Fair in Phoenix, Arizona.

In the summer of 2013, I applied to the National Institutes of Health and earned a spot in the summer student internship in Bethesda, Maryland. I researched the compensating mechanism for nerve damage. I presented my research at the American Indian Science and Engineering National Conference and placed first. It was absolutely incredible.

Today, I believe DoD STARBASE was the catalyst for my love of science; it inspires and motivates youth. The opportunities and experience DoD STARBASE gives at such an early age is extremely valuable especially on the reservation. I dream of becoming a biomedical researcher or physician. I want to help my tribe and contribute in a positive way like the program DoD STARBASE.

Pilamayaye (Thank you),
Savannah Jensen



A Letter from DoD STARBASE Graduate, *Carlo Aceves*



DoD STARBASE Houston Director, Gail Whittlemore-Smith with Carlos Aceves at the 2013 MAES Symposium.

Dear STARBASE Houston,

I want to thank you for introducing me to STEM education and for an experience of a lifetime! Due to my participation in the program, I gained a profound knowledge of STEM, and I am still utilizing it today in my studies.

Being a leader is something I was raised to be, and because of programs such as DoD STARBASE, I was able to prove it. During my participation in DoD STARBASE in 2005-2006 while attending Dunbar Middle School in Dickinson, Texas, we designed our own space stations, gained piloting experience using a flight simulator, and constructed our own rockets and blasted them off into the sky. These are most memorable to me because it was the first time I applied some of the knowledge from class

into an actual project. I remember shooting off my rocket and was excited to see something that I had built actually function. DoD STARBASE made us use our critical thinking skills to find solutions—little did I know that they were preparing me for the future. As a young child, I did not understand the importance of STEM education, but now as a young adult, I realize how much it impacts the future of this nation.

I am a first-generation college student currently attending the University of Texas at San Antonio (UTSA) as a sophomore pursuing a degree in electrical engineering with an expected graduation date of May 2016. I'm also the vice president of The Society of Mexican-American Engineers and Scientists (MAES), event coordinator for UTSA's College of Engineering Monster Mash Pumpkin Smash, vice president of Outreach for our Global Brigades chapter at UTSA, and a mentor for FIRST Robotics. DoD STARBASE guided me to my path in pursuing an engineering degree by giving me the confidence and knowledge of STEM I needed to move forward. The classes and instructors challenged and pushed me to the best of my abilities. DoD STARBASE provided me with a foundation of knowledge that I continued to build upon after my participation.

DoD STARBASE taught me that I could make any dream become a reality if I pursue it. I would not be where I am today without DoD STARBASE and the support of my family. Once again, thank you STARBASE Houston for the opportunity and I hope you keep inspiring children to become leaders.

Best Regards,
Carlos Aceves

DoD STARBASE and PTC begin collaboration efforts.

2002



A Letter from DoD STARBASE Graduate, *Tanner Kellogg*

My name is Tanner Kellogg and I believe that attending DoD STARBASE when I was younger helped shape my life as well as the course of my education and career. I attended STARBASE Kansas at McConnell AFB in Wichita, Kansas. It was a one-week day camp during the summer of 2001, and I was nine years old. I had just finished 3rd grade at Woodland Health and Wellness Magnet Elementary School.

In DoD STARBASE, I remember that we learned about aircraft, the fundamentals of flight, and that we toured a hangar where we were allowed to board a B-1 bomber. I even got to sit in the cockpit, and they took photos of me. The thing I remember the most was building and launching rockets. We built the rockets from scratch not prepared kits and were able to design them any way we wanted. We put our names on them so that we could find them again after we launched them. Making them



was fun, but the real excitement came when we launched them. Some went pretty straight, others spiraled upward, and sometimes a rocket engine had to be replaced because it would not fire. All the kids, parents, and instructors would point to where the rocket went, and we would have to squint to see some that seemed to just disappear into the sky. I really enjoyed that very much and thought it was so cool that I begged my parents to buy us a rocket launcher after DoD STARBASE was over so that we could keep launching rockets. They did, and each of us had our own rockets that we launched over and over again.

That summer we moved across town and I attended 4th grade at McLean Science and Technology Magnet Elementary School where I continued to develop my interest in flight, in particular, space. We would frequently go to the Kansas Cosmosphere where I met several different astronauts and attended a Mars Camp where we simulated being astronauts on Mars. I got a poster of all the NASA rockets, which my parents framed and hung in my bedroom. I would study the rocket names and sizes and began to dream about becoming an astronaut. For 5th grade, we moved to Maryland because my mother got a job with NAVAIR. When I was 13, our parents

Continued on next page

Engineering is added to the curriculum. The first summer engineering program with PTC is piloted at 11 locations.

DoD STARBASE grows to 50 locations in 31 states.

2003



2005



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A Letter from DoD STARBASE Graduate, *Tanner Kellogg – Continued*

took my brother and me down to Florida to see the launch of a space shuttle, and we walked around the Rocket Garden where I saw many of the rockets that had been on my poster. I sat in a simulated Apollo capsule and told everyone then that I was going to be an astronaut. To this day, I still have every intention to be up in space and maybe even become the first person to step foot on Mars.



As a freshman in high school, I joined the Air Force Junior ROTC (AFJROTC) program. I remained with the AFJROTC program all four years and advanced to the top rank of Cadet Colonel where I had supervisory responsibility over 100+ cadets. The leadership training received from my Boy Scout Troop, leadership conferences, and other leadership-building programs enabled me to handle this responsibility very well, and I knew that I would definitely pursue a career as an officer in the military. I wanted to be a pilot and then move on to become an astronaut, but my visual acuity was not at the necessary level. I decided to major in aerospace engineering anyway because it is what I have loved since my youth and my days in DoD STARBASE. I am now in my fourth year at West Virginia University with one more year to go before graduation because rigorous engineering programs combined with college level ROTC often require five years for completion of a bachelor's of science degree in engineering.

Between being an Eagle Scout, my years with the AFJROTC program, and maintaining good grades, I have been fortunate to have had all my college expenses paid for by the Air Force and two other scholarships.

I have just recently been accepted for an internship at the Patuxent River Naval Air Station as an engineering trainee intern. I begin this job next week and will be working during school holidays, summer breaks, and after graduation until I go active duty with the Air Force and am assigned my first duty station. I am thrilled to be able to work in my field during these breaks in my education and to be exposed to another branch of the military and their Naval Aviation program.

I was fortunate to have parents who encouraged my interest in science and engineering and who provided some wonderful opportunities for me in my youth, but I may not have followed this path if I had not first been excited and inspired by it at a DoD STARBASE program. I appreciate how it developed my curiosity, inspired me to follow through with my education, and confirmed in me the commitment to serve my country with a career in the military. I would like to thank Colonel Ed Flora and the DoD STARBASE instructors, as well as the military for sponsoring and supporting a program like this, which I believe changes young people's lives. It certainly changed mine.

President Bush presents DoD STARBASE La Luz volunteer, Mike Martin, the President's Volunteer Service Award.

2006



Aligned With DoD STRATEGIC GOALS & OBJECTIVES

DoD STEM EDUCATION AND OUTREACH STRATEGIC GOAL – 1

Attract, develop, and retain a highly competent DoD STEM workforce, based on DoD requirements.

YES

Objective 1.1: Develop and foster an engaged and diverse STEM talent pool.

YES

Objective 1.2: Attract and recruit a proficient, agile and effective STEM workforce.

Objective 1.3: Retain a highly competent and diverse DoD STEM workforce.



DoD STARBASE grows to 53 programs in 33 states.

DoD STARBASE celebrates over 300,000 graduates.

2007



2008



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An Issue of National Importance

Advances in science, technology, engineering, and mathematics (STEM) determine our nation's capacity to produce better and smarter products, advance health care, create cleaner and more efficient domestic energy sources, preserve the environment, protect national security, and strengthen the economy. In 1957 the Sputnik I satellite was launched into space and the United States "launched" into action to regain global dominance in science and technology. As a result, the National Defense Education Act was signed into law in 1958 authorizing the Department of Defense (DoD) to, among other things, increase the flow of talent into science and engineering, fund enrollment in higher education, and enhance public understanding of science and technology.¹ This statutory role and responsibility has resulted in DoD building a wealth of expertise in STEM education.

The need to improve STEM education in the U.S. has been a national priority since 2005 when it became evident that the current educational pathways were not producing the STEM workforce and STEM-literate public



necessary for the United States to maintain its dominant position in the world. In order for the nation to lead in STEM, it is essential that the United States increase U.S. students' engagements in STEM disciplines and inspire and enable many more students to excel in STEM. In 2010 DoD created a DoD STEM Education and Outreach Strategic Plan and updated this plan in 2012. The plan identifies a DoD-wide direction for inspiring, developing, and attracting STEM talent essential to deliver innovative solutions for the nation's current and future challenges. The DoD STARBASE program

incorporates the objectives outlined under Goal 1 of the DoD strategic plan.

In FY13, the DoD STARBASE program operated at 76 locations in 40 states, the District of Columbia, and Puerto Rico. Program directors partnered with 1,321 schools from 413 school districts to serve over 70,000 students. Approximately 825,000 students have participated in the program since its inception. In addition, the Department of Defense also sponsors a STEM mentoring program for middle school students called DoD STARBASE 2.0. In FY13, 747 students worked with STEM mentors at 42 DoD STARBASE 2.0 programs across the nation. Of the

¹ National Defense Education Act, 1958.

More than 545,000 students have graduated from DoD STARBASE.

DoD STARBASE expands to 60 programs in 34 states.

2009

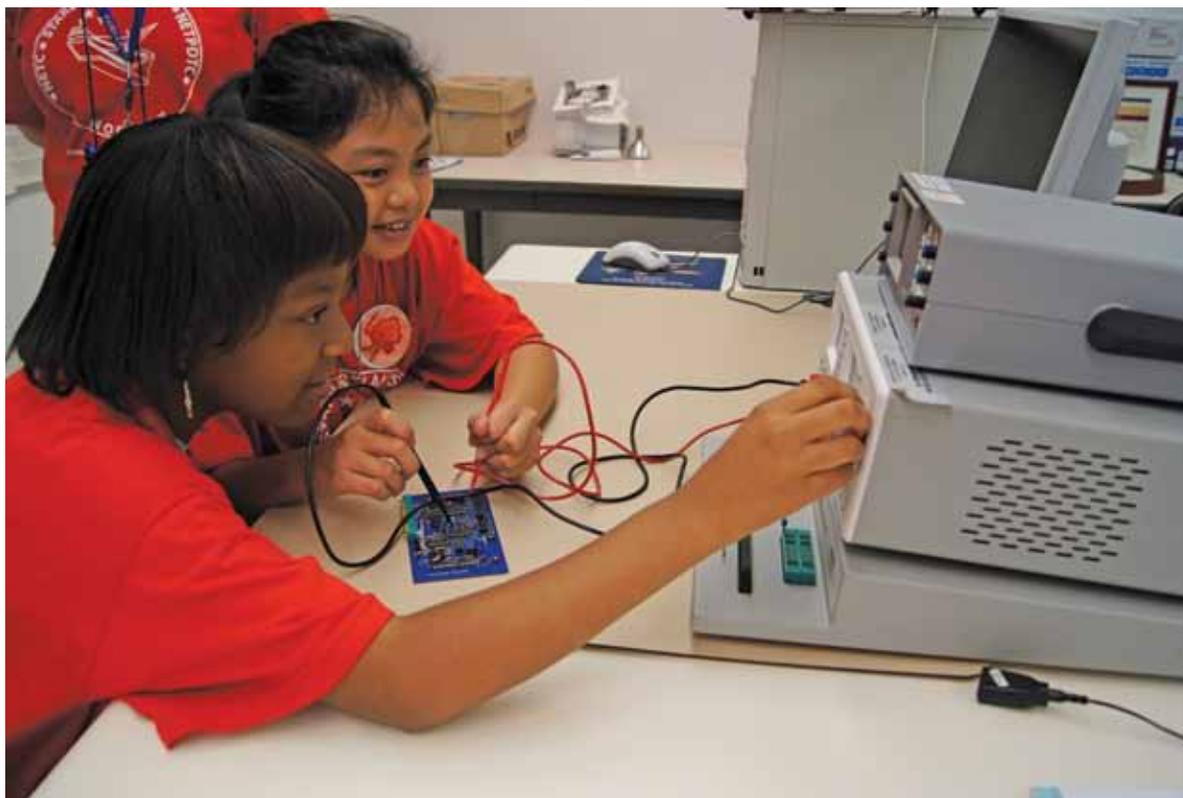


2010



DoD STARBASE 2.0 participants, 67 percent of these students were DoD STARBASE graduates who chose to continue their STEM journey at DoD STARBASE 2.0.

The scope of STEM engagement at DoD STARBASE is vast as there are many avenues designed to increase student involvement and interest in STEM, inform them of STEM's value in their lives, or positively influence the perception of their ability to participate in STEM. This annual report provides data from regular and rigorous evaluations as well as evidence of long-term outcomes through testimony and reports of what former DoD STARBASE students have accomplished and what they are doing today. It highlights the linkages that exist between DoD STARBASE, public school districts, and non-governmental organizations. The report also discusses the approaches taken by program directors to strengthen citizen science initiatives in their communities and to create an authentic STEM education experience for the participating students.



The middle school STEM program, DoD STARBASE 2.0, is piloted at five locations.

2010



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A Letter from *Colonel Cassie Barlow, Commander 88th Air Base Wing*

It is my great pleasure to share the impact that STARBASE has on our Wright-Patterson Community. As one of the epicenters for research and STEM development, we are in the ideal position to host this wonderful program that has supported more than 10,000 5th graders since its inception here in 2005. In 2013 alone, STARBASE Wright-Patt hosted more than 2,300 students from eight different schools districts in its program, but the impact only starts in the classroom.



STARBASE provides educational opportunities to teachers in more than eight different school districts. Providing critical insight into the common core and instructional directives required by the state, the STARBASE experience provides a return investment for educators. Teachers bring the wonder of STEM back into their classrooms. They bring engaged and motivated teaching with some of the best engineers and scientists the Department of Defense has to offer and work within exciting new collaborative environments.

STARBASE provides parents an opportunity to see their children develop and thrive, watching ideas take root and flourish. They see success in STARBASE and how STARBASE gives their children the confidence to take science and math as they move forward in their educations, excited about what they can and will be able to do.

Most importantly, STARBASE teaches our children that anything is possible with hands-on experimentation and practical application of scientific methods and ideas. To see the possibilities for the future come alive in the mind of a 5th grader and to have the opportunity to help those dreams develop by catching these students early are key to preparing them for the challenges of the an increasingly STEM-oriented world.

The DoD STARBASE Curriculum is aligned with National Standards. Physics: 3.5 hours/Chemistry: 3.5 hours/Technology: 4.0 hours /Engineering: 4.0 hours/ Mathematics Operations & Applications 2.0 hours/STEM Careers: 1.5 hours.

2010





We talk often of legacy in the Air Force and within the Department of Defense. We speak to the value of learning from those who are on the cusp of innovation and take our lead by seeing where their footsteps have been. STARBASE is our field to nurture the great minds that will see us into the future. The opportunity to inspire and mentor starting at this critical age is absolutely invaluable as we look towards our future workforce and the constantly evolving technological world. The ability to learn the history of tomorrow as it is made today is something that cannot be measured, but it's impact is surely felt as we see these

same inquisitive children make the difference for our national security, our technology, our health and human services, and in all of those critical areas that must continue to develop as a nation to keep us strong and secure.

Wright-Patterson combines the innovation of research with the challenge of acquisition and STARBASE is the perfect vehicle to bring these qualities together for students throughout the Miami Valley. It's a privilege for us to be part of this phenomenal program.

CASSIE B. BARLOW, Colonel, USAF
Commander, 88th Air Base Wing

DoD STARBASE grows to 76 locations in 40 states.

The DoD STARBASE 2.0 program grows to 24 locations.

2011



2012



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A Letter from *Major General Glenn Curtis, The Adjutant General of Louisiana*

I would like to take this opportunity to emphasize the profound partnership that the Louisiana National Guard and the DoD STARBASE program have shared in service to the youth of Louisiana. Through the DoD STARBASE program our local youth experience awareness of critical skills needed for the progression of scientific discovery, technology, and innovation.

Through this process we are able to assist in opportunities that foster academics, knowledge, abilities, and professional attributes directed to enable skills and future desires of these young participants. As a result of its continued availability, our members have seen a distinct benefit to our communities, which has subsequently strengthened the role of technology programs across the state.

In 2006, my youngest son, Jacob, attended the DoD STARBASE program at Camp Beauregard in Pineville, Louisiana. I recall how excited he was at the end of each day to talk about what he had learned. The program sparked an interest in aviation, which he still has today. Jacob is a senior in high school this year and plans to attend Louisiana Tech next year and major in aviation. The relationship between the Louisiana National Guard and the DoD STARBASE program is strong and will continue to grow as our partnership fosters. We will continue to support the goals under the DoD STEM Education Strategic Plan as an added cornerstone to our community outreach program. As interest in science and technology programs become more and more critical, DoD STARBASE remains our primary strategic partner to meet the needs of local and state stakeholders to foster economic development and growth of our employee workforce.

Therefore, it is with great pleasure that I continue to encourage the use and expansion of DoD STARBASE programs across the country to provide a unique variety of formal and informal STEM programs and opportunities to the broadest spectrum of our young citizens.

Sincerely,



Glenn H. Curtis
Major General, The Adjutant General



DoD STARBASE graduates compete in national competitions including the Team America Rocketry Challenge, White House Science Fair, 2012 Hovercraft Competition, and the National Scalextrix4Schools.

2012



Vision and Mission Statements of **DOD STARBASE**

Vision Statement

To raise the interest and improve the knowledge and skills of at-risk youth in science, technology, engineering, and mathematics, which will provide for a highly-educated and skilled American workforce who can meet the advanced technological requirements of the Department of Defense.

Mission Statement

By exposing youth to the technological environments and positive role models found on military bases and installations, we will provide 25 hours of exemplary instruction using a common core curriculum that meets or exceeds the National Standards. We will nurture a winning network of collaborators and build mutual loyalty.



DoD STARBASE celebrates over 20 years of providing an authentic STEM experience to youth across the nation and inspiring students, parents, teachers, and the public to engage in STEM discovery and innovation.

DOD STARBASE CURRICULUM

PHYSICS

- A. Newton's Three Laws of Motion
- B. Fluid Mechanics and Aerodynamics

CHEMISTRY SCIENCES

- A. Building Blocks of Matter
- B. Physical and Chemical Changes
- C. Atmospheric Properties

TECHNOLOGY

- A. Innovations
- B. Navigation and Mapping

ENGINEERING

- A. Engineering Design Process (EDP)
- B. 3-D Computer-Aided Design

MATHEMATICS OPERATIONS & APPLICATIONS

- A. Numbers and Number Relationships
- B. Measurement
- C. Geometry
- D. Data Analysis

STEM CAREERS

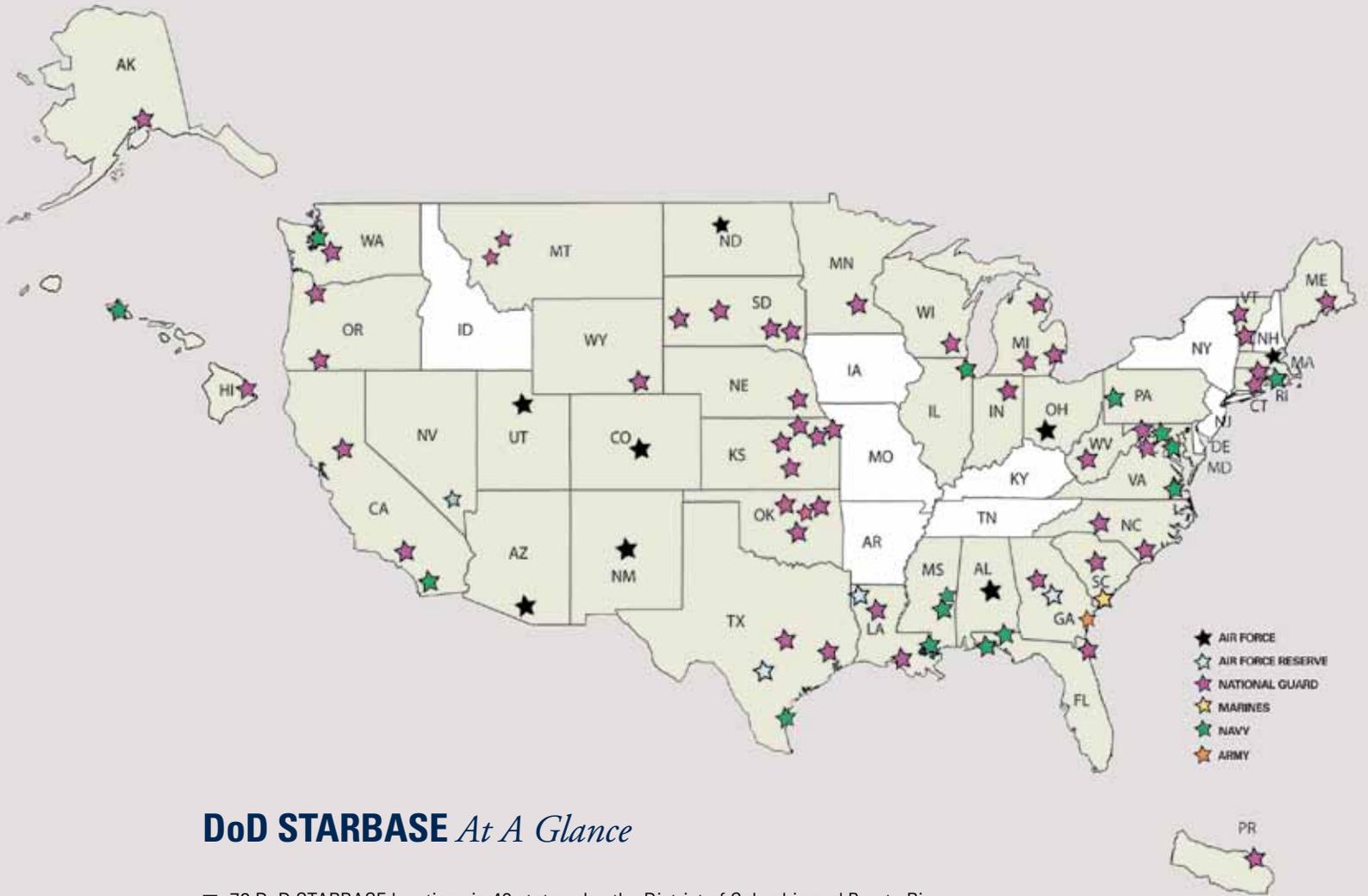
- A. STEM Careers on Military Facilities
- B. Personal Investigations

2013



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DoD STARBASE *At A Glance*

- 76 DoD STARBASE locations in 40 states plus the District of Columbia and Puerto Rico
4 outreach programs to Native Americans in MS, OK, and SD
- Number of students since 1993 824,637
- Number of students served in 2013 77,174
- Cost of program \$24,275,000
- Average cost per academy \$319,408
- Average cost per student \$343





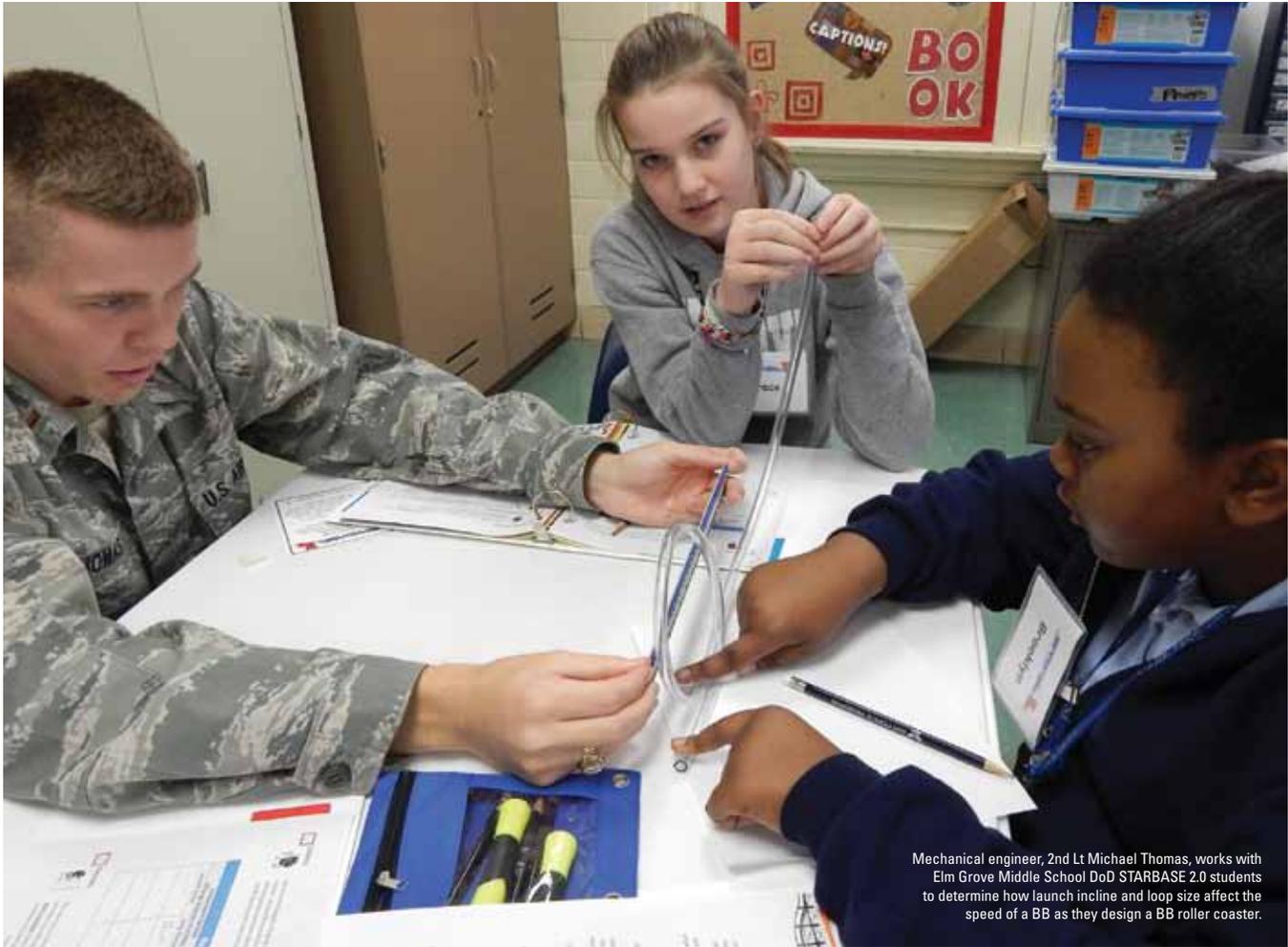
DoD STARBASE Inspires Youth **Through Collaborations and Rigorous STEM Initiatives**

The DoD STARBASE directors and staff members across the nation continue to inspire today's youth to pursue STEM opportunities through a wide variety of STEM collaborative efforts. All activities support the DoD STARBASE vision and commitment to ensure the U.S. workforce is literate and a leader in the science, technology, engineering and math fields. The stories below illustrate the depth and scope of that commitment.

DoD STARBASE LOUISIANA | DoD STARBASE Louisiana has been serving the students and teachers of Northwest Louisiana for almost 15 years. Through vital partnerships, DoD STARBASE Louisiana has been a key element in building STEM initiatives and opportunities in the Bossier/Shreveport community. From the onset, Bossier Parish Schools realized participating in DoD STARBASE provided their students an unprecedented experience. Teachers appreciate that DoD STARBASE covers numerous Common Core State Standards (CCSS)



DoD STARBASE 2.0 students from Cope Middle School and their mentor, Andrea Violet, a forensic accounting student, test the paper boat they designed during an engineering activity.



Mechanical engineer, 2nd Lt Michael Thomas, works with Elm Grove Middle School DoD STARBASE 2.0 students to determine how launch incline and loop size affect the speed of a BB as they design a BB roller coaster.

in mathematics and language arts. It also covers many of the objectives (Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts) of the national Next Generation Science Standards (NGSS) recently published by the National Science Teachers Association. Bossier Parish School Superintendent, D.C. Machen, explains the underlying principle for the partnership:

"The mission of the Bossier Parish School System is to increase the academic achievement and workforce skills of all students while sharing the responsibility with our community to provide enhanced learning opportunities, which develop their skills to compete in a global economy. DoD STARBASE is one of the most viable partnerships that not only plays a role in ensuring we increase the rigor in science and math skills for our students but provides opportunities for enhanced educational involvement for our students in STEM curriculum initiatives as well."

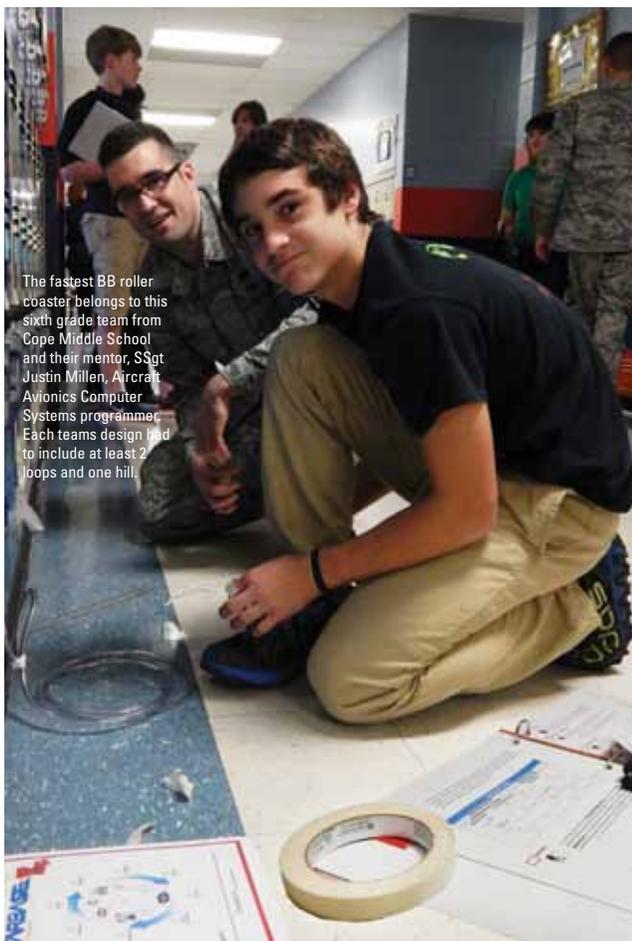
In 2005, Bossier Parish Schools made DoD STARBASE an integral part of their formal District Improvement Plan. Tom Daniel, Bossier Parish School District Chief Academic Officer, stated:

"DoD STARBASE has provided our 5th grade students a hands-on experience like no other. The result was a rewarding combination of fun, challenging experiments, and a mind-stretching short course. Our students performed much better on the science portion of the LEAP (Louisiana Educational Assessment Program) after being exposed to the rigor and relevance that DoD STARBASE provides. We now include it in all our district improvement plans."

A common goal for DoD STARBASE and Bossier Parish administrators was to provide the DoD STARBASE opportunity to all 5th grade students in that district. In 2006, Bossier Parish Schools committed a full-time teacher, at their expense, to increase DoD STARBASE Louisiana's capacity and ultimately fulfill that goal.

Building on that success, Bossier Parish was a prime candidate to initiate the pilot a DoD STARBASE 2.0 program at one of their middle schools in September 2012. The partnership goal was to implement and refine a three-tiered curriculum with the intent of eventually embedding the lessons, activities, and projects into the school curriculum as a STEM elective offered in the 6th, 7th, and 8th grades. In one short year, this successful model has been extended to nearly 100 students from three middle schools. Emma Jordan, Bossier Parish Middle School Curriculum Supervisor, lauded the 2.0 program by saying:

"The DoD STARBASE Louisiana program is able to offer content-specific special programming in STEM topics, which is crucial for the development of our nation and for the long term health of our economy. We are very excited to continue this effort by partnering with DoD STARBASE Louisiana in the development of the DoD STARBASE 2.0 middle school program. After seeing the success and growth of the students that participated in the pilot program, we have worked with DoD STARBASE to expand this awesome program to three middle schools within our school system."



The fastest BB roller coaster belongs to this sixth grade team from Cape Middle School and their mentor, SSgt Justin Miller, Aircraft Avionics Computer Systems programmer. Each teams design had to include at least 2 loops and one hill.

DoD STARBASE Louisiana develops the curriculum and provides activity materials, mentor training and orientation, as well as staff to work with the students and mentors at each 2.0 session. The district's investment includes providing the facilities and coordination, as well as stipends for 15 STEM and enrichment teachers dedicated to serve as mentors and facilitators. This allows them to become familiar with the curriculum modules to ensure the program's successful transition into the school curriculum. The curriculum is designed to build upon itself allowing students to participate for up to three consecutive years without repetition. As in the 5th grade DoD STARBASE program, the objectives, lessons and activities have been aligned with the CCSS and NGSS. They include hands-on investigative activities that are coupled with designing on a three-dimensional platform which helps students develop geometric understanding, spatial relationships, and logical reasoning. This work-like experience uses the design-test-redesign process and exposes them to the processes, high tech tools, and applications used by professionals in STEM careers. This second and prolonged exposure to project-based STEM content and applications through the DoD STARBASE 2.0 program is designed to sustain student interest into high school and keep them engaged in STEM courses in preparation for college and future careers.

D
DoD STARBASE ROBINS | The many partnerships formed by DoD STARBASE Robins since they opened their doors 17 years ago have helped them to grow into one of the leading DoD STARBASE programs. These partnerships range from museums and local universities to school districts and local businesses all with the same intent – provide the best possible STEM education to help develop the technological workforce the United States needs in the future.



Their continuing partnership with the Museum of Aviation at Robins Air Force Base and the Museum of Aviation Foundation has yielded positive results in the growth and collaboration with key partners and stakeholders. These partnerships support every aspect of their program which include their 5th grade DoD STARBASE academies, DoD STARBASE 2.0 afterschool STEM mentoring clubs, FIRST LEGO League and summer academies which include robotics, engineering, criminal science, and a DoD STARBASE 2.0 summer program.

Pre-service teacher candidates from Ft. Valley State University (FVSU) are provided practical hands-on experience through their partnership with DoD STARBASE Robins. Students from FVSU's College of Education science practicum class attend the DoD STARBASE Robins academy and, after observing for five weeks, teach one of the DoD STARBASE lessons to the 5th grade students. This opportunity allows DoD STARBASE to



Huntington Middle School DoD STARBASE 2.0 Club mentor and students getting ready for competition.

influence STEM content and pedagogy. Students from FVSU, as well as other local universities and colleges, also participate as mentors for the DoD STARBASE 2.0 program.

The partnerships between the surrounding school districts and DoD STARBASE Robins are vital. Four school districts participate in the 5th grade academies and three participate in DoD STARBASE 2.0 initiatives. DoD STARBASE Robins has one of the largest DoD STARBASE 2.0 programs with seven participating middle schools. A partnership with the Museum of Aviation Foundation resulted in the award of NASA's Competitive Program for Science Museums, Planetariums, and NASA Visitor Centers (CP4SMP+) Grant. This helped to expand the DoD STARBASE 2.0 program which allowed for resources that could not have otherwise been provided.

Involving business, industry and the overall community with the DoD STARBASE Robins program is also important for the continued growth and sustainability of the program. DoD STARBASE Robins provides opportunities for local businesses and the community to get involved with STEM education and makes it easy for them to do so. Volunteers are recruited to serve as career guides for the 5th grade academies, for the Central Georgia Super Regional FIRST LEGO League competition, and as mentors for the DoD STARBASE 2.0 program.

Partnerships with DoD STARBASE Robins are a "win-win" for all involved. Their collaborative approach gives businesses and organizations a way to "pay-it-forward" while providing outstanding STEM education opportunities for the students of northern Georgia.

DoD STARBASE MINNESOTA | The Twin Cities Minneapolis and St. Paul, Minnesota are home to 19 Fortune 500 companies, 27 Fortune 1000 companies and several of the world's largest private companies, representing industries such as: IT, biomedical, chemical, financial, healthcare, electronics, advanced manufacturing, and robotics. Innovation is their lifeblood, and since 1993, DoD STARBASE Minnesota has been actively preparing the next generation of creative, STEM-skilled problem solvers to help take on the current and future challenges facing these high-tech employers.

Over the past 20 years, DoD STARBASE Minnesota has provided exciting, innovative and evidence-based programming to over 45,000 Twin Cities' youth which transforms STEM into disciplines of relevance and applicability. Breaking the mold of traditional and even modern-day practice where STEM education is approached as discreet and theoretical subjects, DoD STARBASE Minnesota immerses students in a stimulating and integrated STEM environment abundant with accessible technology that fuels student excitement about learning. Their relationship with corporate communities provides a one-of-a-kind environment for high-caliber curriculum and instruction that has become an educational lab and model for the state. Doug Paulson, STEM Specialist in the Division of Academic Standards and Instructional Effectiveness at Minnesota Department of Education said:

"DoD STARBASE Minnesota provides an exemplary model of integrated STEM for our state. The program employs best practice instruction engaging students with intentionally designed learning experiences as they explore scientific and engineering questions and problems."



Educating and inspiring over 3,300 students each year comes with a great deal of responsibility for ensuring that the love of STEM in DoD STARBASE students continues to burn hot long after participation in the program. DoD STARBASE 2.0 is one way in which DoD STARBASE Minnesota has engaged volunteers in this endeavor. Whether it is helping Twin Cities' students tackle engineering feats in this year's "Nature's Fury" FIRST LEGO League robotics challenge or aiding students in their design of renewable energy sources, the MN National Guard, with its goal of strengthening awareness and connections in the community, directly benefits from their volunteer participation in DoD STARBASE 2.0. DoD STARBASE Minnesota's partnerships with over 20 corporations, including 3M, BAE Systems, Boston Scientific, Cummins Power, Delta, Ecolab, General Mills, Medtronic, Microsoft, St. Jude Medical, Stratasys, Xcel Energy and others, play a key role in bringing STEM industry relevance to DoD STARBASE programs and engagement with students that evokes curiosity and excitement about a future STEM career. The military, government, business, industry and schools have invested in DoD STARBASE Minnesota.



MN National Guard MSgt Theresa Mensinger, a DoD STARBASE Minnesota Mentor, helps students measure and analyze data to determine the optimal launch angle.

To bring post-DoD STARBASE experiences to a greater scale, DoD STARBASE Minnesota developed additional strategies that range from the very simple to the more complex. The DoD STARBASE Minnesota virtual student

St. Paul Public School students learning “volumes” of science at DoD STARBASE Minnesota in immersive STEM environment.



Clubhouse has been an easy way for individual students, as well as whole classrooms, to continue their pursuit of STEM with online lessons and activities. Since the Clubhouse doors opened, over 10,000 post-DoD STARBASE lessons have been conducted. DoD STARBASE Minnesota also initiated the development of a “Community of Practice in STEM” and what started out as a collaborative of 40 STEM practitioners and policy makers

has now become its own organization. The Minnesota STEM Network now has over 200 members with STEM hubs across the state. The original STEM inventory developed by DoD STARBASE Minnesota is being used as a basis for a statewide inventory. STEM Day at the Minnesota State Fair has now become an annual statewide awareness and STEM celebration campaign. Regularly scheduled conferences and other STEM initiatives have helped further collaboration, awareness, access to and enthusiasm for STEM. Along with these strategies that gain further momentum each year, DoD STARBASE Minnesota continues its long time relationships with area colleges and universities to provide field experiences for pre-service teachers in the critical role of helping to help develop the next wave of STEM educators.

One of the most exciting new initiatives of DoD STARBASE Minnesota is the “STEM Pathways” project. Inspired by the promising results of the Wilder Research longitudinal study of former DoD STARBASE Minnesota students, DoD STARBASE Minnesota initiated a partnership between Minneapolis Public Schools, Department of Education and seven community STEM nonprofit organizations to develop an innovative, educational model that leverages and links student STEM learning between partner organizations to form a deliberate, contiguous and illuminated pathway for greater long-term student success in STEM. Each of these STEM nonprofits have an outstanding reputation with area school districts and in the broader community and while all are well aligned with state standards and district needs, they have historically-developed programming independent of each other. STEM Pathways will transform how these Twin Cities’ nonprofits go about designing, developing and implementing programs and instruction, and collaborating in that work. The linkages, connections and consistencies between partner organizations will be evident to all participants and a clear STEM pathway for students will be lit. Further, this work will establish a long-term K-12 STEM education plan with all STEM partners for the district for years to come. Wilder Research will continue to study the impact of this model which, in the second year, will be expanded across more grade levels and additional partners.

DOD STARBASE HARTFORD AND EAST HARTFORD PUBLIC SCHOOLS

During the past six years, DoD STARBASE Hartford has proven to be a premier STEM education program for the students of East Hartford Public Schools. In addition to the five-day DoD STARBASE program, DoD STARBASE Hartford provides a variety of DoD STARBASE 2.0 afterschool STEM clubs, works with the local IB elementary school to restructure STEM education classes for the students, and brings three FIRST LEGO League clubs to competition. DoD STARBASE Hartford has truly had a positive impact on East Hartford Public Schools.

This impact is most evident in attendance numbers and increased enrollment in AP classes for the district. DoD STARBASE Hartford has been working with East Hartford 5th grade students since 2007 so the first graduating class is now attending the 11th grade. In a comparison of the attendance rates at both East Hartford high schools from 2007 to 2011, the rates have increased by 6.1 percent. In a similar comparison, the number of students taking AP classes increased by 19.6 percent over the same period.

The DoD STARBASE program may have also had a positive impact on the Connecticut Mastery Tests scores. In a comparison of math and science results between 2004 and 2009 and 2005 and 2010, test scores have increased 8.3 percent and 9.3 percent, respectively.



A Letter from *Melissa Gavarrino, Secondary Supervisor of Science, East Hartford Public Schools*

I am writing today to express my sincere appreciation for the opportunities afforded East Hartford Public Schools through the Department of Defense's STARBASE program. As a district we have supported the inclusion of DoD STARBASE into not only our 5th grade curriculum but, in the past two years, into our afterschool programming at both the elementary and middle school level.

Every 5th grade class in our district attends five days of DoD STARBASE instruction each year. Our students have attended the program since 2007, and I can attest to the value of the experience via feedback we receive from both teachers and students. When we introduced DoD STARBASE 2.0 at our middle school two years ago, as we travelled from class to class talking to students about the opportunity to participate in an afterschool version of DoD STARBASE, they were ecstatic. We filled the program immediately and have continued to do so for the past two years. Students remember their elementary experience and speak positively about not only the activities but the staff as well. Everyone remembers Raven, Redbird and Sparkle, and Dory!



From a science perspective, I support using our valuable instructional time to have students and teachers attend DoD STARBASE. The program is grounded in inquiry and addresses appropriate content standards in an engaging, exciting and relevant manner. Students as well as teachers benefit from participating in the lessons and activities which truly bring STEM to life. The integration of engineering practices, math application, engaging technology and science concepts, all in an atmosphere which promotes teamwork and problem solving, is a worthy investment of our time.

Personally, I have enjoyed our partnership with DoD STARBASE. Director Melissa Vanek and her staff are always willing to listen and problem solve around any type of issue. They strive to make those important connections with our students so they can see the absolute potential in STEM-related fields of study and that these opportunities are within reach. I look forward to our continued partnership! If you have any questions regarding our support of this program, please do not hesitate to contact me.

Sincerely,

Melissa Gavarrino

Secondary Supervisor of Science
East Hartford Public Schools

DOD STARBASE OKLAHOMA CHANGING THE APPROACH TO LEARNING

DoD STARBASE Oklahoma reaches across Oklahoma's diverse cultural landscape from rural communities in western Oklahoma to urban areas such as Tulsa, Oklahoma City, and Lawton. Our Native American Initiatives also reach out to Native American communities throughout the state. In Cyril, (population 1,800 with 65 percent of students eligible for free/reduced lunch), students have been DoD STARBASE participants since the 2005-06 school year. Since that time, middle school state science test scores in Cyril have been rising and more students at Cyril High School have been taking advantage of STEM classes. Teachers and administrators cite DoD STARBASE as an important contributing factor to the school's success in the STEM arena.

The Oklahoma DoD STARBASE program has evolved into a collaborative hub for school improvement, especially with the addition of DoD STARBASE 2.0. Middle school students in Canute, Midwest City, Tulsa, and Ft. Sill have participated in STEM projects such as CO₂ rocket dragsters, radio-controlled airplanes, robots, PTC's Computer-Aided Design (CAD) activities, the Tulsa Engineering Design Challenge, building design and construction, the SeaPerch underwater robotics program, and wind tunnel experiments.

DoD STARBASE 2.0 brings together afterschool STEM programming, a school-based location, and adult STEM mentoring to create a STEM community of learning which provides diverse, rigorous, and exciting STEM pathways of study which benefit all parties. A DoD STARBASE 2.0 Oklahoma mentor thanked STARBASE for allowing him to be more involved with their schools, stating "Prior to STARBASE, I was on the sidelines."

The collaboration of key partners including military, education, business and industry, consortia, associations and government agencies² is the key to developing systems of long-term school improvement, making a difference in the lives of students and, ultimately, a difference in the economic prosperity of Oklahoma's citizens. While extolling the virtues of DoD STARBASE 2.0, one Oklahoma principal said, "This STEM program is the wave of the future and we want our students to be prepared for the future workforce. DoD STARBASE 2.0 motivates and encourages students to be all they can be for the future. Thank you for an experience I will never forget."

² Oklahoma National Guard, Oklahoma Military Department, Tulsa Air National Guard Base, Will Rogers Air National Guard Base, Tinker Air Force Base, Ft. Sill, Army Aviation Support Facility, Muskogee Armed Forces Reserve Center, Camp Gruber, Whitaker Education and Training Center, Oklahoma Space Industry Development Authority, Air Force Association Gerrity Chapter 215, Civil Air Patrol, STARBASE Oklahoma Inc., Raytheon, NORDAM, American Airlines, FAA, Intercontinental Jet Service Corporation, Tulsa Airport Authority, Project Lead the Way, Oklahoma Aeronautics Commission, NASA Oklahoma Space Grant Consortium, Oklahoma EPSCoR, Oklahoma Aerospace Education and Industry Partner Day, Oklahoma Innovation Institute (OII), Tulsa Alliance for Engineering, Oklahoma Engineering Foundation, Tulsa Regional STEM Alliance, Tulsa Engineering Foundation, Society of Women Engineers, Hardesty Center for Fab Lab Tulsa, Tulsa Air and Space Museum, FIRST Lego League, Oklahoma Department of Transportation, Oklahoma Energy Resource Board, Oklahoma educational systems (K-12, CareerTech, Higher Education), Oklahoma State Department of Education, Tulsa Technology Center, Rose State College, Tulsa Community College, Tulsa Regional Chamber - Partners in Education

A Letter from *Karen Cooksey, Principal, Pat Henry Elementary, Lawton, OK*

As an elementary school principal, nothing is more exciting than the opportunity to watch children as they challenge themselves and ignite an enthusiasm for learning. The DoD STARBASE program does just that. The DoD STARBASE program is an invaluable opportunity for my students and their teachers to take a journey through inquiry-based instruction that requires them to challenge themselves, learn from their peers, and have the experience of being hands-on scientists.

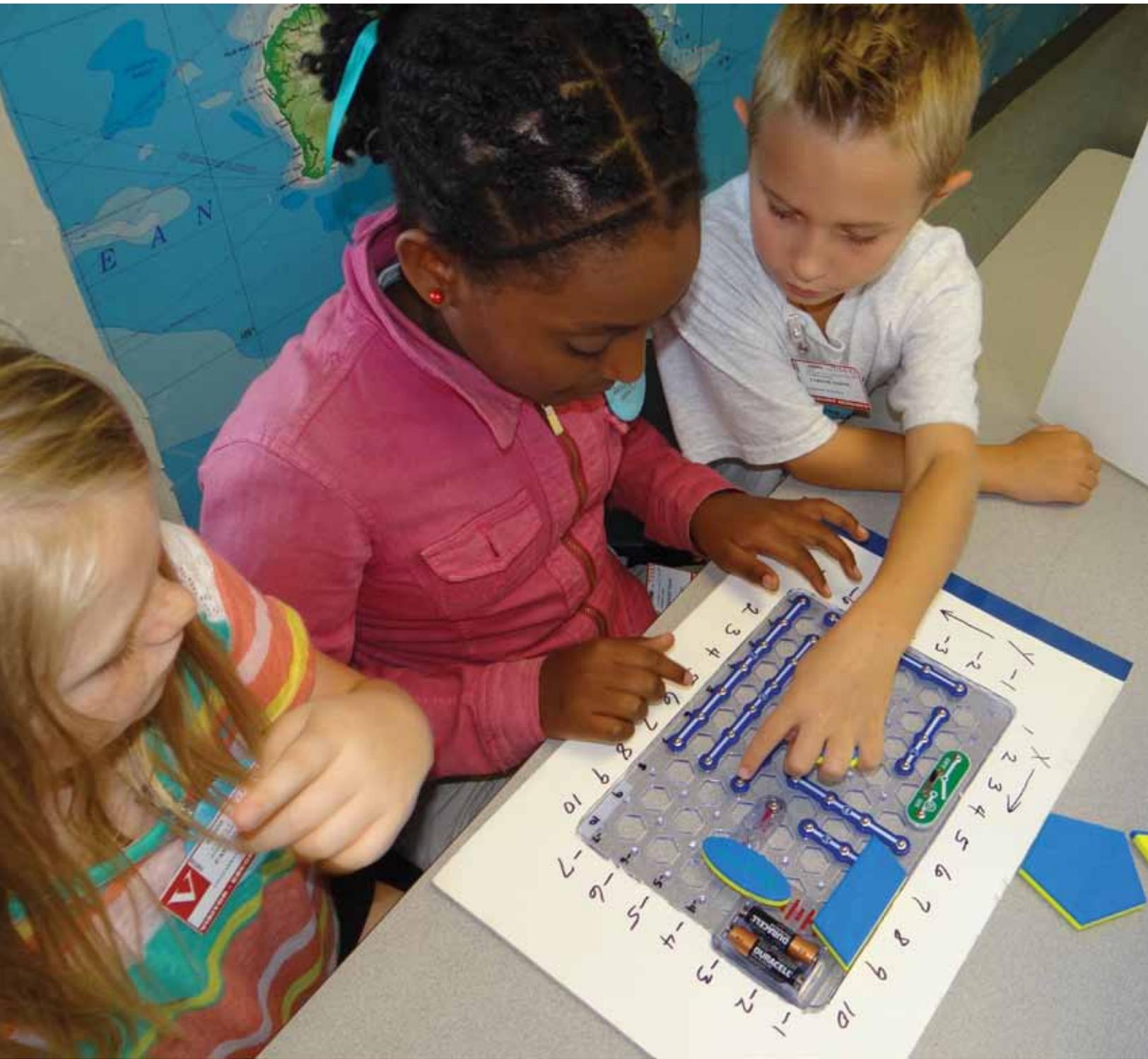
Education is shifting. Today's educators are charged with the sometimes daunting task of moving their students from knowledge and comprehension learning to application and analysis. The DoD STARBASE program provides our teachers the opportunity to observe students engaged in higher-level thinking. Seeing collaborative and authentic learning in action is a powerful component of the DoD STARBASE program. It doesn't take long to see the benefits of the DoD STARBASE program for students. However, teachers also benefit from the opportunity to see inquiry-based instruction in action. What a gift for our teachers to also be challenged and inspired to provide more of these opportunities in their own classrooms.

Our world is changing. It is imperative that we provide experiences for our students that will allow them to be inquisitive thinkers, problem solvers, team players, and investigators. The DoD STARBASE program encompasses all of these goals while ensuring that students are successful academically and on their way to becoming productive citizens. It has been my joy to see students' confidence and excitement grow as they progress through the DoD STARBASE program. The partnership between the Department of Defense and public schools is an invaluable one. It is my sincere hope that the DoD STARBASE program will continue to be a priority for years to come.



Karen Cooksey

Karen Cooksey
Principal
Pat Henry Elementary
Lawton, OK



A Letter from *Larry Flynn, President of Gulfstream Aerospace Corporation*



At Gulfstream Aerospace Corp., we design, manufacture, market and service the world's most advanced business-jet aircraft. We could not do any of that without our highly skilled employees. To ensure a continued stream of qualified employees, it is imperative that students are introduced to science, technology, engineering and math – more commonly known as STEM. We know that the children making paper airplanes in kindergarten and elementary school today are the engineers, pilots and technicians of tomorrow.

To that end, Gulfstream has been pleased to partner with the 3rd Infantry Division, Fort Stewart and Hunter Army Airfield to support DoD STARBASE Savannah, the first such academy on an active Army installation and the first for coastal Georgia. It is a perfect opportunity to put students from Savannah and Chatham County in an environment where they can learn in a dynamic and fun way about STEM – and, I'll admit, a little extra emphasis on aerospace – and enable them to interact with the incredible role models in our armed forces.

In Savannah, where our company is headquartered, DoD STARBASE is turning young minds onto STEM with great effectiveness. During the regular academic year, every public school system 5th grader participates in "hands-on, mind-on" activities. They interact with military personnel to explore careers and observe STEM applications in practice, including working on computers, "flying" an aircraft simulator and learning problem solving as a group.

As U.S. Commerce Secretary Gary Locke noted, "STEM jobs are essential to a competitive, innovative and technologically advanced U.S. economy." In fact, even in the current slow economy, there are ample job opportunities with higher pay for those whose careers are STEM-focused. At Gulfstream, for example, we announced a \$500-million, seven-year expansion plan in 2010 to ensure that the company was well-positioned to meet future demand. With two major expansions in less than 10 years, our workforce has grown by nearly 3,700. More than 25 percent of our workforce is in STEM roles, and many of the positions that currently do not require specific STEM skills are rapidly changing and requiring more STEM capabilities. A continued focus on STEM, exposure to the industrial arts and a commitment to ensuring students graduate high school and seek out continuing education opportunities are critical to students' success as well as ours.

That is why the DoD STARBASE program is so important. Last year, over 77,000 students participated in these programs, with an average cost per student of just \$343. What an amazing return on investment.

Gulfstream is pleased to support such a worthy endeavor. The future success of our company depends on robust programs like DoD STARBASE.

Sincerely,

A handwritten signature in black ink, appearing to read "Larry Flynn". The signature is fluid and cursive, written over a white background.

Larry Flynn

A Letter from *Shirin Saadat, Technical Director, Construction & Home Improvement Markets, 3M*

I have had the honor and privilege to be a member of the DoD STARBASE Minnesota Board of Directors for the past several years. It has been a rewarding and exciting experience to see how DoD STARBASE Minnesota can positively impact the STEM experience for so many students in Minnesota. Kim Van Wie, DoD STARBASE Minnesota Executive Director and her staff have created an inspiring STEM experience for the students from over 30 schools in Minneapolis and St. Paul. The STEM-centric curriculum is truly a hands-on educational experience that begins with classrooms on-site at the 133rd Airlift Wing of the Minnesota Air National Guard Base. The students are immersed in an aerospace setting that is both inspiring and engaging. In addition to the



classroom's inspiration, DoD STARBASE Minnesota's teaching staff is outstanding at presenting the hands-on curriculum with enthusiasm and skill. The students practice science, math and engineering problem-solving skills and develop confidence and aptitude in basic STEM skills while having fun! The outcomes are measurable and long lasting. In a recent longitudinal study of former DoD STARBASE students, nearly a decade later, 83 percent thought DoD STARBASE helped them understand STEM better and 79 percent said it increased their interest in STEM. These students are our next generation's workforce and there is an important need to inspire and engage young minds early in STEM education.

In my role as Technical Director of 3M's Construction and Home Improvements Market Division, I know how important it is to have an engaged and technically talented workforce in our laboratory. Our success today and in the future is built on the talent and dedication of our employees. We are entering a transformational time in our workforce demographics, and it will be imperative to our future sustainability to have a vibrant STEM skilled workforce. To develop the innovative products of the future, our laboratories need individuals with strong skillsets in STEM sciences (material science, chemistry, polymer science, etc.) and, additionally, have the aptitude to be creative and collaborative problem solvers! DoD STARBASE Minnesota is a wonderful and highly-effective example of a curriculum and organization that is inspiring students to be confident in math and science and develop problem-solving skills.

I am also very proud that scientists and engineers from 3M volunteer their time and talent with DoD STARBASE Minnesota students, demonstrating how STEM is applied in the work world and encouraging their pursuit of STEM careers. The interactive demonstrations and investigations included: engineers sharing properties of conduction and 3M conductive tapes, measuring airflow using an anemometer, simulating a manufacturing line, demonstrating the use of CAD software in industry, showing electronic stethoscope models and lung visualization software, using a shaker to show the effects of vibration in mechanical structures, and demonstrating how fuel cells can be a source of electricity, water, and heat. As stated by Bill Klinzing, PhD, Senior Engineering Specialist of 3M Design & Engineering Solutions, "DoD STARBASE is a fantastic experience for all involved. The seasoned engineers and scientists are all supercharged about the applications of math and science! It is a highly energetic program and the 3M team enjoys the kids and STARBASE teachers as much as the students enjoy our visits!"



In short, it's vitally important that STEM education programs inspire and develop our next generation workforce. DoD STARBASE Minnesota is a truly unique and inspiring example of how effectively STEM education can be provided to young students and make an impact.

Sincerely,
Shirin Saadat
Technical Director,
Construction & Home Improvement Markets, 3M

2013 DoD STARBASE ACCOLADES

WHAT STUDENTS SAY

"I liked learning about the Buckyballs. Who knew that such little things could do such big things?"
– Student at DoD STARBASE Oklahoma - Tulsa, Tulsa, OK

"Being a girl, people didn't think I should love science. But at DoD STARBASE they made me feel like I could do anything I wanted and be anything I wanted. I think more girls want to be scientists, but nobody tells us that. DoD STARBASE encouraged me to love science and made me feel good about myself!"
– Student at DoD STARBASE - Atlantis Pittsburgh, Pittsburgh, PA

WHAT PARENTS SAY

"With local school budgets increasingly stressed and limited enrichment available to students most in need, DoD STARBASE is a critical resource for the region that brings two different worlds together to solve 'impossible' problems and dream 'impossible' dreams."
– Parent of student at DoD STARBASE Wright-Patt, Wright-Patterson Air Force Base, OH

"This experience opened my son's eyes to the possibilities of career choices for what he loves. He always said he didn't want to go to college; however, all that has changed. When he got in my car this afternoon he was on fire to learn more and one day go to college and become an engineer! Thank you for the fun, exciting experience my son was able to have! I have two more coming up, and I hope they too can get this opportunity!"
– Parent of student at Texas DoD STARBASE Houston, Houston, TX

WHAT EDUCATORS SAY

"The high level of engagement is fantastic. Concepts come to life because of all of the hands-on experiences. Students were able to make connections and learning was not merely on the surface—it was digested and understood."
– Teacher participating at DoD STARBASE Charlotte, Charlotte, NC

"Our students' experience at DoD STARBASE had a profound impact on the way they feel about science. The hands-on activities gave them a new perspective of how science worked. It developed a spirit of teamwork which filtered back into the classroom thereafter. It also helped the students to think really critically in certain situations which served as a great introduction to the expectation for the new common core curriculum which we are fully transitioning to this year. The experience our students had is one I hope will be available to all our upcoming 5th graders in the future. Thank you for helping us pursue our mission of developing college-bound students for leadership and lifelong learning."
– Teacher participating at DoD STARBASE Jackson Barracks, New Orleans, LA



2013
DoD STARBASE
ANNUAL REPORT



2013 ASSESSMENT

EXECUTIVE SUMMARY

Section 2193b, Title 10, United States Code authorizes the DoD STARBASE program. The authorizing legislation requires the Secretary of Defense to submit an annual report to Congress on the conduct and effectiveness of the program.

The FY13 assessment process obtained information via knowledge and attitudinal tests, structured interviews, questionnaires, program visits, and conversations with program participants. Assessments, interviews, and/or questionnaires were received from 1,889 students, 2,146 teachers, and all DoD STARBASE directors. A brief overview of the assessment highlights some of the key findings of the analysis.

Highlights

STUDENT ASSESSMENT

- 99% academy participation rate (74 of 75 academies participated in this year's Student Assessment).
- 87% respondents were in the fifth grade and 89% between 10 & 11 years old.
- Approximately 51% of respondents were girls.
- Performance on knowledge items increased significantly (+5.20 points) pre- to post-program. Chemistry sciences showed the largest curriculum area improvement (increase of 1.68 points).
- 61% increase in students applying Bernoulli's Principle correctly.
- 59% increase in students knowing the correct composition of air.
- 20 of the 26 attitudinal items improved significantly pre- to post-program with some of the largest shifts in items focusing on the military and confidence in being good at science and math.
- Students identified as high performers scored higher on the pre- and post-knowledge assessment and attitude survey compared to their low-performing counterparts. The largest gap was on the knowledge assessment where:
 - High performers improved by 8.7 points pre- to post-program, and
 - Low performers improved by 1.5 points pre- to post-program.
- Those entering the program with low military attitudes had lower post-program knowledge scores, lower knowledge-gain scores, and less favorable attitudes for both the pre- and post-program than those entering the program with high military attitudes.
- Boys had higher post-program knowledge scores than girls. There were no differences across gender for the attitude composite score, but the genders differed on 11 specific items.
- Students with prior knowledge of, and experience with DoD STARBASE responded more favorably to attitudinal items than those with no prior knowledge or experience.
- Increased student age correlates with increased boredom and not learning as much useful information as compared to their younger counterparts. Older students are also more likely to report less confidence around making decisions.

TEACHER ASSESSMENT

- Almost 100% of the teachers report that the DoD STARBASE content and concepts help them reach their state requirements either directly (94.9%) or indirectly (4.7%).
- Over 90% have recommended DoD STARBASE to others.
- Nearly 65% utilize the DoD STARBASE materials in their classroom but under half (43%) use DoD STARBASE take home activities beyond the classroom.
- There was a 27% increase in the proportion of teachers new to DoD STARBASE in 2013 over 2012. Prior surveys have shown that teachers with more DoD STARBASE experience give the program higher ratings.
- There was an 11% increase in the proportion of teachers with four or fewer years of teaching experience in 2013 compared to 2012. Prior surveys have indicated that more experienced teachers give the program higher ratings.
- Five Effectiveness Factor items and one Military Factor item were dropped in the 2013 survey.

DIRECTORS' QUESTIONNAIRE

DoD STARBASE Program

- The DoD STARBASE program conducted 3,062 classes this year serving 1,267 schools across the country and 413 school districts.
- Of the 1,267 schools participating in the program, 75% were Title 1 eligible schools.
- 89% of the DoD STARBASE locations serve school districts within a 50-mile radius of their program site.
- 88% of DoD STARBASE students are fifth graders. 49% female and 51% male.
- The average instructor-to-student ratio for the 2013 program year was 1:12.
- The average class size for the 2013 program year was 24 students.
- The American Indian or Alaskan Native, Black or African American, and Hawaiian Native or Pacific Islanders populations are higher at DoD STARBASE than at U.S. public schools.
- 92% of the locations provide additional curriculum materials to schools/teachers, 46% provide training to local teachers and 56% have relationships with nearby teacher colleges or training programs where student teachers may obtain practicum hours at DoD STARBASE.
- Contractor affiliations made up the majority (52%) of the DoD STARBASE employment relationships.
- There were 124 staff changes out of 375 staff positions in FY13 for an overall turnover rate of 33% which is significantly higher than the 14% average over the past nine years.
 - Of those staff members who left the program, 26% indicated that better opportunities were the reason for their decision to leave DoD STARBASE, while 25% cited a critical event impacted their decision to leave.
 - Staff departures may have been impacted by the threat of loss of funding due to the realignment of federal STEM programs. Of the departing employees, 36 (29%) resigned in the last six months of the fiscal year after realignment and funding changes were announced.

Continued on next page

- The DoD STARBASE locations documented a total of 10,323 volunteers who contributed a total of 106,399 hours to the program.
- The average operating costs per location was \$319,408.
- The average cost-per-student decreased by 10% from \$382.24 in 2012 to \$343 this year.

DoD STARBASE 2.0 Program

- 25 DoD STARBASE locations reported coordinating a total of 42 DoD STARBASE 2.0 programs.
- 34 districts and 45 schools partnered with DoD STARBASE to operate a 2.0 program.
- The greatest numbers of 2.0 programs (26 programs) were sponsored by the Air National Guard where the majority of the DoD STARBASE programs are also located.
- The average retention rate was 89%.
- 67% of the DoD STARBASE 2.0 students were former DoD STARBASE students.
- The 2.0 program attendees included 38% females and 62% males.
- The average class size was 25 students.
- There was a 1:3 mentor to student ratio.
- The students are mostly sixth and seventh graders (48% and 31%, respectively) although some are from other grades.
- Some groups of students (American Indian or Alaska Native, and Black or African American) are in higher concentration at DoD STARBASE 2.0 than reported by public school enrollment.
- The majority (60%) of the 25 locations received funding from both federal and private funds and 32% receive solely federal funds.

Each section of the following report provides an assessment of the program's progress and describes the unanticipated and/or unresolved issues that emerge in program operations. The report is organized as follows:

- DoD STARBASE Program Elements
- DoD STARBASE 2.0 Program Elements
- Program Oversight
- Fiscal Analysis
- Assessment Results
- Considerations
- Appendices
- DoD STARBASE Program Directory

THE PROGRAM ELEMENTS OF DoD STARBASE

DoD STARBASE programs operate under the auspices of the Department of Defense (DoD) through the Office of the Assistant Secretary of Defense for Reserve Affairs (OASD/RA). Synergy between the local military base, schools, and surrounding communities enhance and strengthen the program.

The DoD STARBASE program conducted 3,062 classes this year serving 1,267 schools across the country in 413 school districts. DoD STARBASE locations may schedule the 25-hour program over five consecutive days or on a weekly basis over five consecutive weeks. Most DoD STARBASE locations use a weekly schedule. Over 70,000 students attended the five-day program in FY13. During the summer months many DoD STARBASE locations also offer a variety of supplemental programs to area youth in grades K–12. Supplemental programs provided in FY13 include: aerospace education, robotics instruction, weather watchers, engineering instruction, forensics, and space camp. In FY13, 53 DoD STARBASE locations offered some type of supplemental program serving an additional 6,368 youths.

The Department of Defense Instruction (DoDI) 1025.7 outlines the guidelines and directives for the DoD STARBASE program. The DoDI covers operational requirements such as budget, desired grade level, class size, scheduling hours, curriculum topics and activities, the desired demographics, documentation requirements, testing, and program location. If a DoD STARBASE director wishes to deviate from the DoDI requirements, he/she must submit a written request to OASD/RA.

THE MILITARY

The military houses and supports DoD STARBASE programs.¹ Programs are located at various military installations including: Air Force (eight locations), Air Force Reserve (four locations), Air National Guard (35 locations), Army (one location), Army National Guard (12 locations), Marine Corps (one location) and Navy (15 locations) installations. The majority of the DoD STARBASE locations (89%) serve school districts within a 50-mile radius of the programs' duty station. Locations that extend beyond a 50-mile radius generally have made special accommodations to reach more students such as the Native American outreach programs.

DoD has a wealth of expertise in STEM education and provides the DoD STARBASE locations access to resources and services that most school systems cannot offer. OASD/RA provides state-of-the-art equipment and technology but military bases provide classroom space, utilities, and security. The base may also provide additional equipment, janitorial services, maintenance, travel services, and IT support. DoD STARBASE operates at the discretion of the base commanders who view this program as a venue for their military personnel to positively interface with their community. Military personnel are encouraged to volunteer their time to the program as mentors, expert speakers, tour guides, and other support activities.

Military volunteers who serve as guest lecturers explaining the use of STEM in different careers and act as base tour guides highlight the application of STEM concepts in their missions. Since DoD STARBASE locations are at all of the different branches of the military, the military volunteers provide a unique, informative, and highly varied experiences for the students. Students may discuss how chemical fires are extinguished, learn how the injured are transported, explore the cockpit of an F-18 or the interior of a C-130, or see what life is like in a submarine. The only constant is the excitement the student experience in the presence of a military volunteer.

¹ Most of the academies operate within the confines of a military base. A few operate in an affiliate site contiguous to the military installation but under the property management of the base.

THE SCHOOL DISTRICT

Students from local school districts surrounding the military installation participate in the DoD STARBASE program. In FY13, 413 school districts participated in the DoD STARBASE program to include schools from Title 1 eligible, public, private, urban, and rural districts (see Table 1).

**Table 1:
DoD STARBASE 2013 Participating School Demographics²**

School Type	Number of Schools	Percentage of Total Schools
Title 1 Eligible	951	75
Public	1067	84
Private	160	13
Urban	908	72
Rural	340	27
Total Schools	1267	100

Many elementary teachers do not have the time, educational background, and/or resources to cover STEM topics appropriately and simply cannot match the DoD STARBASE experience. School districts enter a formal agreement with the military base hosting the program which may include commitments on availability of students, targeting at-risk children, transportation, student lunches, a designated time of instruction, and providing teachers as monitors. As a result, the school's curriculum is enhanced, and students are better prepared for standardized state testing as the DoD STARBASE curriculum is aligned with national and many state standards.

THE COMMUNITY

Public and private organizations support and enhance the DoD STARBASE curriculum and operation. Community leaders may volunteer their time by serving on boards, assisting with gaining access to community facilities, and/or raising financial support. They also view the program as benefiting the community by promoting better life choices, problem-solving skills, and future job opportunities. Community leaders identify DoD STARBASE as a mechanism to promote student interest in STEM, facilitate a well-trained STEM workforce, and a STEM-literate public, thereby enhancing the future of their communities.

DoD STARBASE STUDENTS

Grade Level

The DoD STARBASE program is authorized to serve students in kindergarten through grade twelve. Because of the dramatic decline in math and science performance by U.S. students after the fourth grade, the DoD STARBASE curriculum and standards are developed for the fifth-grade level. Some locations (32 locations) receive students in other grade levels in addition to the fifth grade but most DoD STARBASE students are fifth graders (88%). The table below (see Table 2) shows the number of students at each grade level.³

² Numbers shown are for five-day programs and do not include other programs. Some schools may be counted in more than one category.

³ Evergreen STARBASE with 479 students did not record grade levels.

**Table 2:
Grade Level of FY 2013 DoD STARBASE Students**

Grade Level	Number of Students
Kindergarten through 2nd Grade	0
3rd Grade	4
4th Grade	3,885
5th Grade	61,818
6th Grade	4,346
7th Grade and Above	274

Class Size

Smaller class size is particularly important to the inquiry-based instruction used at DoD STARBASE locations. The DoDI requires two DoD STARBASE teachers per class or an average DoD STARBASE instructor to student ratio of 1:15 with 20-35 students as acceptable class sizes. The average instructor to student ratio for the FY13 program year was 1:12. The average class size for the FY13 program year was 24 students. Five locations reported averages below 20 students.⁴ The highest reported average class size was 32 students.

Racial Composition

The following table shows the racial composition of the DoD STARBASE student population over the past three years (see Table 3).⁵ The Black or African American student population displays positive growth in the program over this time period. The Asian and Hispanic or Latino student populations have remained constant with a decline in American Indian or Alaskan Native, Hawaiian Native or Pacific Islander and White populations of students.



⁴ DoD STARBASE sites in Vermont, South Dakota-NOVA, Washington D.C., and Minnesota reported averages of less than twenty students.

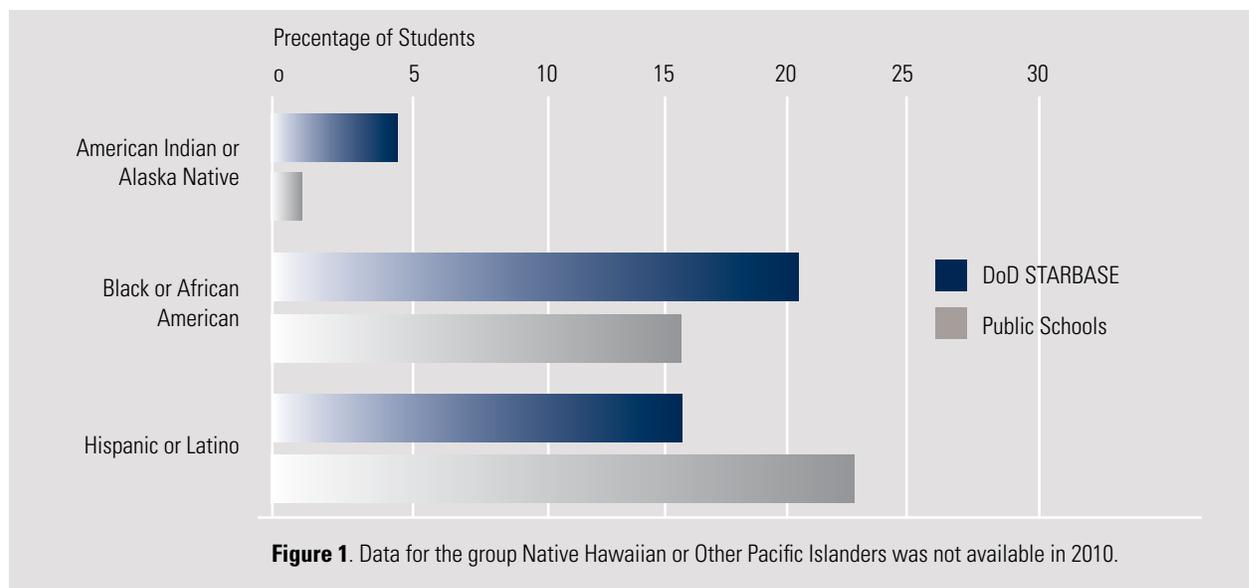
⁵ Three locations (with 3% of the total student population) did not report student race & ethnicity: Evergreen STARBASE, STARBASE Portland, and STARBASE Alpena.

Table 3:
Racial Composition of Students 2011 - 2013

Race/Ethnicity	2011	2012	2013
American Indian or Alaskan Native	6%	5%	4%
Asian	4%	4%	4%
Black or African American	18%	20%	20%
Hawaiian Native or Pacific Islander	2%	1%	1%
Hispanic or Latino	16%	16%	16%
White	51%	49%	46%
More Than One Race	4.5%	5%	6%

DoD STARBASE programs are located in areas where the need for STEM education is great. Coincidentally, these neighborhoods contain groups that have been historically underrepresented in STEM fields (Hispanics and Latinos, African Americans, American Indians, Alaska Natives, Native Hawaiians and Pacific Islanders). Figure 1 below shows the race and ethnicity of the FY13 DoD STARBASE student population compared to the race/ethnicity distribution of enrollment in public and secondary schools (pre-kindergarten through grade twelve) as reported by the U.S Department of Education.⁶ The American Indian or Alaskan Native and Black or African American populations are higher at DoD STARBASE than at U.S. public schools. Public school statistics on Hawaiian Native or Pacific Islander populations are not available but the percentage of DoD STARBASE student compared to the U.S. population of Hawaiian Native or Pacific Islanders are higher at DoD STARBASE (0.9 %) than are found in the U.S. population (0.2 %).⁷

Underrepresented Groups at DoD STARBASE & Public Schools



⁶ U.S. Department of Education, National Center for Education Statistics, Projections of Education Statistics to 2021; and Common Core of Data (CCD), "State Nonfiscal Survey of Public Elementary and Secondary Education," United States, 2010. See Digest of Education Statistics 2012, Table 44.

⁷ United States, "The United States Census Bureau, State & County QuickFacts." Accessed October 17, 2013. <http://quickfacts.census.gov/qfd/states/00000.html>.

Gender Composition

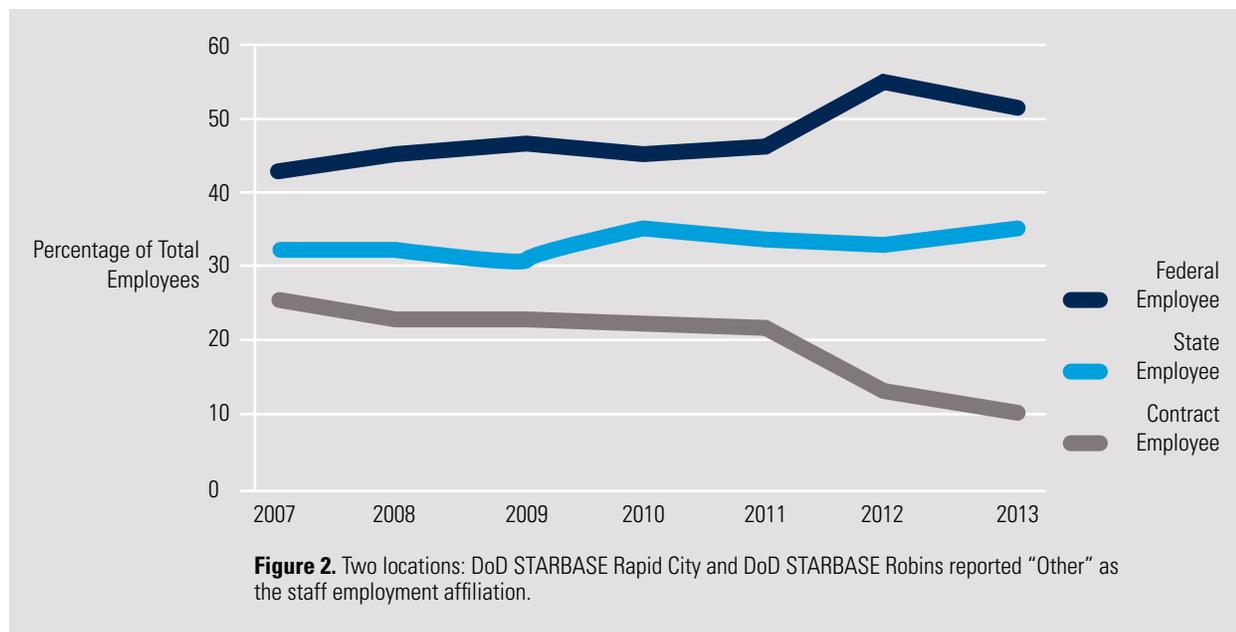
While there are a few DoD STARBASE locations where the ratio between females and males is overrepresented by one gender or the other, on the whole, the ratio is the same as in previous years with 49% female and 51% male.⁸

DoD STARBASE STAFF

Employment Affiliation

The DoDI provides general guidelines on personnel models, salary parameters, and position descriptions. The primary employment affiliations are federal, state, and contractor agencies. Employment affiliation is an important consideration for each location. The employee's affiliation determines his/her salary administration, hiring requirements, benefits, personnel policy and practices, and reporting relationships. Contractor affiliations make up 52% of the employment relationships followed by state and federal affiliations which are at 34% and 10%, respectively. Federal and state affiliations often provide retirement and health benefits, which increases a location's personnel costs and uses a greater portion of the location's operating budget. Over the past several years, the numbers of federal employees have decreased while the contract employees have increased over the same time period (see Figure 2).

2007 – 2013 Employment Affiliations



⁸ Evergreen STARBASE with 652 students did not report gender.

Staffing Model

The DoDI outlines the prototypical staffing model for a DoD STARBASE location. It includes broad guidelines on pay scale for each staff position. This model is also the basis for an annual budget for each location. The staffing model includes four full-time paid staff positions: a director, a deputy director/instructor, an instructor, and an office manager/administrative assistant. Determination of starting salaries is the prerogative of each location. The suggested pay scale equivalencies of the above positions in the DoDI are GS 12-13, GS 11-12, GS 9-11, and GS 6-9, respectively.

Of the 76 DoD STARBASE locations, 25 operate with four staff members. Many locations have adjusted the prototype staffing model. The most common changes in the staffing model are additions to instructional staff and classroom support in an effort to serve more students. Some locations restructure the administrative position to include instruction. Other locations have used the following adjustments: hire part-time instructors, establish job-sharing positions, consolidate job tasks, limit benefits, eliminate the deputy director position in favor of two instructors, eliminate the administrative position, and hire retirees who require fewer benefits. Of the 76 DoD STARBASE locations in FY13, 19 operated with more than four staff members. If a location changes its personnel model, the director must submit a written request for a waiver to OASD/RA.

Table 4 describes the FY13 staffing profile for full- and part-time personnel. "Other" positions include: DoD STARBASE 2.0 coordinators, teaching assistants, tech assistants, substitute instructors and modified deputy director/office manager. There was a small increase in the number of employees from FY12 (2.2%) with a 1.4% increase in full-time employees and a 4.8% increase in part-time employees.

**Table 4:
2013 Staffing Profile**

Position	Number of Staff	Full-Time	Part-Time
Director	62	62	0
Deputy-Director	58	57	1
Instructor	158	116	42
Office Manager	56	43	13
Other	41	10	31
Total	375	288	87

As Table 4 shows, there are fewer staff directors than DoD STARBASE locations. Some directors manage more than one location, hence the lower number of director positions.

Staff Development

DoD STARBASE instructors attend professional development to stay current in program content, methodologies, and curriculum. Eighty-eight percent of the DoD STARBASE locations offer staff development opportunities. Regional and national professional association programs, university courses, online trainings, visits to other locations, and in-service workshops are all used as professional development. While almost all instructors are experienced in math, science, and technological applications,

ongoing professional development keeps instructors up-to-date on emerging technology, curriculum, resources, and instructional modalities.

New staff members are typically trained on-the-job. New instructors, prior to teaching at DoD STARBASE, may observe experienced instructors who also serve as mentors. The director or the deputy director conducts continued mentoring. Continuing education and staff development opportunities are also available for the director. DoD STARBASE directors attend an annual workshop sponsored by the OASD/RA. The Professional and Curriculum Development Committees of DoD STARBASE design and develop national and regional workshops for delivery of computer aided design (CAD) software and updates to the DoD STARBASE curriculum.

In addition to staff professional development, many DoD STARBASE locations provide resources and training to local teachers. Of the 76 locations, 70 reported they provide additional curriculum materials to schools/teachers. Almost half (35 locations) provide training to local teachers and 56% have relationships with nearby teacher colleges or training programs where student teachers may obtain practicum hours at DoD STARBASE. Many teachers (68%) may use this training towards their certification requirements.

Staff Changes and Departures

There were 124 staff departures out of 375 staff positions in FY13. The majority (22%) of the changes were at the instructor level. Director positions were the next highest with a 19% turnover rate followed by deputy directors and office managers at 13% and 10% turnover respectively. The overall turnover rate in FY13 was 33%, which has increased significantly as DoD STARBASE has always seen turnover rates below 20% with an average of 14% over the past nine years (see Table 5). Of those staff members who left the program, 26% indicated that better opportunities were the reason for their decision to leave DoD STARBASE while 25% cited a critical event impacted their decision to leave.

Of the departing employees, 36 (29%) resigned in the last six months of the fiscal year. This large number of employees leaving the DoD STARBASE program may be due to the realignment of federal STEM education programs and funding uncertainty that occurred last spring. In the initial cuts, DoD STARBASE was zeroed out in the president's 2014 budget proposal. The impact of the continued budget uncertainty and the subsequent government shutdown will be assessed in the DoD STARBASE FY14 Annual Report.

**Table 5:
Staff Departure Rate Over Fiscal Years 2004 - 2013**

Fiscal Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Number of Staff	238	231	233	243	267	292	285	291	367	375
Number of Departures	30	39	36	37	34	34	45	46	48	124
Turnover Rate	13%	17%	15%	15%	13%	12%	16%	16%	13%	33%

VOLUNTEERS

Volunteers are an essential participant group in the DoD STARBASE program. They serve as presenters, board members, advisors, tour guides, instructor aids, and a wide variety of daily support services. Volunteers include military personnel, teachers, parents, and community leaders. All locations reported using volunteers.

The DoD STARBASE locations documented a total of 10,323 volunteers who contributed a total of 106,399 hours to the program (see Table 6). As part of the objectives outlined under Goal 1 of the DoD STEM Education and Outreach Strategic Plan, military personnel are encouraged to volunteer their time to the program as mentors, expert speakers, tour guides, and other support activities. Military personnel account for the greatest amount of volunteers followed by parents and teachers.

**Table 6:
2013 Volunteer Participation**

	Volunteers	Hours
Military	3,807	24,000
Teachers	1,784	39,164
Parents	3,736	34,529
Other ⁹	996	8,706

THE DoD STARBASE CURRICULUM

Today's DoD STARBASE STEM curriculum is standardized, cutting-edge, research-based instruction that meets national educational standards and ensures a qualitative assessment of curriculum outcomes. Curriculum development is aligned with both the DoD STEM Education and Outreach Strategic goal 1 and the Federal STEM Education 5-year Strategic Plan as an Engagement Investment. It also supports the federal STEM education goal to Improve STEM Instruction. As such, the DoD STARBASE curriculum is designed to increase the students' involvement and interest in STEM activities, enhance their understanding of the role that STEM literacy plays in their lives, strengthen potential for future careers, and make the pursuit of STEM activities more attractive and accessible. It also contains the presentation of accurate scientific information which promotes the development of STEM skills, knowledge, and practices thereby supporting the federal goals of a learning investment.

The 37 learning objectives are clearly outlined for each of the STEM categories which are consistent with national education standards. The DoD STARBASE curriculum provides students the opportunity to engage in authentic scientific inquiries which allow the participants to learn through experiential "hands-on, minds-on" based activities. For example, while studying the engineering design process, students design and create items with 3-D computer-assisted technology. The student summative assessment tool is applied pre- and post-program to determine if the learning objectives have been met.

⁹ Other volunteers include STEM groups, firefighters, board members, etc.

There are four basic types of lesson plans that are used to teach DoD STARBASE learning objectives:

1. Parent lesson plans provide the introductory background, instructional strategies and materials required to teach the overall concepts of the curriculum objective. These are shorter in length and are always used in conjunction with lesson plan appendices.
2. Appendix lesson plans offer a choice of activities that provide students “hands-on, minds-on” opportunities to understand the introductory material presented in the parent lesson plan. When an instructor is establishing his/her teaching criteria, he/she will use the parent lesson plan and then choose one of the approved appendices to complete the lesson. This allows the DoD STARBASE instructor to differentiate his/her approach to teaching the learning objective.
3. Activity Station lesson plans are intended to give students multiple activities to strengthen their understanding of the learning objective. These inquiry-based stations are generally short, and in most cases, a number of stations are taught in conjunction related to one curriculum segment. For example, a number of activity station lesson plans are in the final stages of development to support teaching Bernoulli’s Principles where one investigation of these principles might not be enough to ensure a higher level of understanding and application.
4. Stand-Alone lesson plans are complete, self-contained documents that fully address the stated components of the curriculum objective. They contain the necessary background information and instructional guidance and support criteria to meet the requirements for the objective.

This progressive curriculum is designed for DoD STARBASE students by a highly-educated DoD STARBASE staff. Ideas for new lesson plans are solicited from the DoD STARBASE directors and are then vetted by a curriculum committee that is comprised of experienced DoD STARBASE staff members. Lesson plans are adopted using a peer-review process which utilizes the expertise of the DoD STARBASE staff who field-test the proposed activities to further improve the pedagogy and delivery methodology.

This rigorous process expands and enhances the DoD STARBASE curriculum offerings. DoD STARBASE directors and instructors may choose from multiple approved lesson plans to teach the required 37 objectives.¹⁰ Directors are asked to create a schedule outlining the lessons they have chosen to teach. Although the focus is on using the approved lessons to teach the required objectives, the schedule also includes any time spent on academy management, student breaks, lunch, and graduation to give an accurate portrayal of how students spend their days at each DoD STARBASE location.

Curriculum schedules are submitted annually with the Directors’ Questionnaire and during visitations by the evaluation team. Following the standardized curriculum and/or creating a curriculum schedule has proven to be a challenge for some DoD STARBASE locations. Although directors may receive assistance from the evaluation team and/or the curriculum team, 19 locations submitted incomplete curriculum schedules while many had to revise their schedule at least once to meet the required format.

CHALLENGES TO PROGRAM GROWTH

Up to the 2012-13 program year, DoD STARBASE experienced increases in the number of academies while also creating program upgrades in content, applications, operational efficiencies and curriculum STEM enhancements. In addition, there has been an aggressive expansion of STEM linkages with community and school STEM program collaborations to further the development of student skills and abilities beyond the DoD STARBASE experience. One of these initiatives is DoD STARBASE 2.0 which is a

¹⁰ Currently there are 53 available lessons in addition to PTC.

mentoring collaboration with the school systems in an after-school venture to enhance the value of STEM skills and problem-solving applications. This has proved to be an effective downstream activity that operates within school facilities with school personnel and community volunteers. The training of program personnel and volunteers on program installation, program applications, operations and scheduling is provided by DoD STARBASE personnel. As the program progresses and the personnel are acclimated to the program applications, the continued management support to sustain the program is transferred to the school system. DoD provides ad hoc support and monitoring, when requested, after the parties agree that it is an effective operation. This program has demonstrated, in its early stages, the ability to be independent and effectively sustainable by the schools. The validation of that objective will be closely monitored by DoD STARBASE.

Additional activities to promote STEM linkages with community and national programs are being pursued by several academies that have attained a Level II Academy Performance status (see Program Oversight Level II requirements). These initiatives to promote collaborative and quasi-partnerships with other agencies are only pursued after a thorough vetting of each program to determine its fit in further developing the skills and abilities of the students in downstream activities. The range of support and promotion of those collaborations is dependent on the resources and capabilities of each. A Memorandum of Understanding (MOU) can be established and agreed upon by the participants to further the objective of student STEM development. These ventures were to be validated and assessed this year but continuation was delayed pending resolution of the programs status. Confirmation of progress in these areas can be obtained in next years' assessment. The academies that have moved into these collaborations had to conduct a complete inventory of community STEM programs noting their capabilities, evaluating their fit in furthering the students' abilities in STEM, and determining their willingness and capability in forming a partnership. In short, much progress and work has been accomplished in STEM program outreach and attention should be placed on retaining and documenting that which has been obtained and is now in place. The DoD STARBASE Visitation Reports on each academy visitation are an excellent resource in the documentation of those ventures and the current status of the relationships.

Level II also requires a Public Relations Plan for each academy. This requirement is essential for outreach and linkage activities that are related to STEM collaborations. Each academy must identify what public relations resources are currently being utilized, the form of activity, and audiences reached. The basic outline of the plan must expand this activity in building a network of potential linkages and how they would be used in accomplishing program outreach and STEM initiatives as well as identifying activities to be pursued and in what form. A clearly defined public relations set of objectives needs to be established outlining all collaborations, oversight procedures defined, sponsor clearances established, role responsibilities of each party articulated, and the parties involved. Evaluation of the Public Relations Plan will also be accomplished during site visits.

At present, about two-thirds of the academies are near to Level II status or will have completed that capability at the time of this report's publication. Site visitations indicated that about a third of the academies have completed all Level II requirements and are already working on Level III activities. Because of variances in academy resource capabilities, it is estimated that about a third of those locations are challenged in obtaining Level III capability; another third should obtain Level III status in the near future; and the remaining third would require building their capabilities before they can put that potential into a strategic plan in the next two to three years.

The validation by the assessment team should verify that status this coming year once visitations are resumed. The entry into collaborations requires a very careful review and assessment of the program participants and a careful structuring of the responsibilities of each party. Checklists, protocols and support, as well as periodic review, are essential in their success. Sustainability of the programs requires ongoing monitoring, scheduling, and assessment. Those attributes are part of the strategic initiatives of collaborations, including the DoD STARBASE 2.0 ventures with the schools. Some attention to how these relationships can be retained and built upon is the key challenge for the next program year.

THE DoD STARBASE 2.0 PROGRAM ELEMENTS

DoD STARBASE 2.0 is a STEM-based after-school mentoring program that is based at a collaborating school system. The objective is to serve students at other grade levels in the STEM areas beyond their initial DoD STARBASE experience. The program was introduced in 2010 and expanded to a dozen sites during the 2011-12 program year. In FY13, 25 DoD STARBASE locations reported coordinating a total of 42 DoD STARBASE 2.0 programs. Directors of these 25 locations were surveyed to obtain data on program requirements, participants, curriculum, staff, and funding for the DoD STARBASE 2.0 program.

Program Requirements

DoD STARBASE 2.0 maintains a unique school-based after-school program that targets at-risk sixth to eighth graders. The program takes place in partnering schools that have expressed the desire for additional DoD STARBASE program resources. As with other school-based after-school mentoring programs, DoD STARBASE 2.0 is highly structured and intends to help support school goals, provide safe environments for students, and improve student-teacher relationships while empowering schools through student referrals. Basic program requirements are outlined in the DoD STARBASE 2.0 Program Guide. The guide lists expectations for program basics, the partnering school, participant eligibility, and the STEM Mentor Coordinator position. Compliance on several of the basic requirements are given below (see Table 7).

**Table 7:
Locations Meeting Basic Requirements**

Basic Requirement	Percentage of Locations Meeting Requirement ¹¹
DoD STARBASE 2.0 meetings are held at a school	96
There is ample space for meetings	96
Meetings are held after school hours	100
Parking is provided for mentors	100
A nutritional snack is provided for the students	96
The students are in 6th, 7th and/or 8th grades	96

¹¹ The STARBASE Oklahoma - Fort Sill program does not meet at a school. STARBASE - Atlantis San Diego requires more meeting space. STARBASE Martinsburg does not provide a snack. STARBASE Minnesota participants are in grades four and five.

Participants

In FY13, 34 districts and 45 schools partnered with DoD STARBASE to operate a 2.0 program. With the exception of the Army and Marine Corps, DoD STARBASE 2.0 programs are sponsored by all military affiliations (see Table 8). The greatest numbers of programs (26 programs) are sponsored by the Air National Guard where the majority of the DoD STARBASE programs are also located (35 DoD STARBASE locations).

**Table 8:
DoD STARBASE 2.0 Programs by Military Affiliation**

Service Arm	Number of 2.0 Programs
Air Force	5
Air National Guard	26
Air Force Reserve	7
Army	0
Army National Guard	2
Marine Corp	0
Navy	2
Total	42

In FY13, the DoD STARBASE 2.0 program began with 924 student participants and finished with 747 students. The average retention rate is 89%. Comments from DoD STARBASE Directors indicate that students may have left the program due to scheduling and transportation issues.

Many of the DoD STARBASE 2.0 students in FY13 were former DoD STARBASE students (67%). Both females (38%) and males (62%) attended the program. The average class size in FY13 was 25 students, with a 1:3 mentor to student ratio. The students are mostly sixth and seventh graders (48% and 31%, respectively) although some are from other grades (see Table 9).

**Table 9:
Grade Level of Participating Students**

Grade Level	Percentage of Students
4th Grade	3.93
5th Grade	2.38
6th Grade	42.86
7th Grade	27.74
8th Grade	22.86
9th Grade	0.24

Figure 3 below shows the racial composition of the FY13 DoD STARBASE 2.0 students. Although this program is strictly a volunteer program, all groups of students are represented. Some groups (American Indian or Alaska Native, and Black or African American) are in higher concentration than reported by public school enrollment.¹² Although enrollment data is not available for the Native Hawaiian or Other Pacific Islander group, the population of this group is greater at DoD STARBASE 2.0 than in the U.S. population in general at 0.34% compared to the U.S. census data of 0.2%.¹³ The higher participation of these groups may be due to the positive experience the students encountered at DoD STARBASE as indicated by attitudinal tests (see attitudinal test results).

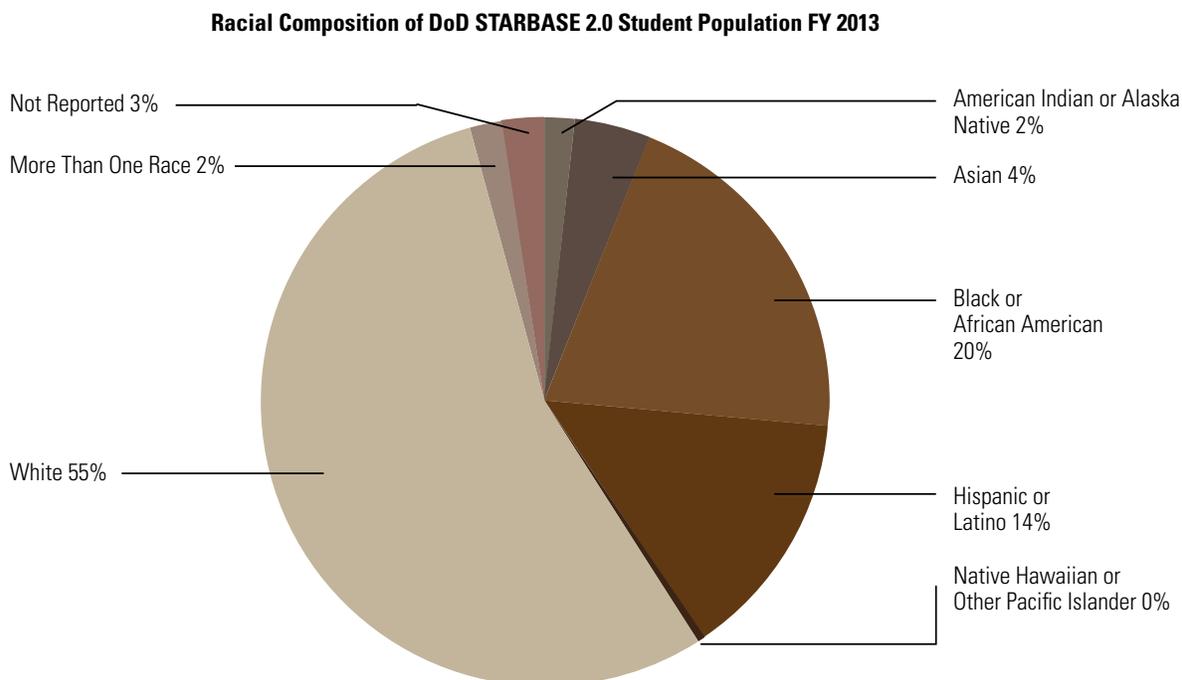


Figure 3. Groups historically underrepresented in STEM fields are: Hispanics and Latinos, African Americans, American Indians, Alaska Natives, Native Hawaiians and Pacific Islanders.

Curriculum

Over the course of five months, DoD STARBASE 2.0 students work on a team project at their school with a STEM mentor one afternoon per week. The outcomes for students participating in DoD STARBASE 2.0 are as follows:

- Increased STEM interest and knowledge
- Reduced high-risk behavior
- Increased engagement with school
- Increased career awareness

Program locations use a variety of different team projects to achieve these goals. STEM projects include: Scalextrics, robotics, rocketry, engineering, physics, FIRST LEGO League, solar cars, chemistry, technology, and aerospace. Of these topics, robotics is the most widely used STEM project followed by Scalextrics, rocketry, engineering and FIRST LEGO League.

¹² U.S. Department of Education, National Center for Education Statistics, Projections of Education Statistics to 2021; and Common Core of Data (CCD), "State Nonfiscal Survey of Public Elementary and Secondary Education," United States, 2010. See Digest of Education Statistics 2012, Table 44.

¹³ United States, "The United States Census Bureau, State & County QuickFacts." Accessed October 17, 2013. <http://quickfacts.census.gov/qfd/states/00000.html>.

Staff

The DoD STARBASE 2.0 program is primarily a volunteer program. The volunteer STEM mentors and volunteer classroom teacher are all coordinated by a designated STEM Mentor Coordinator. This is typically a part-time position and many programs choose to hire the coordinator position in-house as their existing DoD STARBASE director, deputy director, program instructor, or office manager takes on the additional responsibilities of the STEM Mentor Coordinator position. If hiring in-house is not possible, candidates are recruited from the partnering school or community. The responsibilities of the STEM Mentor Coordinator include:

- Program marketing
- Managing relationships with schools
- Recruiting and screening program volunteers
- Managing volunteer STEM mentors
- Coordinating and delivering volunteer training
- Tracking data
- Supporting and motivating program volunteers

These tasks play an invaluable role in the success of DoD STARBASE 2.0. Of the 25 locations that support a DoD STARBASE 2.0 program, 17 have a designated STEM Mentor Coordinator.

The ideal STEM mentor team consists of a lead STEM mentor, representatives from local STEM industries, college students, and members of the military. To serve as a DoD STARBASE 2.0 STEM mentor, volunteers must meet the following minimum requirements:

- Be at least 18 years of age
- Successfully pass mentor screening
- Volunteer approximately six hours per month through the school year
- Participate in STEM mentor training

In FY13 most programs (88%) reported their STEM mentors received two to four hours of training.

Funding

The DoD STARBASE 2.0 programs operate through a combination of federal and private funds. The majority (60%) of the 25 locations receives funding from both sources and 32% receive solely federal funds. Two programs reported that they do not receive any additional funds and use existing DoD STARBASE funds to operate a 2.0 program.¹⁴

¹⁴ Wyoming STARBASE Academy and STARBASE Minnesota do not receive additional funding for a DoD STARBASE 2.0 program.

PROGRAM OVERSIGHT

Compliance

The Office of the Assistant Secretary of Defense for Reserve Affairs (OASD/RA) has the overall responsibility for the management of the DoD STARBASE program. The Department of Defense Instruction (DoDI) 1025.7 provides the policies and procedures that guide the current DoD STARBASE program locations. The DoDI directs the locations on operational requirements such as the number of classes, classroom hours, student numbers, target student population, participant eligibility, program site location for instruction, core curriculum, fiscal and property audits and frequency, and reporting requirements.

Compliance Procedures

A compliance program was designed and developed to ensure that the DoD STARBASE locations adhere to the DoDI requirements as well as administrative directions and reporting requirements. The program is reviewed each year. Over the past several years, DoD STARBASE locations have been evaluated using a performance assessment system that is composed of three progressive levels of program and organizational performance. Each level has a prescribed set of activities that range from obtaining adherence to the DoDI requirements that guide basic operating procedures and full installation of program delivery (Level I); to obtaining desirable operating applications, key planning strategies, and managerial efficiencies (Level II); and lastly, to exhibit advanced strategic program linkages and downstream relationships for promoting student skills and abilities in STEM-related activities (Level III). The sections below outline details and criteria of the performance assessment system.

For each DoD STARBASE location, the assessment system not only requires the attainment of each of the objectives at each level but also their maintenance and sustainability over time to retain their status level. Performance level is determined through site visitations, academy reporting requirements, and periodic surveys. Shortfalls in required activities are usually handled through a corrective action schedule agreed upon by the participants and OASD/RA to successfully obtain the required performance level under review. In most cases, these corrective action plans are short-term and successfully obtained. The attainment of the performance level under review is held in abeyance until the corrective requirements are completed and verified.

The assessment system also requires that the academy can only advance to higher levels of performance after it successfully attains a positive assessment at the prior level (i.e., an academy must meet all required activities at Level I before it can claim any activities at Level II and so on). While an academy program could move towards and complete an activity at another level, the program would not be reviewed for acceptance until the prior level had been successfully achieved.

The successful attainment of these levels of performance provides OASD/RA and the military service representatives a way to determine whether an academy may be selected and/or considered for special programs that will be made available to locations at the required level. The system also distinguishes and identifies those locations that operate at higher levels of performance to their sponsors and participant groups, the local community, the target group of students, the school systems, and military sponsors.

At present, almost all academies in this program year, including start-up academies, have attained Level I status. There are a few exceptions that require short-term corrective action that is attainable within a few months after the reporting time. Almost two-thirds of the academies are near to completing or have completed Level II. Each requires verification and documentation through the visitation process. The locations that have completed Level II, a little less than a third, are in the process of developing strategic initiatives for review and approval that will lead them to Level III status. Several of those academies have already built downstream relationships with external programs for the promotion of student STEM activities.

Performance Level Descriptions

Level I: The Basic/Fully-Operating Location

Level I criteria includes all DoDI requirements and operating guidelines stipulated by OASD/RA. This incorporates required program activities such as student numbers, classroom hours, installation of core curriculum content, military-base program delivery, emphasis on target student population, required documentation (i.e., MOU's, student waivers, etc.), reporting requirements, and a number of administrative responsibilities such as written waivers, disability building accessibility, testing samples, teacher assessment, etc.

Level II: The Advanced-Performing Location

The second level of performance requires attainment of Level I status and success with a set of defined operational, planning and managerial upgrades, fiscal program operations, and the successful installation and maintenance of DoD STARBASE 2.0. These are organizational and administrative requirements set up by OASD/RA to obtain program delivery efficiencies and operational effectiveness.

These requirements include, but are not exclusive to, participant group involvement; program enhancements; STEM program inventories and an assessment of potential fit that enhances student participation in further skill development; budget management planning and review; public relation planning; personnel management plans; equipment status assessment; "children-at-risk" review; staff development/personnel plans; transfer of leadership plans (i.e., succession plans); management resource manuals; and several other considerations that upgrade program management and operating performance.

Level III: A High-Performing Location

Academies must achieve Level I and II status levels before they can be assessed at Level III. Level III requires the development of an activity, or set of activities, that significantly advances the DoD STARBASE program vision and mission.

Operational and program enhancements, higher-level problem-solving techniques, time-sensitive improvements, and efficiencies in operations could be included in the assessment of Level III activities if they are of significant magnitude. Activities that have highest priority are those that promote the welfare and STEM skill/abilities of the student population, demonstrate program sustainability, provide transportability to other locations, and have the ability to be installed and operable within an 18 to 24 month period. The validation of the program's installation and sustainability, as well as the operational potential for transportability, would be reviewed by the evaluation team for approval by OASD/RA.

Each of the above level criteria are reviewed on an ongoing basis for location-wide application, appropriate-level designation, the typical period in which they can be successfully attained, the equity in installation given local resources and capabilities, the level of magnitude in affecting performance, and the ability for downstream sustainability. As collaborations and newly established operations are introduced, the academy performance level review process is expected to be refined and expanded.

Compliance Adherence

Compliance visitations under DoDI are conducted at least once every three years for each DoD STARBASE location. The visitation involves a two-to-five-day review of documents, audits, fiscal reports, classroom observation, and structured interviews with staff, school administration, sponsor groups, not-for-profit board members (if appropriate), and members from other participant

groups. At the conclusion of the visit, a meeting is conducted with the base commander and DoD STARBASE director to review the preliminary results of the compliance visit and to discuss if any corrective action is required. A plan-of-action is developed and a schedule for completion is mutually agreed upon. A written report is then sent to the OASD/RA program manager upon completion of the visitation. OASD/RA may share the key points of the report with the director and/or the base commander. A written summary of progress made by the DoD STARBASE director is sent to OASD/RA as corrective tasks are obtained, and copies may be forwarded to sponsors and military service representatives. Occasionally, a follow-up visitation is scheduled to document that corrective action has been taken.

Newly installed locations may receive an orientation visitation to outline DoDI requirements. The director and staff are briefed and provided information and materials on best practices, testing administration, reporting schedules, documentation, performance expectations, and protocols. This time is also used to answer any questions and concerns the staff and sponsors may have.

The non-compliant activities most commonly noted are primarily technical in nature. They include lack of timely responses to periodic and required reporting schedules (i.e. annual Directors' Report); lack of local financial and property audits within the required three year period and/or documented requests by the location to have them conducted by the appropriate local base agency; incomplete documentation and/or lack of written request for modification to OASD/RA for exceptions or revisions on DoDI requirements; and incomplete implementation of the core curriculum. As previously indicated, given the number and scope of activities, the number of incidents is minor and involves only a few locations. Overall, most locations met compliance requirements. A small number of locations face challenges in obtaining student numbers, hours of instruction, audit schedules and completions, and meeting reporting requirements in a timely fashion.

FISCAL ANALYSIS

A Congressional Appropriation to the Department of Defense (DoD) funds the operation of DoD STARBASE. The Office of the Assistant Secretary of Defense for Reserve Affairs (OASD/RA) oversees the program and distributes the funds. In FY13, the total program budget was \$24,924,000. OASD/RA allocated \$24,275,000 for location operations, which is the amount used for the analysis in this report. The remainder of the appropriation was used for evaluation/assessment activities, staff development and training programs, and overall program design and development activities.

In FY13, the average operating cost per location was \$319,408 (see Table 10). This is a 2.9% increase from FY12 and a 17 % increase from the average cost per location in FY04. The average cost per student decreased to \$343 this year. This is a 10% decrease from the FY12 average cost per student and a 17% increase from the average cost per student in FY04. If students who attended summer and/or supplemental programs are included, the average cost per student is \$315. Supplemental programs typically occur during the summer months, after DoDI requirements have been met and vary in length and curriculum. Of the 76 DoD STARBASE locations, 53 offered a supplemental program in FY13.

**Table 10:
Cost Per Location & Student 2004 - 2013**

Year	Average Cost Per Location	Average Cost Per Student
FY04	\$272,469	\$292
FY05	\$273,040	\$262
FY06	\$293,584	\$293
FY07	\$301,773	\$299
FY08	\$310,895	\$328
FY09	\$317,638	\$302
FY10	\$320,304	\$299
FY11	\$331,482	\$308
FY12	\$310,500	\$382 ¹⁵
FY13	\$319,408	\$343

Operational costs differ among DoD STARBASE locations. Overall expenditures of DoD funds allocated to each program site are shown in Figure 4. Staff costs range from 57% to 100% of the location's budget which, on average, account for 84% of the site budget followed by equipment (6%) and supplies (4%).

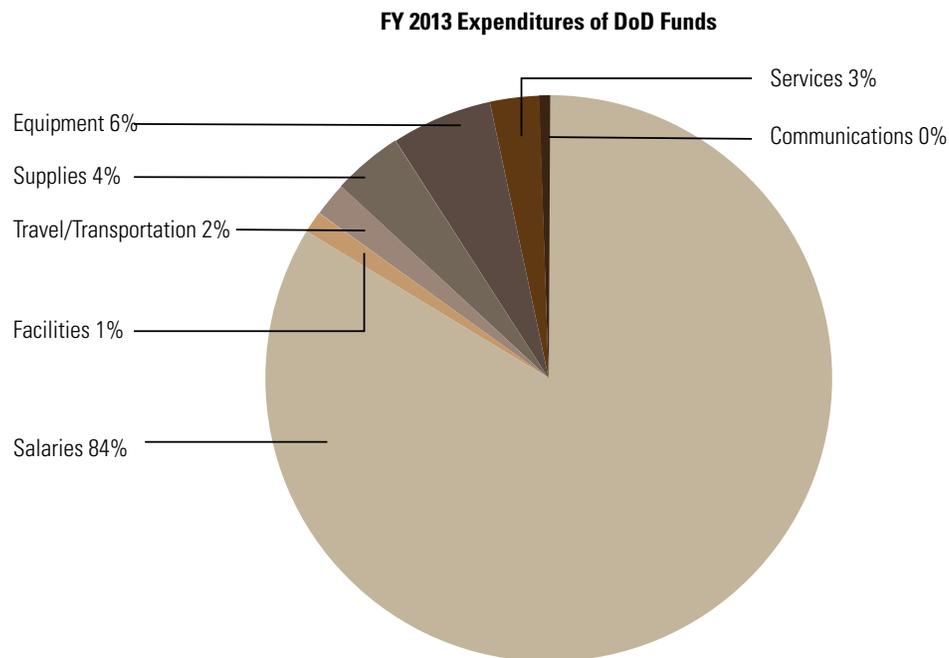


Figure 4.

¹⁵ Eleven of the FY12 DoD STARBASE locations were in various stages of installation/transition and did not receive a full schedule of students or have a full staff for portions of the fiscal year. This resulted in lower operational costs and a higher cost per student in FY12.

Several factors contribute to the cost variances, including geographic location, outreach programs, and salary scales. OASD/RA reviews each location's budget to maintain an equitable distribution of funds. Twenty-three of the 76 locations obtained supplemental funding from non-DoD sources. The total raised in supplemental funding was \$1,117,364 (see Figure 5). The average raised by locations that secured additional funding through state allocations, grants, and donations was \$35,780. The total monies received from these sources were \$208,977, \$502,785, and \$75,392, respectively. Academies use supplemental funding towards staff salaries (\$343,763); Program/Curriculum Development (\$11,536); Facilities/Furnishings (\$16,575); Transportation/Travel (\$60,734); Supplies (\$162,938); Equipment (\$20,626); Services (\$81,821); Communications/Outreach (\$33,112); and other expenditures (\$46,656).

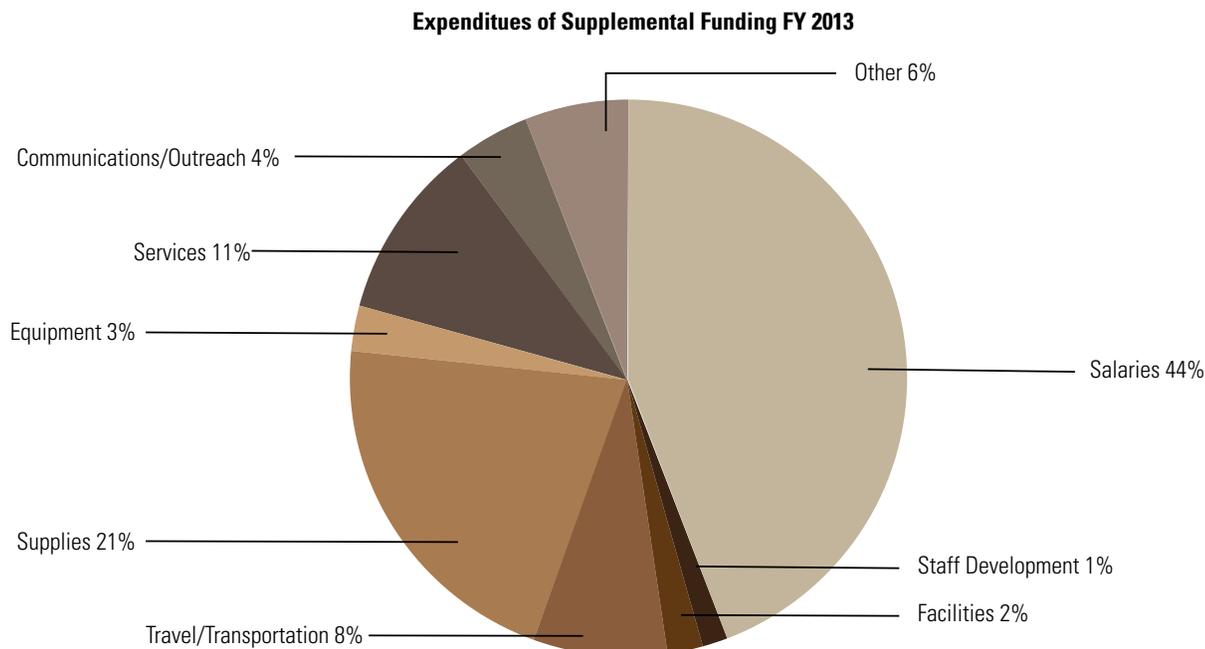


Figure 5.

STUDENT ASSESSMENT

Overview

For the better part of the two decades that DoD STARBASE has been in operation, DoD has been the prime sponsor and overall manager of the program. Upon assuming their leadership responsibilities, DoD immediately implemented an annual program assessment to measure student understanding of STEM concepts and attitudes about STEM before attending the DoD STARBASE program and then again after the program was complete.

The key pre- to post-assessment areas include:

- Knowledge items assessing the science, math, engineering, and technology (STEM) curriculum.
- Attitudes toward STEM topics and careers.
- Attitudes toward military, military personnel, military locations and military careers.

Instrument Design and Review

All tests instruments, administration and data management systems are reviewed on an annual basis. The test review process considers all elements from test administration, scheduling, sample size, analytical constructs, length of tests, design of items and fit to curriculum content objectives. The latter area is by far the most critical driver of change in test construction.

Throughout the history of the DoD STARBASE program there have been incremental changes in the core curriculum but none more dramatic than the changes made during the 2009 – 2010 program year. The test revisions delivered in 2012 reflect these changes both in the knowledge and the attitudinal test application. Each item was subjected to item analysis, feedback from instructors and subject matter experts.

Considerations and guidelines in the test development review process include:

- Continuous alignment of the assessment with the DoD STARBASE learning objectives.
- Balancing test item difficulty with baseline school performance objectives and their fit at program entry to allow for the potential for post-program shifts assessments (gap scores).
- Reducing the number of “knowledge only” items and increase items that require higher-level thinking.
- Analysis of the reading level of all test items.
- Identifying test items for trend analysis and consistency in construct retention.
- Refining and upgrading the test administration process to increase the reliability and validity of the test administration process.

The revisions in 2012 became the pilot study for the student assessment delivered in 2012. There were several items that carried over from previous years and are useful as historical reference points in gauging results. This year’s student assessment instrument involved 25 knowledge and 31 attitudinal items. There were five new knowledge items and partial revisions in other items. All items, historical or revised, are maintained in an item database for future considerations and analytical applications.

Similar to previous years, the 2013 assessment consists of two separate instruments combined into one. The first instrument is a 30-item multiple-choice assessment (25 scored items and five piloted items) that measures knowledge focused on the core STEM curriculum. Students select the correct response out of four response options. The second instrument is a 31-item survey

measuring various aspects of students' attitudes and opinions that impact areas such as academic success and career goals. Students select their response based on a seven-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (7). The results for both the knowledge assessment and attitudinal survey are then summarized based on item content areas as well as an overall score. The total score for the knowledge assessment combines the responses from the 25 core multiple-choice items. The overall score is presented as a mean score as well as a percent correct score for groups of students in the following report. In addition, the attitudinal survey combines the ratings from the 26 items administered pre-program and the 31 items administered post-program. The overall scores for the attitudinal survey are presented as mean scores for both the pre-program and the post-program analysis.

The DoD STARBASE Student Assessments were administered between February and June of 2013. The Student Assessment was administered twice to the same participating class of students (pre- and post-program) at each academy to gauge program impact. Completed questionnaires were returned to Vangent, Inc. for processing using scan form technology. The assessments were mailed directly to the DoD STARBASE academies and included the following instruction sets:

- Directors' Instructions – Overview of the DoD STARBASE evaluation components including details such as administration methodology, selection of participating classes and an answer key for the knowledge assessment.
- Administrator Instructions – Detailed instructions to the assessment coordinators including the materials needed for administration, filling out the assigned student numbers and instructions to be read during the administration of the questionnaire.

Student Demographics

The student assessment was sent to 75 academies with a response from 74 academies, a 99% academy participation rate.

Surveys were matched pre- and post-program based on unique student ID. Those with matching data for both the pre- and post-program were retained for analysis resulting in a total of 3,778 surveys (1,889 matching cases for pre- and post-program assessments). The number of matched surveys is much higher than last year's numbers (578 more matched surveys) due to the adherence of tighter administration practices by the academy personnel in checking completed surveys and reducing incomplete responses.

The frequency and percent of DoD STARBASE students that reported belonging to the various demographic categories are presented below in Table 11. As in previous years, the DoD STARBASE student population is almost evenly split between boys and girls (48.8% and 51.1%, respectively). Most of the students were in the fifth grade (87.0%) and between 10 – 11 years old (89.4%).



**Table 11:
Demographic Profile of Student Sample**

Item	Response	Frequency	Percent
	9	43	2.3
	10	719	38.1
	11	969	51.3
AGE	12	151	8.0
	13	6	.3
	Unknown/No answer	1	.1
	2	1	.1
	3	3	.2
GRADE	4	89	4.7
	5	1644	87.0
	6	146	7.7
	7	4	.2
	8	2	.1
	boy	921	48.8
GENDER	girl	966	51.1
	Unknown/No answer	2	.1

DoD STARBASE locations throughout the United States are represented with just over half of the sample drawn about equally from the midwest (27.7%) and southeast (23.6%). The remaining students are fairly evenly split among the south (17.8%), west (16.6%), and east (14.3%). The sponsoring military branch includes six service arms. The Air National Guard is still the most represented branch (48.8%). This year the Marine Corps is the least represented branch (1.6%). Forty-one DoD STARBASE programs (1,052 students) brought students in one day per week versus the students coming to the program every day within a one-week time span (25 academies including 641 students). Five of the 74 academies (7.8%) were aware of a testing accommodation for at least one student entering the DoD STARBASE program. This indicates that the program is accessible to students that may need special accommodations during the program sessions (see Table 12).

**Table 12:
Demographic Profile of Academy Sample**

Item	Response	Class Frequency	Student Frequency	Percent
Region	East	10	270	14.3
	Midwest	19	524	27.7
	South	14	336	17.8
	Southeast	17	446	23.6
	West	14	313	16.6
Sponsoring Branch	Air Force	7	160	8.5
	Air Force Reserve	4	105	5.6
	Air National Guard	36	921	48.8
	Army/Army National Guard	11	294	15.6
	Marine Corps	1	30	1.6
	Navy	15	379	20.1
Class Schedule	Consecutive	25	641	33.9
	One per week	41	1052	55.7
	Other schedule	8	196	10.4
Accommodations	Not aware of testing accommodation	67	1696	89.8
	Aware of testing accommodation	5	147	7.8
	Unknown/No answer	2	46	2.4

Students' previous exposure to the military and the DoD STARBASE program are presented below in Table 13. Familiarity with the military and/or DoD STARBASE was reviewed to gauge experience with the military in general and with DoD STARBASE in particular. Most of the students knew someone who went through DoD STARBASE (67.0%), had heard about DoD STARBASE (62.3%), or had met military personnel before coming to the DoD STARBASE program (59.6%).

**Table 13:
Students' Prior Experience with Military and DoD STARBASE**

Item	Response	Frequency	Percent
I have met military people before coming to DoD STARBASE	No	757	40.1
	Yes	1126	59.6
	Unknown/No answer	6	.3
I heard about DoD STARBASE before I knew I was coming here	No	707	37.4
	Yes	1176	62.3
	Unknown/No answer	6	.3
I know someone that went through DoD STARBASE before me	No	615	32.6
	Yes	1265	67.0
	Unknown/No answer	9	.5

Student Knowledge and Skills Assessment

Table 14 presents each knowledge item into the specific curriculum area it measures.

**Table 14:
Scored and Pilot Knowledge Items by Curriculum Area**

Chemistry Science (E3.1.1.2)	
Item #	Atmospheric Properties
5	Which bar chart represents the correct composition of air?
19	Based on the elevation shown in the table and diagram, in which city would the atmosphere be the least dense?
30	On hot days balloons seem to inflate even though no additional air is added. Why does this happen?
Item #	Building Blocks
10	Bonding the elements of hydrogen and oxygen forms water (H ₂ O). What does this bonded substance represent?
3 (pilot item)	Some characteristics of one cup of water (H ₂ O) are given in the table below. If temperature and altitude stay the same, which characteristic will change when you compare a cup of water to a tub of water?
Item #	Physical and Chemical Changes
4	Which of the following is an example of physical change?
18	In what state of matter do molecules have the least amount of kinetic energy or motion?
Engineering (E3.1.1.4)	
Item #	3-D Computer-Aided Design
22	Which of the following statements about 3-D computer-aided design is true?
28	Select the set of lines that are perpendicular.

Item #	Engineering Design Process
8	Why are prototypes a key part of the engineering design process?
27	You have produced a new candy bar with all of your favorite ingredients. You have asked your family and friends to try your new candy bar. What step of the engineering design process (EDP) are you completing?

Mathematics Operations & Applications (E3.1.1.5)

Item #	Data Analysis
13	An experiment calls for 150 milliliters of water. If you are performing the experiment three times, what is the total amount of water you will need?
24	An engineer is testing how well three different towels absorb liquids over three trials. The data for the experiment is in the table below. Select the graph that correctly represents the data of the experiment.

Item #	Geometry
12	In the graph above, find the letter that is at the coordinates (3,-2). Is it A, B, C, or D?
15	On the graph above, the distance between each line and the next line is one kilometer. You start out at coordinates (-1,3) and walk two kilometers north, then 1 kilometer west and stop for lunch. After lunch, you head to your friend's house which is 5 kilometers to the east. Where does your friend live?

Item #	Measurement
11	When measuring the amount of liquid in a bottle of water, what unit of measurement is most commonly used?
23 (pilot item)	Based on the boxes above, which container will hold the most amount of water when completely filled?
26 (pilot item)	Of the following, which tool would be most appropriate to measure volume?

Item #	Numbers and Number Relationships
17	Which of the following is typically measured in nanometers?
29	What is the decimal equivalent to 89%

Physics (E3.1.1.1)

Item #	Fluid Mechanics & Aerodynamics
2	Two boats are lying close by each other and passing cargo from one boat to the other. Based on Bernoulli's Principle, what happens if water is forced between the two boats?
14	One reason an airplane is able to gain lift is because the air moving across the top of the wing...

Item #	Newton's Laws of Motion
1	Two rockets are launched using the same amount of force. One rocket is heavier than the other. Which rocket will go higher?
16	Two trains are getting ready to race. The mass of train A is greater than the mass of train B. The trains begin to move down the tracks but neither train can get ahead of the other. What can you conclude?
25	What scientific law makes it important to wear a seat belt?

Technology (E3.1.1.3)

Item #	Innovations
6	What conclusion can be drawn from the chart to the left?

20	Which statement below is NOT true for these three technologies? G.P.S. technology Remote imagery Electronic/computerized maps
9 (pilot item)	You are working on a new product to melt snow and ice on walkways. You test the product by measuring the time it takes for the area to become safe for walking. What conclusion would you make based on the following results?
Item #	Navigation and Mapping
21	If you were asked to draw a latitude line and a longitude line on the above map, which of the arrow symbols below would point in the same direction as the latitude line?
7 (pilot item)	Which of the following would be a good reason to use latitude and longitude coordinates?

Pre/Post-Knowledge Assessment Mean Scores by Curriculum Areas

The 25 core items of the knowledge assessment are categorized according to the DoD STARBASE curriculum area they most closely measure in order to calculate scale scores. Table 15 shows the pre- and post-program assessment mean score by curriculum area (sample size=1,889). All item categories (e.g., chemistry sciences and physics) show significant improvement post-program as compared to responses prior to participation in DoD STARBASE. Similar to last year, the largest improvement was seen in chemistry sciences (+1.68) with a focus on atmospheric properties (+0.90). The smallest post-program increases were in the technology area (+0.42) where there were modest improvements for innovation (+0.18) and for navigation and mapping (+0.24). Technology also has fewer items than the other categories (see Table 15).



**Table 15:
Pre/Post-Knowledge Scores by Curriculum Area**

Curriculum Area	# of Items	Pre-Program Mean Score	Post-Program Mean Score*	Gap
Chemistry Sciences (Subtotal)	6	2.19	3.88	1.69
Building Blocks of Matter	1	0.43	0.71	0.28
Physical and Chemical Changes	2	0.83	1.34	0.51
Atmospheric Properties	3	0.93	1.83	0.90
Physics (Subtotal)	5	1.83	3.25	1.42
Fluid Mechanics and Aerodynamics	2	0.41	1.26	0.85
Newton's Three Laws of Motion	3	1.42	1.99	0.57
Mathematics Operations and Applications (Subtotal)	7	4.07	5.25	1.18
Data Analysis	2	1.31	1.52	0.21
Geometry	2	0.94	1.29	0.35
Measurement	1	0.72	0.85	0.13
Numbers and Number Relationships	2	1.10	1.59	0.49
Technology (Subtotal)	3	1.60	2.02	0.42
Innovation	2	1.22	1.40	0.18
Navigation and Mapping	1	0.38	0.62	0.24
Engineering: 3-D Computer-Aided Design	4	2.48	2.98	0.50
3-D Computer	2	1.16	1.41	0.25
Engineering Design Process	2	1.32	1.57	0.25
Piloted Items (Subtotal – Not included in totals)	5	2.03	2.87	0.84
New Chemistry Building Block Item	1	0.31	0.37	0.06
New Mathematics Measurement Items	2	0.70	1.10	0.40
New Technology Innovations Item	1	0.60	0.71	0.11
New Technology Navigation & Mapping Item	1	0.43	0.70	0.27

* All subtotal means are statistically significantly higher than pre-program means.

Pre-Post-Knowledge Assessment Scores

The knowledge test over the past two years has proved to be more difficult than previous years but the gap scores retain the same ratio and rankings. It is expected that the adjustments and refinements made in delivery and content will not only improve performance but also mean scores. Table 16 compares the pre-and post-program mean scores, percent correct and gap differences for the student knowledge assessment since 2002. This year, student knowledge assessment results are both positive and statistically significant. The changes in test content and format since 2011, as a result of curriculum changes and higher-level cognitive items on the test, resulted in fewer correct answers to both pre-and post-tests. However, the gap scores increased, meaning the learning instruction produced most of the differences and the statistically averaged score remained statistically significant. Gap scores have remained strong (average gain score 2002-2009 = 5.36 and average gain score 2011-2013 = 5.84). The somewhat lower scores in 2013 are partially accounted for as a function of the fewer number of test items (25) compared to previous years. The lower gap score of +5.19 is partially a reflection of this reduction.

Table 16:
Pre/Post-Knowledge Assessment Mean Total Scores and Percent Correct (2002 – 2013)

Year	2002	2003	2004	2005	2006	2007	2008	2009	2011	2012	2013
# of Items	30	30	30	30	32	30	33	33	32	30	25
Pre-Test Score	18.44 (61.5%)	19.12 (63.7%)	19.09 (63.6%)	17.81 (59.4%)	19.06 (59.6%)	19.05 (63.5%)	20.62 (62.5%)	21.15 (64.1%)	15.77 (49.3%)	14.88 (49.6%)	12.18 (48.7%)
Post-Test Score	22.67 (75.6%)	24.42 (81.4%)	24.25 (80.8%)	23.28 (77.6%)	25.40 (79.4%)	24.31 (81.0%)	26.23 (79.5%)	26.62 (80.7%)	21.53 (67.3%)	21.45 (71.5%)	17.37 (69.5%)
Gap	+4.23 (14.1%)	+5.30 (17.7%)	+5.16 (17.2%)	+5.47 (18.2%)	+6.34 (19.8%)	+5.26 (17.5%)	+5.61 (17.0%)	+5.47 (16.6%)	+5.76 (18%)	+6.57 (21.9%)	+5.19 (20.8%)

From an operational point of view it is important for instructors and instructional design personnel to understand where the students are in understanding the basic concepts taught in the program. Many of the students that participate in DoD STARBASE arrive into the program with an understanding of the basic concepts presented in the program as evidenced by the percentage of students that answered certain items correctly pre-program. Table 17 rank-orders the gap difference for each item, based on pre- to post-program percentage correct, for the past two years. The percentage of students answering an item correctly increased for all items pre- to post-program. For example, 94% of the incoming students responded correctly to a question about chart reading resulting in a small gap score improvement (2%) to the same item post-program (96%). Using this example, it is expected that most students will have smaller gap scores pre- to post-program on items measuring core concepts already taught as part of their formal school programs. Knowledge of concepts that were unknown pre-program typically had much larger increases after the program. For example, correct answers to the item asking about Bernoulli's Principle increased from 7% to 67% resulting in a 61% increase in those responding correctly pre- to post-program. Thus, while the school curriculum did provide some knowledge sophistication, the DoD STARBASE curriculum enhanced student performance on core concepts. There are several examples of these core curriculum increases in Table 17.

**Table 17:
2012 and 2013 Pre/Post-Knowledge Item Mean Percentage
Correct with Rank-Ordered Difference Post- to Pre-Program for 2013**

Knowledge Item	2012	2013		2013	% Difference (2013 Post-Pre)
	Pre-Program % Correct	Post-Program % Correct	Pre-Program % Correct	Post-Program % Correct	
2. Two boats are lying close by each other and passing cargo from one boat to the other. Based on Bernoulli's Principle, what happens if water is forced between the two boats?	7%	67%	7%	67%	61%
5. Which bar chart represents the correct composition of air?*	12%	75%	13%	71%	59%
25. What scientific law makes it important to wear a seat belt?	39%	75%	39%	75%	36%
Which of the following is typically measured in nanometers?*	40%	72%	38%	71%	34%
4. Which of the following is an example of physical change?	31%	57%	33%	61%	28%
7. Which of the following would be a good reason to use latitude and longitude coordinates? †	--	--	43%	70%	27%
10. Bonding the elements of hydrogen and oxygen forms water (H ₂ O). What does this bonded substance represent?*	39%	70%	43%	71%	27%
21. If you were asked to draw a latitude line and a longitude line on the above map, which of the arrow symbols below would point in the same direction as the latitude line?	43%	61%	38%	62%	24%
14. One reason an airplane is able to gain lift is because the air moving across the top of the wing...	33%	58%	35%	58%	23%
18. In what state of matter do molecules have the least amount of kinetic energy or motion?	46%	72%	51%	73%	23%
19. Based on the elevation shown in the table and diagram, in which city would the atmosphere be the least dense?	25%	51%	29%	51%	22%
26. Of the following, which tool would be most appropriate to measure volume? †	--	--	39%	60%	20%
12. In the graph above, find the letter that is at coordinates (3,-2). Is it A, B, C, or D? *	49%	69%	48%	67%	19%

Continued on next page

**Table 17: (Continued)
2012 and 2013 Pre/Post-Knowledge Item Mean Percentage
Correct with Rank-Ordered Difference Post- to Pre-Program for 2013**

Knowledge Item	2012	2013		2013		% Difference (2013 Post-Pre)
	Pre-Program % Correct	Post-Program % Correct	Pre-Program % Correct	Post-Program % Correct		
23. Based on the boxes above, which container will hold the most amount of water when completely filled? †	--	--	31%	50%	19%	
15. You start out at coordinates (-1,3) and walk two kilometers north, then 1 kilometer west and stop for lunch. After lunch, you head to your friend's house which is 5 kilometers to the east. Where does your friend live?	46%	63%	46%	62%	16%	
20. Which statement below is NOT true for these three technologies? G.P.S. technology, remote imagery, electronic computerized maps	22%	39%	28%	44%	16%	
24. An engineer is testing how well three different towels absorb liquids over three trials. The data for the experiment is in the table below. Select the graph that correctly represents the data of the experiment.	55%	69%	54%	69%	15%	
28. Select the set of lines that are perpendicular.	56%	72%	53%	68%	15%	
29. What is the decimal equivalent to 89%?*	87%	94%	72%	87%	15%	
27. You have produced a new candy bar with all of your favorite ingredients. You have asked your family and friends to try your new candy bar. What step of the engineering design process (EDP) are you completing?	75%	86%	76%	88%	13%	
8. Why are prototypes a key part of the engineering design process?	56%	68%	56%	69%	12%	
11. When measuring the amount of liquid in a bottle of water, which unit of measurement is most commonly used?	77%	89%	72%	85%	12%	
16. Two trains are getting ready to race. The mass of train A is greater than the mass of train B. The trains begin to move down the tracks, but neither train can get ahead of the other. What can you conclude?*	19%	38%	22%	34%	12%	
9. You are working on a new product to melt snow and ice on walkways. You test the product by measuring the time it takes for the area to become safe for walking. What conclusion would you make based on the following results? †	--	--	60%	71%	11%	

Table 17: (Continued)
2012 and 2013 Pre/Post-Knowledge Item Mean Percentage
Correct with Rank-Ordered Difference Post- to Pre-Program for 2013

Knowledge Item	2012	2013		2013	
	Pre-Program % Correct	Post-Program % Correct	Pre-Program % Correct	Post-Program % Correct	% Difference (2013 Post-Pre)
22. Which of the following statements about 3-D computer-aided design is true?	65%	76%	63%	73%	10%
1. Two rockets are launched using the same amount of force. One rocket is heavier than the other. Which rocket will go higher?	79%	92%	82%	91%	9%
30. On hot days balloons seem to inflate even though no additional air is added. Why does this happen? ‡	57%	60%	51%	61%	9%
13. An experiment calls for 150 milliliters of water. If you are performing the experiment three times, what is the total amount of water you will need?	78%	88%	77%	84%	7%
3. Some characteristics of one cup of water (H ₂ O) are given in the table below. If temperature and altitude stay the same, which characteristic will change when you compare a cup of water to a tub of water? †	--	--	31%	37%	6%
6. What conclusion can be drawn from the chart to the left?	94%	98%	94%	96%	2%

* Item content modified from last administration

† New item for 2013

‡Item last administered in 2011. Original text "On hot days potato chip bags seem to inflate, even though they have not been opened. What causes this?"

Yearly Comparisons for Post-Program Knowledge Assessment

In 2011, the content of the knowledge assessment was updated to match the new standardized curriculum based on 37 required objectives. The implementation of the new curriculum was slow as many DoD STARBASE locations were reluctant to fully embrace the new curriculum changes and abandon their location specific objectives. The assessment began measuring the new objectives that were more challenging to the students resulting in lower knowledge scores overall.

Table 18 shows the year-over-year post-program knowledge scores beginning in 2002. The post-program knowledge scores remained fairly consistent from 2002 through 2007. The increase in 2008 and 2009 most likely reflects the increase in items from 30 to 33. The decrease in 2011 and 2012 is indicative of the updates to the assessment content. Note that in 2013 only 25 items were scored.

**Table 18:
Post-Program Knowledge Assessment Mean Total Scores and Percent Correct (2002 – 2013)**

Year	2002	2003	2004	2005	2006	2007	2008	2009	2011	2012	2013
# of items	30	30	30	30	32	30	33	33	32	30	25
Post-Program Mean Score	22.67	24.42	24.25	23.28	25.40	24.31	26.23	26.62	21.53	21.45	17.37
% Correct	75.6%	81.4%	80.8%	77.6%	79.4%	81.0%	79.5%	80.7%	67.3%	71.5%	69.5%
Gap	+4.23	+5.30	+5.16	+5.47	+6.34	+5.26	+5.61	+5.47	+5.76	+6.57	+5.19

Gap and Mean Score Differences Prior To and After Curriculum Installation in 2008 – 2013

Table 19 highlights the knowledge measures over the past five years (2008 – 2013) including the pre- and post-program means as well as the post-program correct averages and gap scores. The results indicate that when the two years prior to the 2010 core curriculum changes are compared to the two-years-after-the-curriculum changes, the gap scores increased despite the more challenging items on the assessment. The gap scores in 2011 and 2012 are higher and while the 2013 gap score was lower. There were fewer items in 2013 yet a substantial gain from pre-to post-program was obtained.

**Table 19:
Mean Scores on Pre/Post-Knowledge Assessment (2008 – 2013)**

Program Year	# of Items	Pre-Program Mean	Post-Program Mean	Post Average Student %	Gap Score
2008	33	20.62	26.23	79.5	+5.61
2009	33	21.15	26.62	80.7	+5.47
2011	32	15.77	21.53	67.3	+5.76
2012	30	14.88	21.45	71.5	+6.57
2013	25	12.18	17.37	69.5	+5.19

Four items were retained from previous knowledge test assessments. Table 20 presents the correct response percentages for each item over the past five years. Three of the four items had slight wording modifications and one remained untouched (“one reason airplanes are able to gain lift is because the air moving across the top of the wing...”). One item regarding wearing a seat belt had the widest variability over the past four years but Table 20, for the most part, indicates a great deal of item stability with a difference between the years of $\pm 1\%$ between 2012 and 2013.

Table 20:
Post-Program Percentage Correct Responses for Recurrent Knowledge Items

	2007	2008	2009	2011	2012	2013	
Post-Program Knowledge	% Correct	% Correct	% Correct	% Correct	% Correct	% Correct	2013-2012 Difference
25. What scientific law makes it important to wear a seat belt?*	74	73	76	64	75	75	0
1. Two rockets are launched using the same amount of force. One rocket is heavier than the other. Which rocket will go higher?*	87	87	86	86	92	91	-1
14. One reason an airplane is able to gain lift is because the air moving across the top of the wing...	53	55	59	54	58	58	0
18. In what state of matter do molecules have the least amount of kinetic energy or motion?*	70	70	73	74	72	73	+1

*Modifications made to the original item verbiage.

Gender Differences on Knowledge Test

Gender differences in pre- and post-program scores and gap scores are presented in Table 21. From 2004 through 2009, girls' gap scores were higher, while over the last two years the boy's gap scores were higher. In general, over the years the boys have scored higher on the pre-test and the girls higher at the completion of the program resulting in higher gap scores. The last two years have demonstrated some changes in dominance in post-program and gap scores between the genders. This year the boys claimed higher scores at pre- and post-program as well as gap score assessments. However, both genders achieved significant increases from pre- to post-program as they have in past years.

Table 21:
Pre/Post Knowledge Assessment Mean Scores by Gender

	Sample Size Score	Pre-Program Score*	Post-Program Score	Individual Gap Score
Boys	921	12.29	17.60*	+5.31
Girls	966	12.07	17.16*	+5.09

For the most part, girls obtained larger gap scores with the exception of 2011 and 2013; however, the differences range from the smallest difference of -0.14 in 2011 to the largest difference of +0.72 in 2007 (see Table 22).

**Table 22:
Gender Gap Score Differences (2004-2012) on Knowledge Test**

Gender	2004	2005	2006	2007	2008	2009	2011	2012	2013
# of Items	30	30	32	30	33	33	32	30	25
Boys	+5.08	+5.33	+6.09	+5.09	+5.37	+5.19	+5.83	+6.39	+5.31
Girls	+5.25	+5.64	+6.58	+5.81	+5.80	+5.74	+5.69	+6.76	+5.09
Difference	+0.17	+0.31	+0.49	+0.72	+0.43	+0.55	-0.14	+0.37	-0.22

Length of Academy Operation and Knowledge Test Performance

Over the last two decades of the DoD STARBASE program, there has been an effort to obtain greater standardization of curriculum objectives, applications and desired outcomes. In the beginning, there were agreements on broad program applications, methodologies and content emphasis. Opportunities for idea exchanges, instructional methods and materials were obtained in staff development conferences, peer group linkages and service arm initiatives. Upon DOD's attainment of program responsibility, standardization of program content, delivery, content area objectives and program operations became a priority. Since the advent of curriculum standardization to align with national STEM educational objectives beginning in 2009-2010, it is even more important to evaluate the comparability of student outcomes across academies. DoD STARBASE academies are expected to meet uniform criteria of a quality program. Student results on the Knowledge Assessment offer a common metric as one key performance indicator for comparison across DoD STARBASE academy locations.

Thirteen new academies were launched this past year alone and comprised a new start-up group. All other academies have at least three years of operating experience and half of those academies have over 10 years of operating experience. For the purpose of this analysis, the academies were therefore split into three groups: mature, established, or new according to the following parameters:

- Mature Academies – these pioneering academies started between 1991 and 2000.
- Established Academies – these second generation academies started between 2001 and 2010.
- New Academies – these start-up academies accepted students for the first time in 2012.

Table 23 provides the mean pre- and post-program knowledge scores for academies by length of operation. Regardless of length of operation, significant increases are shown after attending the DoD STARBASE program. The newest academies had a significantly lower gap score. This may be a bit of an artifact due, in part, to new academies having relatively higher pre-test scores and lower post-test scores which enhanced this tendency when the gap score was calculated.

**Table 23:
Knowledge Means by Academy Length of Operation**

	Number of Academies	Number of Students	Pre-Program Score	Post-Program Score	Gap Score
Mature academies	25	690	12.07	17.45	5.38
Established academies	36	891	12.16	17.44	5.28
New academies (all began offering program in 2012)	13	308	12.48	17.00	4.52

* Knowledge score gaps are significantly different across length of operation.

Table 24 presents the post-program knowledge items that were significantly different when the new academies are compared to the experienced academies. Experienced academies included both the mature and established academies identified above.

**Table 24:
Variation in Post-Program Items Across Academies by Different Lengths of Operation**

Knowledge Items With Higher Pass Rates for Students Attending New Academies

If you were asked to draw a latitude line and a longitude line on the above map, which of the arrow symbols below would point in the same direction as the latitude line?

You have produced a new candy bar with all of your favorite ingredients. You have asked your family and friends to try your new candy bar.

What step of the engineering design process (EDP) are you completing?

Knowledge Items With Lower Pass Rates for Students Attending New Academies

Two boats are lying close by each other and passing cargo from one boat to the other. Based on Bernoulli's Principle, what happens if water is forced between the two boats?

Which bar chart represents the correct composition of air?

Which of the following is typically measured in nanometers?

Which statement below is NOT true for these three technologies? G.P.S. technology, remote imagery, electronic computerized maps

Select the set of lines that are perpendicular.

The differences between the maturity levels, particularly the newer academies, could be used as diagnostic to identify areas that need attention in delivery, content emphasis and instructional methodologies.

High Versus Low Performers on Knowledge Test

Pre-program data indicates that students enter the DoD STARBASE program with different skills, abilities, attitudes and basic understanding of program concepts. An important concern of program developers and educational practitioners is how the program impacts the performance of the different populations it serves. Figure 6 illustrates the differences between high and

low performers on the pre- and post-program knowledge assessment. Performance was measured using the post-program total assessment score sample mean of 17.37 and standard deviation of 4.50. High performance was considered to be a total score of 22 or higher ($17.37 + 4.50$, rounded to whole unit value). A total of 21% of the sample were high performers. Low performance was defined to be a total score of 13 or lower ($17.37 - 4.50$, rounded to whole unit value). A total of 20% of the sample were low performers. Both the low and high performers did show significant improvements after participating in the DoD STARBASE program. Similar to last year's results, those students who scored low on the post-assessment also scored low on the pre-assessment and did not improve as much. The low performers' average gap score was a 1.5-point increase from pre- to post-program, compared to the high performers who improved on average by 8.7 points. The differences between the two groups in pre- and post-program total scores are statistically significant. The pre- and post-program averages on the attitude survey overall were also lower for low-knowledge assessment performers. The low-performing group had a significantly lower mean attitude rating both pre- and post-program (5.70 and 5.81 respectively) as compared to the high-performing group (5.94 and 6.12 respectively).

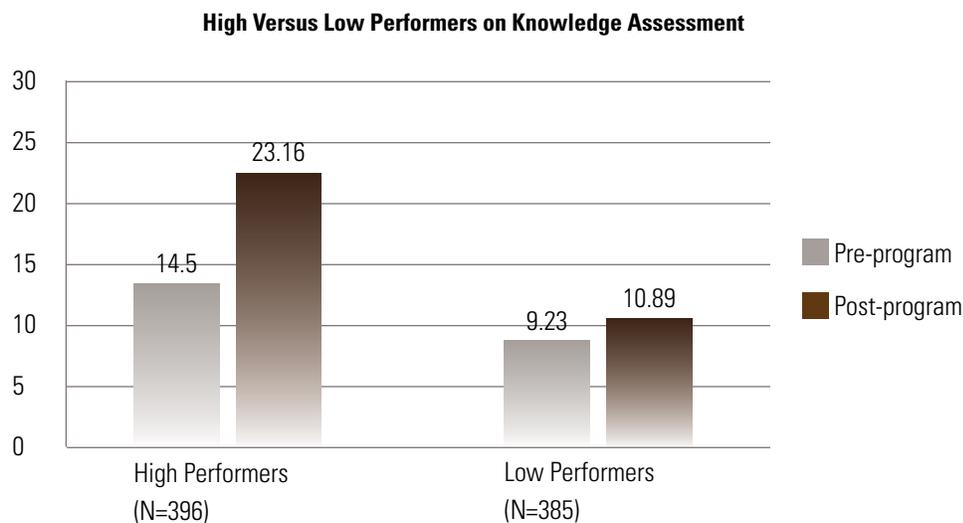


Figure 6.

Student Attitudinal Assessment

Pre/Post Ranking and Mean Scores of Students' Attitudinal Responses

The 1889 student respondents entered the DoD STARBASE program with positive attitudes about their future, the program, the military, learning and trying new things. At the conclusion of the program, these attitudes increased favorably across all dimensions.

The pre-program mean in 2013 was 5.82. On a seven-point scale, ranging from least favorable (1) to most favorable (7), the students arrived at DoD STARBASE in a positive and favorable attitudinal mind frame. When the program concluded the average mean score was 5.97 indicating that the program was a positive experience which was comparable to the previous five years ratings at the post-program assessments (see Table 25).

Table 25 provides total mean scores for all the items in the survey beginning in 2008 through 2013 on a pre-post average mean assessment. The pre-program had 26 core survey items and the post-program assessment had the 26 core items plus five items

related to post program experiences only. Table 25 displays a significant increase in post-program mean scores compared to the pre-program mean ratings. Over the past five years, the ratings are comparable. Given the changes in the curriculum and the corresponding changes in the test items, there are some shifts over the past decade but for the most part are comparable in gap and shift differences.

**Table 25:
Pre/Post Attitudinal Survey Means and Standard Deviations (2008 – 2013)**

Survey	2008 Mean*	2008 Std. Dev.	2009 Mean*	2009 Std. Dev.	2011 Mean*	2011 Std. Dev.	2012 Mean*	2012 Std. Dev.	2013 Mean*	2013 Std. Dev.	2008- 13 Mean*
Pre-Program	5.84	0.69	5.80	0.66	5.77	0.66	5.69	0.71	5.82	0.61	5.78
Post-Program	6.06	0.66	6.00	0.65	5.93	0.71	5.89	0.69	5.97	0.66	5.97

* Pre- and post-program means are significantly different.

Table 26 rank-orders the items based on post-program means from most favorable to least favorable. Most of the items show an increase in favorability from pre- to post-program means with the bolded items showing a significant increase. Three of the top six rated items include confidence building items such as “I plan to graduate from high school,” “At DoD STARBASE, I learned a lot of things that I can use,” and “You can learn a lot by trying things.” The second top rated item reflects positively on the participating staff indicating that “DoD STARBASE instructors are kind and helpful.” The lowest ranking item overall, “I am interested in being a scientist or engineer” increased from 3.89 pre-program to 4.19 post-program.

Three items decreased significantly from pre- to post-program survey, which are indicated in bold and italics. The decreases could be due to various factors such as the relatively high pre-program mean scores (i.e., regression to the mean effect), or the impact of the DoD STARBASE program activities on realistic self-perceptions. For example, although students may have felt they learned a lot and gained greater confidence in their understanding of STEM concepts and principles, they might also have realized that it requires them to pay closer attention and follow directions better as they experienced the challenges associated with learning novel and somewhat difficult information. The decline in positive attitudes towards learning more about technology may possibly reflect a sense of having learned enough at DoD STARBASE to adequately recognize its importance without necessarily feeling a need to pursue it further. This represents an opportunity for DoD STARBASE instructors to find new ways to spark an interest in technology for students at all levels of engagement. Even so, the desire to learn more about technology is still rated higher than 30% of the other attitude items in the student assessment, including “I am good at math” and “I like math.”



Table 26:
Pre/Post Rankings and Mean Scores of Student Attitudinal Responses

Pre-Program N=1,889		Attitudinal Item	Post-Program N=1,889	
Mean	Rank		Mean	Rank
6.81	1	I plan to graduate from High School.	6.78	1
6.25	5	DoD STARBASE Instructors are kind and helpful.	6.55	2
6.52	2	I like using computers.	6.48	3
6.44	3	You can learn a lot by trying things.	6.46	4
6.24	6	Military people do lots of different things.	6.40	5
Post Only	Post Only	At DoD STARBASE, I learned a lot of things that I can use.	6.39	6
6.40	4	<i>I think about what I want to be when I grow up.</i>	6.32	7
Post Only	Post Only	I am enjoying coming to a military base.	6.28	8
6.16	8	I like to make new things.	6.27	9
Post Only	Post Only	(Reverse Scored) DoD STARBASE is boring.	6.25*	10
Post Only	Post Only	DoD STARBASE is better than I expected.	6.20	11/12
6.06*	9	(Reverse Scored) I do not think DoD STARBASE will help me do better in school.	6.20*	11/12
6.20	7	I use a computer at home.	6.19	13
6.01	10	I like to think of new ways to use things.	6.12	14
5.95	12	I set goals for myself.	6.04	15
5.75	17	Military bases are exciting.	6.01	16
Post Only	Post Only	I would tell my friends to come to DoD STARBASE.	5.99	17
5.82	15	Learning can be fun.	5.95	18
5.85	14	You can accomplish a lot in a group.	5.91	19
5.78	16	I am able to achieve my goals.	5.88	20
5.92	13	<i>I am good at following directions.</i>	5.85	21
5.98	11	<i>I want to learn more about technology.</i>	5.83	22
5.73	18	I like science.	5.82	23
5.63	19	I make good decisions.	5.72	24
5.37	21	I am good at science.	5.60	25
5.58	20	You can work better in a group.	5.59	26
5.33	23	The military is a good place to work.	5.52	27
5.36	22	Learning is easy for me.	5.50	28
5.23	24	I am good at math.	5.37	28
5.11	25	I like math.	5.19	30
3.89	26	I am interested in being a scientist or engineer.	4.19	31

*Item reverse-scored (a higher score is associated with a more positive attitude).
 Bold items show statistically significant changes.

Student Post-Program Attitudinal Results

The following analysis provides a summary of the attitudinal survey results for both the pre-program survey and the post-program survey. The analysis includes those surveys with no more than three missing items for either survey. The attitudinal items were rated using a seven-point Likert scale with a range of responses from strongly disagree (1) through strongly agree (7).

Yearly Comparisons For Post-Program Attitudes

Table 27 provides a list of the eight top-rated attitudinal items for 2013. Comparisons from previous years, beginning with 2006, indicate that the top-rated items still include a focus on the military, student's future and experiencing new things. Last year, additional items were introduced involving experience and opportunity with computers. "I like using computers" was the third highest rated item post-program with "I use a computer at home" ranked 13.

**Table 27:
Highest Ranked Post-Program Attitudes (2006 – 2013)**

Attitudinal Item	2006		2007		2008		2009		2011		2012		2013	
	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean
I plan to graduate from high school.	2	6.53	1	6.53	3	6.54	3	6.50	1	6.55	1	6.73	1	6.78
DoD STARBASE instructors are kind and helpful.	1	6.61	2	6.51	1	6.61	1	6.57	2	6.47	2	6.46	2	6.55
I like using computers.					New Item in 2012						5	6.40	3	6.48
You can learn a lot by trying things.	3/4	6.51	3	6.47	4	6.51	2	6.51	3	6.40	3/4	6.41	4	6.46
Military people do lots of different things.	7	6.26	8/9	6.23	7	6.28	7	6.24	5	6.29	9	6.24	5	6.40
At DoD STARBASE, I learned a lot of things that I can use. (post only)	3/4	6.51	4	6.46	2	6.55	4	6.49	4	6.36	3/4	6.41	6	6.39
I think about what I want to be when I grow up.	5	6.36	5	6.39	5	6.36	5	6.36	8	6.17	6	6.26	7	6.32
I am enjoying coming to a military base. (post only)	6	6.28	8/9	6.23	6	6.31	6	6.28	6	6.24	7/8	6.25	8	6.28

The pre- and post-program composite mean scores in Table 28 for the attitudinal items have had some fluctuations since 2004 but generally have remained positive. This year, the total mean attitudes were commensurately more favorable compared to the past couple of years with a pre-program mean of 5.82 and post-program mean of 5.97. The overall pattern across the years reflects favorable attitudes after DoD STARBASE attendance. Despite the year-to-year fluctuations in attitude ratings across years, the score shift from pre- to post-survey remains fairly consistent ranging from an increase of 0.15 points in 2013 to an increase of 0.25 in 2007. Also, changes in a few of the attitude items could partially account for the more recent fluctuations.

Table 28:
Pre/Post Attitudinal Survey Means (2004 – 2013)

Composite Attitudinal Mean Scores	2004*	2005*	2006*	2007*	2008*	2009*	2011*	2012*	2013*
Pre-Program Survey	5.78	5.83	5.81	5.75	5.84	5.80	5.77	5.69	5.82
Post-Program Survey	5.97	6.06	6.05	6.00	6.06	6.00	5.93	5.89	5.97
Score Shift +/-	+0.19	+0.23	+0.24	+0.25	+0.22	+0.20	+0.16	+0.20	+0.15

* Pre- and post-program means are significantly different.

Table 29 shows the means for all attitudinal items from 2004 to 2013 and provides a broad view of how students perceived the program and the shifts in the items over time. The items are ordered by their mean scores in 2013. Six new items were added in 2012 but are not included in the historical ranking. These can be found at the end of Table 29 along with their rank ordered ratings.

The largest increases from the 2012 assessment:

- "I want to learn more about technology." (+0.32)
- "I like to think of new ways to use things." (+0.30)
- "I do not think DoD STARBASE will help me in school." (+0.24¹⁶)

The following items had the largest decreases from the 2012 survey:

- "I am able to achieve my goals." (-0.07)
- "I use a computer at home." (-0.06)
- "I am good at math." (-0.05)

Military-related items and personal-confidence items continue to maintain high positive rankings and attitudinal mean scores.

¹⁶ Reverse-scored item. A positive response means students strongly disagreed.

**Table 29:
Post-Program Attitudinal Item Mean Scores (2004 – 2013)**

	2004	2005	2006	2007	2008	2009	2011*	2012	2013
Post-Program Attitudes	Mean	Mean	Mean						
I plan to graduate from High School.	6.47	6.54	6.53	6.53	6.54	6.50	6.55	6.73	6.78
DoD STARBASE instructors are kind and helpful.	6.54	6.54	6.61	6.51	6.61	6.57	6.47	6.46	6.55
You can learn a lot by trying things.	6.51	6.57	6.51	6.47	6.51	6.51	6.40	6.41	6.46
Military people do lots of different things.	6.29	6.30	6.26	6.23	6.28	6.24	6.29	6.24	6.40
At DoD STARBASE, I learned a lot of things that I can use. (post only)	6.53	6.53	6.51	6.46	6.55	6.49	6.36	6.41	6.39
I think about what I want to be when I grow up.	6.38	6.37	6.36	6.39	6.36	6.36	6.17	6.26	6.32
I am enjoying coming to a military base. (post only)	6.35	6.30	6.28	6.23	6.31	6.28	6.24	6.25	6.28
I like to make new things.	6.29	6.36	6.24	6.25	6.27	6.20	6.20	6.16	6.27
DoD STARBASE is boring.*	6.44	6.36	6.45	6.32	6.41	6.38	6.18	6.21	6.25
I do not think DoD STARBASE will help me do better in school.*	N/A	6.03	6.11	6.03	6.06	6.14	6.18	5.96	6.20
I like to think of new ways to use things.	6.17	6.13	6.00	6.06	6.10	6.02	5.92	5.82	6.12
I set goals for myself.	6.07	6.07	6.14	6.09	6.05	5.98	5.78	5.88	6.04
Military bases are exciting. (replaced 'Military bases are fun.')	6.02	5.93	5.94	5.84	5.93	5.49	5.61	5.91	6.01
I would tell my friends to come to DoD STARBASE. (post only)	6.21	6.15	6.19	6.07	6.23	6.12	5.92	5.99	5.99
Learning can be fun.	6.15	6.12	6.03	5.93	6.02	6.00	5.82	5.91	5.95
You can accomplish a lot in a group.	6.29	6.10	6.11	5.98	6.05	5.99	5.88	5.82	5.91
I am good at following directions.	5.70	5.79	5.82	5.74	5.78	5.76	5.73	5.80	5.85
I like science.	5.67	5.78	5.72	5.65	5.76	5.79	5.75	5.81	5.82
I make good decisions.	5.73	5.79	5.86	5.72	5.83	5.73	5.72	5.70	5.72
I am good at science.	5.43	5.50	5.53	5.42	5.50	5.50	5.56	5.58	5.60
You can work better in a group (replaced "You can have fun working in a group.")	6.34	6.24	6.20	6.11	6.19	6.18	6.05	5.52	5.59
The military is a good place to work.	5.40	5.40	5.38	5.25	5.34	5.20	5.37	5.37	5.52
Learning is easy for me.	5.55	5.54	5.48	5.49	5.48	5.51	5.47	5.46	5.50
I am good at math.	5.27	5.35	5.28	5.36	5.36	5.35	5.40	5.42	5.37

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Table 29: (Continued)
Post-Program Attitudinal Item Mean Scores (2004 – 2013)

	2004	2005	2006	2007	2008	2009	2011*	2012	2013
Post-Program Attitudes	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
I like math.	5.33	5.39	5.25	5.16	5.32	5.29	5.03	5.17	5.19
I like using computers.				New Item in 2012				6.40	6.48
DoD STARBASE is better than I expected (post only).				New Item in 2012				6.04	6.20
I use a computer at home.				New Item in 2012				6.25	6.19
I am able to achieve my goals.				New Item in 2012				5.95	5.88
I want to learn more about technology.				New Item in 2012				5.51	5.83
I am interested in being a scientist or engineer.				New Item in 2012				4.21	4.19

* Values have been reverse coded with years 2004 – 2011 estimated.

Shifts in Students' Attitudes

Table 30 provides the ten largest pre- to post-program attitudinal shifts for the 2013 program. As expected, the attitudinal items resulted in a positive shift from pre-program mean responses to post-program mean responses. In particular, there was a 0.30 increase from pre- to post-program mean response in students reporting “I am interested in being a scientist or engineer” and “DoD STARBASE instructors are kind and helpful”. Students also responded more favorably toward the military and confidence in school achievement such as learning in general and math and science specifically.

Table 30:
The Top 10 Ranking of Attitudinal Item Shifts from Pre- to Post-Program in 2013

Attitudinal Item	Mean Positive Shift Pre- to Post-program
I am interested in being a scientist or engineer.	+0.30
DoD STARBASE Instructors are kind and helpful.	+0.30
Military bases are exciting.	+0.26
I am good at science.	+0.23
The military is a good place to work.	+0.19
Military people do lots of different things.	+0.16
I am good at math.	+0.14
Learning is easy for me.	+0.14
I do not think DoD STARBASE will help me do better in school.*	+0.14
Learning can be fun.	+0.14

*Reverse-scored item.

Math and Science Attitudinal Ratings

Similar to previous years, students' mean attitudes in Table 31 surrounding science and math are more positive post-program as compared to pre-program. In addition, students have larger shifts in being good at math and science post-program suggesting that the STEM curriculum taught within the program is giving the students more confidence in their abilities pertaining to math and science.

Table 32 shows the historical means for the science and math items beginning in 2004. The attitudes across years remain consistently favorable with the general trend of science attitudes scoring higher than math attitudes each year.

**Table 31:
Math and Science Attitudinal Item Mean Scores (2013)**

Math and Science Attitudinal Items	Pre-Program Mean	Post-Program Mean	Gap Score
I like science.	5.73	5.82	+0.09
I am good at science.	5.37	5.60	+0.23
I am good at math.	5.23	5.37	+0.14
I like math.	5.11	5.19	+0.08

**Table 32:
Post-Program Attitudinal Item Mean Scores (2004 – 2013)**

	2004	2005	2006	2007	2008	2009	2011	2012	2013
Post-Program Attitudes	Mean								
I like math.	5.33	5.39	5.25	5.16	5.32	5.29	5.03	5.17	5.19
I am good at math.	5.27	5.35	5.28	5.36	5.36	5.35	5.40	5.42	5.37
I like science.	5.67	5.78	5.72	5.65	5.76	5.79	5.75	5.81	5.82
I am good at science.	5.43	5.50	5.53	5.42	5.50	5.50	5.56	5.58	5.60

Military-Related Attitudes

Shifts in Military-Related Attitudes

Four items in the Student Attitudinal Survey relate to perceptions regarding the military (see Table 33). One of the items, "I am enjoying coming to a military base" is only administrated at the post-programs' completion. All items are statistically significant and favorable. The item, "Military people do lots of different things" made a return to the top five most positive attitudes which it had previously attained in 2011 at the post-program ranking. The lowest ranked military-related item, "The military is a good place to work" slightly improved from 2012. This item, prior to 2011, was consistently amongst the top 10 attitudinal items in post-program ranking. The curriculum changes may be a factor to this decrease. The discretionary time to visit operating units on base has been more limited because of time constraints. Overall, student attitudes about the military remain positively influenced by their DoD STARBASE experiences.

Table 33:
Attitudinal Shifts on Military-Related Items (2006 – 2013)

Military Attitudinal Item	2006		2007		2008		2009		2011		2012		2013	
	Shift	Post-mean Rank	Shift	Post-mean Rank	Shift	Post-mean Rank	Shift	Post-mean Rank	Shift	Post-mean Rank	Shift	Post-mean Rank	Shift	Post-mean Rank
I am enjoying coming to a military base.	+0.31	4	+0.37	2	+0.34	2	Post Only	6	Post Only	6	Post Only	7/8	Post Only	8
Military people do lots of different things.	+0.20	8	+0.21	9	+0.15	12	+0.13	10	+0.17	5	+0.19	9	+0.16	5
Military bases are exciting.	+0.43	2	+0.46	1	+0.41	1	+0.40	1	+0.40	19	+0.41	16/17	+0.26	16
The military is a good place to work.	+0.24	6	+0.32	5	+0.18	6/7/8/9	+0.19	5	+0.23	23	+0.19	29	+0.19	27

Comparing “High” and “Low” Military Attitudinal Groupings

Overall military attitudes were calculated based on a composite of those items administered pre- and post-program. Student responses to the following items were summed for the post-program assessment only: “Military people do lots of different things,” “The military is a good place to work,” and “Military bases are exciting.” Students with a sum total of 20 or 21 on those three items were categorized as having high military attitudes. Students with a sum total of 13 or less on those three items were categorized as having low military attitudes. “I am enjoying coming to a military base” was administered post-program only and was not included within the Military Attitude scale.

Knowledge total scores were compared against Military Attitude. Table 34 shows that there were differential gains on the pre- and post-program mean knowledge assessment scores between those with high military attitudes and those with low military attitudes. Both groups (high and low military attitudes) had significant gains in knowledge score pre- to post- program. Table 35 provides the responses for all the attitudinal items rank-ordered from largest to smallest gap score between the high and low Military Attitude groups. As expected, the first several items are those that make up the composite scale. Other large differences between high and low military attitudes reflect:

- More interest in STEM activities (e.g., “I am interested in being a scientist or engineer.” “I want to learn more about technology.”)
- Group work (e.g., “You can accomplish a lot in a group.” “You can work better in a group.”)
- Novel ideas (e.g., “I like to think of new ways to use things.” “I like to make new things.”)
- Forward thinking (e.g., “I set goals for myself.” “I think about what I want to be when I grow up.”)

In short, students with more receptive attitudes toward the military appear to also be more motivated in regard to STEM learning and applications. They report being more goal-oriented and confident as well.

Table 34:
Pre/Post-Knowledge Assessment Mean Scores for High and Low Military Attitude Students

Military Attitudes	Sample Size	Pre-Program Mean	Std. Deviation	Post-Program Mean	Std. Deviation
High Military Attitudes	695	12.30	3.33	17.79*	4.58
Low Military Attitudes	171	11.97	3.41	16.61*	4.49

*Significant increase in post-program means.

Table 35:
Statistically Significant Post-Program Gap Scores Based on Low and High Military Attitudes

Attitude Item	Low Military Attitude (n = 171)	High Military Attitude (n = 695)	+/- Gap
Post-program Attitudes (mean total) Composite Score	5.10	6.34	1.24
The military is a good place to work.	2.89	6.78	3.89
Military bases are exciting.	3.42	6.93	3.51
I am enjoying coming to a military base.	4.65	6.81	2.16
Military people do lots of different things.	4.87	6.93	2.06
I would tell my friends to come to DoD STARBASE.	4.70	6.50	1.80
I am interested in being a scientist or engineer.	3.09	4.67	1.58
(Reverse Scored) DoD STARBASE is boring.	5.23	6.63	1.40
DoD STARBASE is better than I expected.	5.22	6.55	1.33
I like math.	4.36	5.62	1.26
I want to learn more about technology.	5.09	6.32	1.23
(Reverse Scored) I do not think DoD STARBASE will help me do better in school.	5.27	6.48	1.21
You can accomplish a lot in a group.	5.11	6.29	1.18
You can work better in a group.	4.81	5.98	1.17
Learning can be fun.	5.17	6.32	1.15
At DoD STARBASE, I learned a lot of things that I can use.	5.63	6.71	1.08
I make good decisions.	5.01	6.03	1.02
I like to think of new ways to use things.	5.48	6.48	1.00
I am able to achieve my goals.	5.25	6.21	0.96
I like to make new things.	5.69	6.64	0.95
DoD STARBASE Instructors are kind and helpful.	5.84	6.78	0.94
I set goals for myself.	5.43	6.35	0.92

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Table 35: (Continued)
Statistically Significant Post-Program Gap Scores Based on Low and High Military Attitudes

Attitude Item	Low Military Attitude (n = 171)	High Military Attitude (n = 695)	+/- Gap
Learning is easy for me.	4.98	5.84	0.86
You can learn a lot by trying things.	5.85	6.71	0.86
I am good at math.	4.78	5.60	0.82
I am good at science.	5.12	5.92	0.80
I like science.	5.30	6.09	0.79
I am good at following directions.	5.29	6.06	0.77
I think about what I want to be when I grow up.	5.86	6.58	0.72
I use a computer at home.	5.95	6.34	0.39
I like using computers.	6.26	6.64	0.38
I plan to graduate from High School.	6.58	6.92	0.34

(Reverse Scored) This item was reverse-scored; therefore a higher mean average value reflects a more positive attitude.

Gender Comparisons and Attitudinal Differences

Gender differences in the overall composite attitudinal mean scores displayed no significant variation. Differences do occur between the male and female students on several specific attitudinal items and many of those are statistically significant. Table 36 provides the total mean scores for each gender along with the pre- and post-rankings.

Girls responded more favorably than boys on six items while the boys had significant favorable responses over the girls on five items. Girls focused in future planning and learning as a way to succeed while the boys tended towards STEM-related areas such as technology and personal skills at math. The attitudinal items are ranked by gender in Table 37.

To obtain a complete pre- and post-program item mean score graphic in the differences between genders, including gap scores. The greatest gap gain for girls was "I am interested in being a scientist or engineer" at +0.40, while the greatest gain for boys was "DoD STARBASE instructors are kind and helpful" at an increase of +0.26. Last years' largest gain for both genders was "Military bases are exciting".

Table 36:
Gender Differences on Pre/Post Attitude Survey Mean Total Scores

	Sample Size	Pre-Program Mean	Post-Program Mean	Performance Gap Score
Boys	922	5.84	5.99	+0.15
Girls	952	5.79	5.96	+0.17

**Table 37:
Gender Gap Score Differences in Post-Program Attitude Survey Mean Item Scores**

Attitude Item	Girls' Rank	Girls' Mean	Boys' Rank	Boys' Mean	G - B Difference
Girls More Favorable than Boys					
I am good at following directions.	16/17	6.02	23	5.69	0.33
I make good decisions.	21	5.87	26	5.57	0.30
I think about what I want to be when I grow up.	4	6.45	11	6.20	0.25
I set goals for myself.	14	6.11	19	5.96	0.15
Learning can be fun.	16/17	6.02	20/21	5.88	0.14
You can learn a lot by trying things.	3	6.51	5	6.41	0.10
Boys More Favorable than Girls					
I am interested in being a scientist or engineer.	31	3.83	31	4.58	-0.75
I want to learn more about technology.	24	5.64	16	6.04	-0.40
I am good at math.	29	5.22	29	5.52	-0.30
Military bases are exciting.	20	5.90	15	6.13	-0.23
You can accomplish a lot in a group.	22	5.82	17	6.00	-0.18



Prior Experience with the Military

An Attitudinal Comparison

The students' prior experiences with military personnel and/or military locations had an impact on both pre-and post-program attitudinal responses. Prior experience was determined by the students' affirmative response to the item "I have met military people before coming to DoD STARBASE". Students who had prior military experience demonstrated more positive responses at program entry and at program conclusion than those students with no prior experience. There were 11 attitudinal items that were significantly different from those students that had no prior experience. Nine of the items were significant on a pre- and post-program assessment while the other two were split between pre and post. Students with no prior experiences had four items that were significant including "DoD STARBASE instructors are kind and helpful" (see Table 38).

Table 38:
Significant Differences in Attitudinal Items Based on Prior Military Contact - Ranked

More Positive with Prior Military Contact	More Positive without Prior Military Contact
I plan to graduate from High School. (pre & post)	I like using computers. (pre & post)
Military people do lots of different things. (pre & post)	You can work better in a group. (pre & post)
I use a computer at home. (pre & post)	You can accomplish a lot in a group. (pre)
I set goals for myself. (pre)	DoD STARBASE Instructors are kind and helpful.
Military bases are exciting. (pre & post)	(post)
I am able to achieve my goals. (pre & post)	
I am good at science. (pre & post)	
Learning is easy for me. (pre & post)	
The military is a good place to work. (pre & post)	
I am good at math. (pre & post)	
I like to make new things. (post)	

Note: Mean values of item responses by prior military contact group are omitted for simplicity. They are available upon request.

Gender Differences Based on Prior Experiences with Military Personnel

Experience with military personnel was also reviewed based on gender differences for both attitudinal (see Table 39) and knowledge-based pre- and post-program responses (see Table 40). No significant differences were found between boys and girls in either the pre- or post-program means for either prior experience group.

**Table 39:
Prior Experience with the Military Attitudinal Differences by Gender**

	No Prior Experience with Military		Prior Experience with Military		Difference Between Post- Program Means
	Pre-Program Mean	Post-Program Mean	Pre-Program Mean	Post-Program Mean	
Boys	5.76	5.91	5.88	6.03	+0.12
Girls	5.77	5.94	5.82	5.96	+0.02

**Table 40:
Prior Experience with the Military Knowledge Differences by Gender**

	No Prior Experience with Military		Prior Experience with Military		Difference Between Post- Program Means
	Pre-Program Mean	Post-Program Mean	Pre-Program Mean	Post-Program Mean	
Boys	11.11	16.03	12.94	18.44	+2.41
Girls	11.33	16.06	12.66	18.09	+2.03

Comparisons Based on Prior Knowledge of DoD STARBASE

DoD STARBASE has a positive reputation to those students who have prior knowledge about the program before they attended the program. In addition, students with prior knowledge had significantly more favorable responses to seven of the Attitudinal Survey items both pre- and post-program (see Table 41). Prior knowledge was measured by the students' favorable response to "I heard about DoD STARBASE before I knew I was coming here". For the students who were familiar with DoD STARBASE, there were seven pre- and post-program items, that were significant at a favorable level. The experience of DoD STARBASE attendance reinforced their positive attitude. On a pre-program level, thirteen items were assessed significantly on a favorable level and five additional at the post-program assessment.

The positive ratings suggest that the majority of students are:

- Getting positive feedback from former DoD STARBASE participants
- Entering the program with higher more positive expectations
- Completing the program with more favorable responses than their counterparts who did not have prior knowledge about the program.

Table 41:
Significant Differences on Attitudinal Survey Items Based on Knowledge of DoD STARBASE Ranked High to Low

Pre-Program Only	Pre- and Post-Program
I plan to graduate from high school.	You can learn a lot by trying things.
I like using computers.	Military people do lots of different things.
I think about what I want to be when I grow up.	I set goals for myself.
DoD STARBASE Instructors are kind and helpful.	Military bases are exciting.
I use a computer at home.	You can accomplish a lot in a group.
I like to make new things.	I am able to achieve my goals.
I do not think DoD STARBASE will help me do better in school. (Reverse scored)	I make good decisions.
I like to think of new ways to use things.	
I want to learn more about technology.	Post-Program Only
Learning is easy for me.	At DoD STARBASE, I learned a lot of things that I can use.
The military is a good place to work.	I am enjoying coming to a military base.
I am good at math.	DoD STARBASE is better than I expected.
I like math.	I would tell my friends to come to DoD STARBASE.
	Learning can be fun.

Note: All attitudes were more positive among students with prior knowledge. Mean values of item responses by DoD STARBASE knowledge group are omitted for simplicity. They are available upon request.

Length of Academy Operation and Attitudinal Differences

Length of academy operation was divided into the following three categories:

- Mature academies – started before 2001 (25 academies and 690 students)
- Established academies – started between 2001 and 2010 (36 academies and 891 students)
- New academies – established in 2012 (13 academies and 308 students)

Table 42 presents the post-program Attitudinal Survey items that have significantly different means across the academies based on length of operation. The “3 Level Differences” column flags significant differences across three levels. The “New vs. Experienced” column flags attitudes that were significantly different for the students attending the 13 new academies as compared to both the Mature and Established academies combined. Mature programs received the highest student attitudinal ratings in all of the comparisons on the following page.

Table 42:
Attitudinal Survey Items with Significant Mean Differences Across Academies by Different Lengths of Operation

Attitude Item	Post-Program Mean	Mean	3 Level Differences	New vs Experienced
I like math.	Mature	5.27		
	Established	5.22	X	X
	New	4.93		
I am good at following directions.	Mature	5.96		
	Established	5.79	X	
	New	5.79		
You can learn a lot by trying things.	Mature	6.49		
	Established	6.47		X
	New	6.36		
I set goals for myself.	Mature	6.20		
	Established	5.96	X	
	New	5.91		
I make good decisions.	Mature	5.83		
	Established	5.67	X	
	New	5.64		
You can accomplish a lot in a group.	Mature	6.00		
	Established	5.90	X	X
	New	5.73		
You can work better in a group.	Mature	5.69		
	Established	5.57	X	X
	New	5.41		
I like to make new things.	Mature	6.41		
	Established	6.22	X	X
	New	6.13		
I like to think of new ways to use things.	Mature	6.21		
	Established	6.08	X	
	New	6.03		
Military bases are exciting.	Mature	6.13		
	Established	5.96	X	
	New	5.89		

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Table 42: (Continued)
Attitudinal Survey Items with Significant Mean Differences Across Academies by Different Lengths of Operation

Attitude Item	Post-Program Mean	Mean	3 Level Differences	New vs Experienced
I am enjoying coming to a military base.	Established	6.36		
	New	6.25	X	
	New	6.16		
I would tell my friends to come to DoD STARBASE.	Mature	6.14		
	Established	5.94	X	X
	New	5.79		
Pre-program attitude score	Mature	5.87		
	Established	5.81	X	X
	New	5.72		
Post-program attitude score	Mature	6.05		
	Established	5.93	X	X
	New	5.90		

The Impact of Student Age and Grade Level on Attitudes

Table 43 presents statistically significant correlations between a student's age and grade in school with Attitudinal Survey items. Although the magnitudes of the relationships are all fairly small, the four item-level relationships with age together suggest that older students may be a bit more tentative and might benefit from more encouragement. The negative correlations in Table 43 indicate that attitudes tend to become less favorable as the student gets older, making it important to get their attention early and maintain positive experiences related to the STEM curriculum while reinforcing pro-social behaviors.

Table 43:
Relationships of Student Age and Grade with Post-Program Attitudinal Responses

	Correlation	
	Grade	Age
DoD STARBASE is boring. (R)		-0.073**
I make good decisions.	-0.059*	-0.060*
I like to think of new ways to use things.	-0.049*	
At DoD STARBASE, I learned a lot of things that I can use.		-0.063*
I would tell my friends to come to DoD STARBASE.		-0.048*

** Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Variability Attributable to Academy

Table 44 provides the minimum and maximum values for the academies for both the pre- and post-program Attitudinal Survey means and Knowledge Assessment scores. Overall, there appears to be substantial range in responding across academies. The individual gap shows the highest and the lowest gap observed for individual academy results. There are some instances where the post-program attitude mean was slightly less than the pre-program mean based on the individual gap score. These differences were not significant but show that some academies did not improve overall student perceptions for the specific classes surveyed.

The Knowledge-item composite score also shows variability across academies with the minimum values at 8.67 for the pre-program score and 10.09 for the post-program score. The maximum values are significantly higher with 15.62 pre-program and 23.08 post-program scores. The variability in pre-program scores indicates that the students coming into the program have a wide range of knowledge surrounding the core STEM curriculum. Some enter the program with minimal knowledge while others enter the program with significantly more knowledge. Pre-test results may provide a baseline of students' knowledge at the start of the program.

**Table 44:
Range of Attitudinal and Knowledge Measures Across Academies**

Attitudinal Means	Pre-Program Mean Score	Post-Program Mean Score	Academy Score Gap
Minimum	5.37	5.34	-0.28
Maximum	6.27	6.61	0.91
Knowledge Scores	Pre-Program Score	Post-Program Score	Academy Score Gap
Minimum	8.67	10.09	1.23
Maximum	15.62	23.08	11.70



Class Size Comparisons on Knowledge and Attitudinal Assessment

Figure 7 suggests that there is high variability in class size and differences in knowledge and attitudinal assessment. Overall, there appears to be no clear advantage to the student solely based on class size. The relationship of class size and its influence is complex but there seems to be a small, but not significant, relationship between larger classes and knowledge gain ($r = -0.08$, $p < 0.001$) but no clear relationship on attitudinal change. The sample numbers in class size at each end of the class size categories (6-15 and 31-44) are smaller in number.

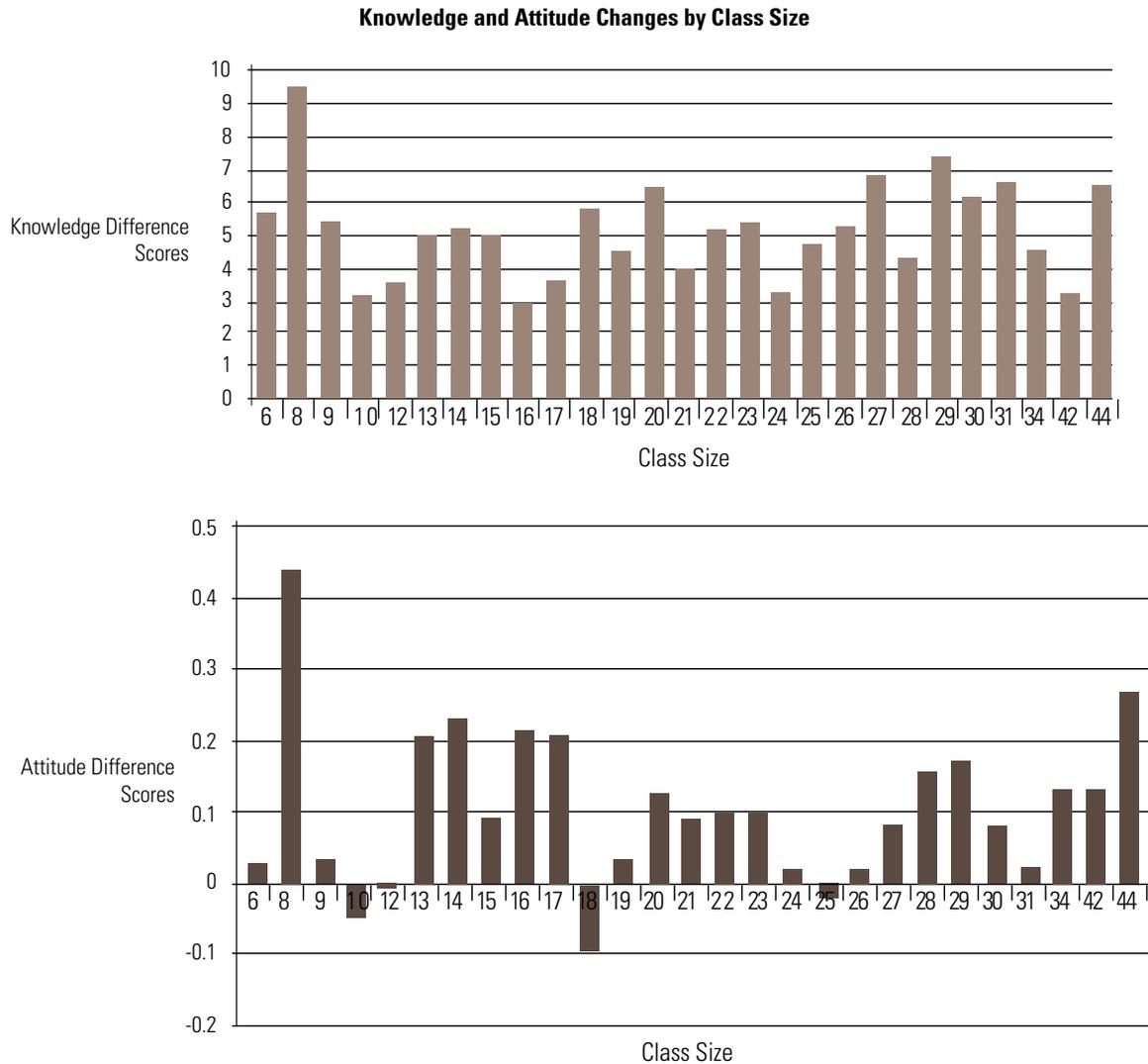


Figure 7.

Class Schedule Comparisons

Each academy was reviewed based on class schedule. Class schedule was categorized as meeting on consecutive days, meeting once per week, or meeting on some other schedule (see Table 45). Class schedule did impact the knowledge assessment scores and attitudinal scores. Students attending once per week demonstrated the lowest scores including the smallest gains. This group probably also had a longer delay between learning activities and testing. Attitudinally, the Other Schedule academies had the largest gains in both the knowledge and attitudinal scores. Further information regarding what constitutes the “Other Schedule” may provide additional insight.

**Table 45:
Class Schedule Pre-Program and Post-Program Knowledge and Attitudinal Scores**

	Knowledge Scores			Attitudinal Scores		
	Pre-Program*	Post-Program*	Gap	Pre-Program*	Post-Program*	Gap
Consecutive	12.91	18.33	5.42	5.76	5.92	0.16
Once per week	11.74	16.62	4.88	5.84	5.98	0.14
Other schedule	12.11	18.26	6.15	5.90	6.10	0.20

* Means are significantly different.

DRIVERS OF OPINION

The subsections of Table 46 provide a list of non-overlapping statistical predictors of the target attitudes rank-ordered by relative impact (beta weight) of the driver on the target attitude. That means that if the conditions in the list are present, it is very likely the target attitude will be present also. Many consider these lists to be prioritized action items for improving the target attitude.

There are repeating drivers that appear to have a broad impact on the target attitudes. The two main drivers with the most impact on at least four of the target attitudes include:

- “I am enjoying coming to a military base” directly impacts target behaviors and attitudes associated with learning and communicating their experience with others. Students reporting that they enjoy coming to a military base are more likely to indicate that they learned a lot of things that they can use and they are interested in becoming a scientist or engineer. Additionally, they are more likely to tell their friends to come to DoD STARBASE and report that military bases are exciting.
- “I like to think of new ways to use things” impacts attitudes towards military bases and the variety of things that military people do. Students tend to report that they are interested in becoming a scientist or engineer and would tell their friends to come to DoD STARBASE.

Two other drivers impacted at least three target attitudes:

- “DoD STARBASE is better than I expected.”
- “You can learn a lot by trying things.”

Improving these attitudes may affect many other attitudes as well. Some of the driver attitudes are potentially more easily influenced directly by DoD STARBASE program-delivery elements, such as content, activities, and instructors. To the extent that academies are able to create a stimulating, rewarding and supportive learning environment, positive student attitudes can be enhanced and reinforced that may pay continuing dividends over the longer term after DoD STARBASE attendance. These desirable outcomes include word-of-mouth endorsement, further pursuit of learning about technology, STEM career motivation, and possibly military enlistment.

**Table 46:
Drivers of Key Target Attitudes (Post-Program Responses)**

Target Attitude	Drivers of Target Attitude	Adjusted R Square
At DoD STARBASE, I learned a lot of things that I can use.	I would tell my friends to come to DoD STARBASE.	.298
	You can learn a lot by trying things.	.348
	DoD STARBASE is better than I expected.	.378
	I do not think DoD STARBASE will help me do better in school.	.389
	I am enjoying coming to a military base.	.399
I would tell my friends to come to DoD STARBASE.	DoD STARBASE is better than I expected.	.329
	At DoD STARBASE, I learned a lot of things that I can use.	.425
	I am enjoying coming to a military base.	.467
	DoD STARBASE is boring. (R)	.493
	I like to think of new ways to use things.	.507
I want to learn more about technology.	DoD STARBASE Instructors are kind and helpful.	.518
	I am interested in being a scientist or engineer.	.151
	I like using computers.	.259
	I like to make new things.	.314
	Learning can be fun.	.336
I am interested in becoming a scientist or engineer	I would tell my friends to come to DoD STARBASE.	.345
	I am good at science.	.349
	I want to learn more about technology.	.151
	I like science.	.204
	I am enjoying coming to a military base.	.220
	I like to think of new ways to use things.	.228
	Learning can be fun	.232

Continued on next page

**Table 46: (Continued)
Drivers of Key Target Attitudes (Post-Program Responses)**

	I am enjoying coming to a military base.	.384
	The military is a good place to work.	.505
Military bases are exciting.	Military people do lots of different things.	.521
	I do not think DoD STARBASE will help me do better in school.	.528
	I like to think of new ways to use things.	.534
	Military bases are exciting.	.168
	You can learn a lot by trying things.	.198
Military people do lots of different things.	The military is a good place to work.	.219
	I set goals for myself.	.234
	DoD STARBASE Instructors are kind and helpful.	.241
	I like to think of new ways to use things.	.247
	You can accomplish a lot in a group.	.250
	You can learn a lot by trying things.	.255
	Learning is easy for me.	.328
Learning can be fun.	DoD STARBASE is better than I expected.	.364
	I like math.	.389
	I like science.	.399

PARTICIPATING TEACHER ASSESSMENT

Introduction

One of the most critical and important participant groups in the DoD STARBASE program is the classroom teacher. They provide several essential functions in the program to include: scanning student skills prior to DoD STARBASE entry, assisting with program delivery, observing program effectiveness and post-program student performance as well as referring students to downstream STEM programs. They are also representatives and program advocates to school administrators, parents and community leaders. Their understanding of the importance of STEM education, the linkage of DoD STARBASE to the new core curriculum objectives and the results of the student experiences and performance through DoD STARBASE participation has resulted in their continued confidence in the program's ability to obtain these objectives.

The DoD STARBASE Teacher Survey is the key instrument for obtaining classroom teacher perceptions and experiences on program and student performance as well as attitudinal changes throughout the program year. Additional data is obtained through interviews with participating teachers, school principals and administrators during compliance visitations by the assessment team.

Classroom teachers complete the online survey on the last day of the program. Background information on the teachers, their perceptions of the program, the curriculum, the impact on the students, the school system and the program's impact on them personally are obtained through the survey process. While each academy is required to obtain a minimum of ten surveys for each site, the majority of the academies try to obtain a complete inventory of responses from all their participating classroom teachers. More than 2,100 (2,146) teachers from 76 academies completed the survey this past program year (August 2012 through June 2013).

In addition to basic demographic information, teachers are also surveyed on their perceptions of the effectiveness of the programs' STEM instruction, satisfaction with obtaining state standard test objectives, the impact on their students, the degree to which they utilize DoD STARBASE program materials and methods, and their level of involvement in advocacy activities in furthering student STEM skill development.

The following section of this report presents the results of the FY13 Teacher Survey as well as historical trends over the last twenty years of the program.

Overall Trends

The demographics of the classroom teachers have remained relatively consistent over the years. As with the cadre of teachers in the prior decades, the respondents are generally established fifth-grade teachers with more than two years of classroom experience and who have had prior exposure to military base/personnel prior to their DoD STARBASE involvement. It is noted, however, that while more than half of the teachers have been with the DoD STARBASE program for at least two years, nearly half of the teachers (45%) indicated their first participation in the program. This reflects a 27% increase in new teachers in FY13. Budget shortages, school consolidations and downsizing of the teaching base in many of the school systems may be reflective of this change in teacher profile characteristics. In addition, there was an 11% increase in the number of teachers with four or fewer years of experience. Overall, the increase in newer teachers with less DoD STARBASE experience characterizes the major differences from the previous program years' teacher population.

As in previous years, teachers report positive attitudes towards the DoD STARBASE program and improvement in several areas of student performance. A major observation in the analysis is that the more vested the school community and teachers are in the DoD STARBASE program (i.e. utilization of DoD STARBASE materials in the classroom/homework, active communications to the community, school administrative support, parental involvement, etc.) the more positive the responses to the attitudinal items. In addition, program stakeholder support (i.e. other participant groups) increases teacher advocacy of the DoD STARBASE program. In more specific terms:

- Nearly 100% of the teachers indicate that the DoD STARBASE program, in both content and concept application, helps them to reach state requirements either directly (94.9%) or indirectly (4.7%).
- Over 90% of the teachers have recommended the program to others.
- Close to 65% of the teachers use DoD STARBASE materials in their classroom and about 43% use program materials for take-home activities that go beyond classroom requirements.

Specific analysis on the teacher demographics, program experiences and attitudinal perceptions follow the Historical Trends analysis.

Historical Trends

The Teacher Survey was introduced as a formal component of the DoD STARBASE evaluation program during the FY00-FY01 program year. During the first four years of conducting the survey, the average number of respondents was about 90 per year. In the four years prior to FY13, the number of respondents has averaged just over 1,600 per year. This year over 2,100 teachers participated in the survey, a 22% increase over last year. Over the 13-year span of the survey, teacher responses have remained consistently high on most of the dimensions measured by the survey despite a drop in FY13 compared to FY12.

A few trends bear attention when comparing the last two years (FY12 and FY13) to the three previous combined years (FY09 through FY11). While the ratings for all three periods are consistently high on the seven-point scale, the last two years are higher in student responses to: "More interested in learning about math", "Increased participation in the science fair", "Parents delighted children are participating in DoD STARBASE", and "My school board is very involved in supporting DoD STARBASE". The following chart illustrates the trends over the past five years in favor of the FY12 and FY13 periods as compared to the previous combined three years in student involvement in math, science as well as in participant group support, e.g. parents and school board (see Figure 8 and Figure 9).

Math/Science Increases Over the Past 5-Year Period

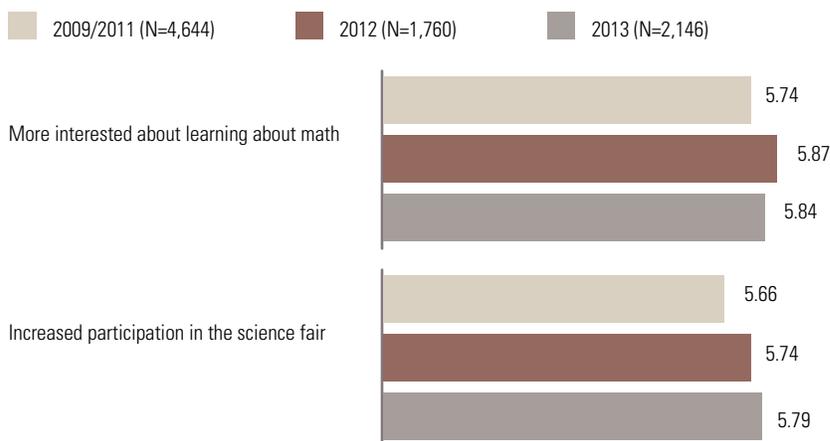


Figure 8.

Participant Group Effectiveness Increases Over the Past 5-Year Period

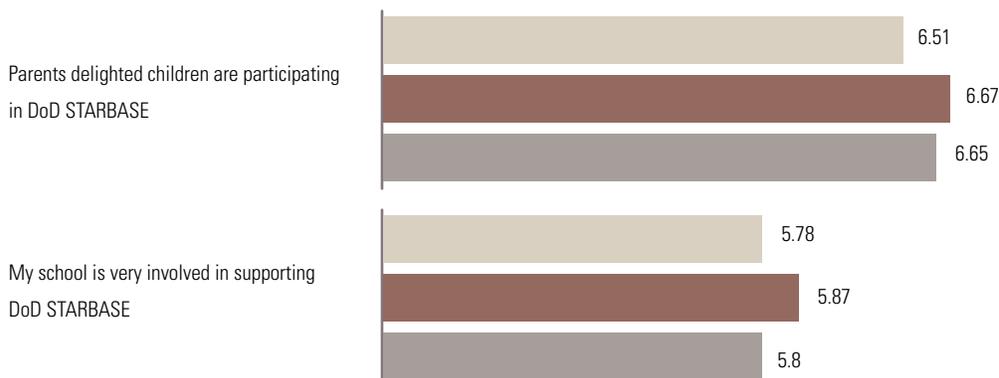


Figure 9.

Overall, the recent (i.e., FY12 and FY13) trends in teacher attitudes related to DoD STARBASE have exceeded the level of favorability seen in the three years prior to FY12. Given the program expansion, with triple the number of academies and a 22% increase in survey respondents this year alone, this suggests that DoD STARBASE is attaining a reliable degree of program consistency.

While average ratings have increased over the years, it is worth noting that the teacher ratings on the Overall Index were lower in FY13 than in FY12 (6.13 vs. 6.26). There are likely a number of reasons for the drop between FY12 and FY13:

- There was a 27% increase in the proportion of teachers new to DoD STARBASE in FY13 over FY12. Prior surveys have shown that teachers with more DoD STARBASE experience give the program higher ratings.
- There was an 11% increase in the proportion of teachers with four or fewer years of teaching experience in FY13 compared to FY12. Prior surveys have indicated that more experienced teachers give the program higher ratings.
- Five Effectiveness Factor items and one Military Factor item were dropped in the FY13 survey. A new composite, Career, based on new items added to the survey was incorporated into the Overall Index. The mean on the Career Factor (5.97) was lower than the other factor means. This lower mean impacted the Overall Index. It may be that fifth-grade students (the largest student cohort in this year's survey) do not spend significant time reflecting on their future careers or that their teachers don't take notice of these reflections.

Lastly, three new items designed to measure various aspects of teacher advocacy for the DoD STARBASE STEM component were added to the Teacher Survey this year. These items were designed to measure: 1) teachers' opinions about how to best develop students' STEM skills and abilities beyond DoD STARBASE, 2) teachers' knowledge of STEM programs in the school or community, and 3) teachers' plans to refer students to additional STEM programs. These three items did not meet the statistical criterion needed to be combined into a reliable composite measure. However, the third item asking about teachers' plans to refer students to additional STEM programs was used in the regression analyses as an advocacy criterion.

DoD STARBASE Teacher Survey Analysis

Classroom Teacher Demographics

The response rate to the FY13 Teachers' Survey was the largest in program history with 2,146 respondents. This is a 22% increase from the FY12 survey with 1,781 female teachers (83%) and 365 males (17%) responding. The teacher age cohorts were dominant in the younger groupings with 17.8% of the teachers under 30 years of age and the 31 – 40 years of age cohort comprising 31% of the total teacher population. Table 47 characterizes the teacher population over the last three program years based on years of teaching experience, grade level taught, prior military exposure and DoD STARBASE participation.

There was a slight increase over the three years in the concentration of teacher participants at the fifth grade level with 82.6% in FY13 as compared to 76.4% in FY11. Approximately 75% of the teachers had visited a military base prior to the 2012-2013 DoD STARBASE program but approximately 35% visited a military base for activities unrelated to the program. Over 45% of the FY13 teacher populations were new to the DoD STARBASE program which is a 27% increase over last year. In addition, there was an increase of 11% of teachers with less than four years of teaching experience. The FY13 participating teachers were younger, less experienced, and newer to the DoD STARBASE experience.

**Table 47:
Teacher Characteristics Over a 3-Year Period (2011-2013)**

Response	2011 (N=1,510)		2012 (N=1,760)		2013 (N=2,146)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Grade Taught						
Grade 3	1	0.1%	0	0.0%	0	0.0%
Grade 4	99	6.6%	86	4.9%	120	5.6%
Grade 5	1,154	76.4%	1,426	81.0%	1,772	82.6%
Grade 6	103	6.8%	93	5.3%	128	6.0%
Grade 7	8	0.5%	4	0.2%	1	0.0%
Grade 8	10	0.7%	13	0.7%	7	0.3%
I am a special class teacher.	24	1.6%	39	2.2%	28	1.3%
I am a teaching assistant.	27	1.8%	31	1.8%	23	1.1%
I am an administrator.	11	0.7%	3	0.2%	4	0.2%
Other ¹⁷	73	4.8%	65	3.7%	63	2.9%
Ever visit a military base prior to your current DoD STARBASE involvement?						
Never, this is my first DoD STARBASE Program.	252	16.7%	341	19.4%	540	25.2%
Yes, for prior DoD STARBASE programs only.	420	27.8%	447	25.4%	369	17.2%
Yes, for activities not related to DoD STARBASE.	384	25.4%	430	24.4%	748	34.9%
Yes, for DoD STARBASE and non-DoD STARBASE activities.	405	26.8%	487	27.7%	393	18.3%
Other ¹⁸	49	3.2%	55	3.1%	96	4.5%

Continued on next page

¹⁷ The majority of the "Other" responses include teaching a combination of different grades (e.g., grades 4 and 5), focusing on specific content areas (e.g., math or science), a specialized teacher (e.g., special education, paraprofessional), or a counselor (e.g., school counselor, peer facilitator).

¹⁸ The majority of the "Other" responses include family members either active or inactive/retired from the military with a few attending a base for an aviation festival or an air show, or teaching at a school on a military facility.

**Table 47: (Continued)
Teacher Characteristics Over a 3-Year Period (2011-2013)**

Response	2011 (N=1,510)		2012 (N=1,760)		2013 (N=2,146)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Number of years with DoD STARBASE						
This is my first year	527	34.9%	626	35.6%	969	45.2%
2-4 years	635	42.1%	697	39.6%	686	32.0%
5-7 years	209	13.8%	291	16.5%	306	14.3%
8-10 years	89	5.9%	93	5.3%	125	5.8%
11-15 years	41	2.7%	37	2.1%	39	1.8%
Over 15 years	9	0.6%	16	0.9%	21	1.0%
Number of years teaching						
This is my first year	92	6.1%	81	4.6%	31	6.1%
2-4 years	205	13.6%	217	12.3%	273	12.7%
5-7 years	226	15.0%	243	13.8%	292	13.6%
8-10 years	192	12.7%	235	13.4%	276	12.9%
11-15 years	263	17.4%	335	19.0%	449	20.9%
Over 15 years	532	35.2%	649	36.9%	725	33.8%

DoD STARBASE'S Impact on the School System

DoD STARBASE incorporates state requirements as well as national objectives into curriculum design. As a consequence, teachers and school administrators recognize DoD STARBASE's contribution and support in helping students meet these objectives as reflected in the survey results and in visitation inquiries. The positive results in state and national tests for those students who participate in the DoD STARBASE program is recognized by teacher and administrative participants. It is important to emphasize that DoD STARBASE is neither in competition with nor a replacement for a schools' STEM curriculum but offers students an authentic STEM experience to enhance their classroom experience.

As part of the Teacher Survey, teachers were asked to share their knowledge of specific practices in their school that help create support for the DoD STARBASE program. These range from building community awareness to using classroom educational materials themselves (see Table 48). Use of DoD STARBASE materials in their classrooms increased proportionately by over 6% for the FY12-13 program year over the average of the last two program years indicating increasing confidence in the materials by teachers. A large majority of teachers (91.9%) indicated that they have recommended DoD STARBASE to other teachers, principals or school systems. This is an average 3% increase over the last two program years. This gradually increasing trend demonstrates the value teachers place on the program. In addition, most teachers report that the DoD STARBASE program content helps the school reach state requirements either directly or indirectly (94.9% and 4.7%, respectively) which provides further documentation that academic success is helped through the DoD STARBASE program.

There were decreases in affirmation in two areas: formal communications by the schools to the community (45.3%) and the use of DoD STARBASE materials for take-home applications (43.0%). Both of these areas were less favorable but still positive areas than past surveys. With the aforementioned 45.2% increase in new teachers in FY13 as well as less experienced members (77.2% with less than four years of teaching), their familiarity with school initiatives and processes are less well-known and may account for the lower level of involvement. Higher scores were obtained on items where teachers are more intimately aware.

Table 48 suggests teachers place high value on the program and its influence on their teaching approach and school system. Their belief that the program's contribution and support in achieving state academic objectives in reaching STEM objectives is manifest. This view is consistently reinforced by comments from interviews with teachers during visitations.

Table 48:
DoD STARBASE's Impact on the School System

Item	Positive (Yes) Responses	Positive (Yes) Responses	Positive (Yes) Responses
	2011	2012	2013
Is there formal communication from the school that raises community awareness of the DoD STARBASE program?	48.8%	50.5%	45.3%
Do you use DoD STARBASE materials/applications in your own classroom?	60.3%	60.1%	64.2%
Do you have DoD STARBASE take home/follow-through activities beyond your classroom presentation?	59.6%	58.8%	43.0%
Have you recommended DoD STARBASE to other teachers, principals, or school systems?	88.6%	89.5%	91.9%
In your view, do the DoD STARBASE content and concepts help you reach your state requirements either directly or indirectly?	94.8%	96.5%	99.6%

School and Teacher Involvement and Teacher Attitudinal Ratings

The items described in the previous section on the teachers' estimate of the program's impact on the school system were compared to a cumulative index of close to 40 attitudinal items. These attitudinal items were rated in a seven-point Likert scale from Strongly Disagree (1) to Strongly Agree (7) based on the teachers' experiences with the DoD STARBASE program. The mean teacher attitude scores were combined into a cumulative index and compared to the indicators previously discussed on the impact of the program on the school and support system constructs. This comparison provides a way to determine the relationship between school and teacher involvement to the degree of positive or negative attitudes.

The results of this analysis were consistent with previous assessments where teachers who received support from the school in DoD STARBASE activities and utilization of DoD STARBASE resource materials in their classroom responded more favorably to the DoD STARBASE program as compared to those teachers who pursued no school support nor utilized proffered materials. Figure 10 provides the average mean ratings on each of the support/impact constructs. The figure highlights specific outcome comparisons to include:

- Schools that promoted DoD STARBASE through formal communications had higher attitudinal ratings (6.29 mean) than those schools that did not have formal communication plans (6.03)¹⁹.
- Teachers that used DoD STARBASE materials in class and for take-home activities responded more favorably (6.27 and 6.38, respectively) than those teachers who did not utilize the material (5.82 and 5.91, respectively).
- Almost all of the teachers reported that the program helps them reach state requirements either directly or indirectly. Those who indicated a more direct relationship (95%) reported more positive attitudes (6.19) than those seeing only an indirect relationship (5.19).
- For those teachers who recommended DoD STARBASE to others (92%) and implicitly placed value on the program, the favorable rating was 6.21 as compared to those who did not (5.32). The latter group comprised only 8% of the participant teachers.

Compared to previous years, the gap score for the favorable responses were larger than the gap scores for those who responded negatively. Overall, the positive support for DoD STARBASE compared to the less supportive group indicates that involvement by teachers and school systems reflects positive teacher endorsement, attitudinal preferences and advocacy by the teachers.

Significant Differences in Average Teacher Attitudes by Response to Key Support Actions

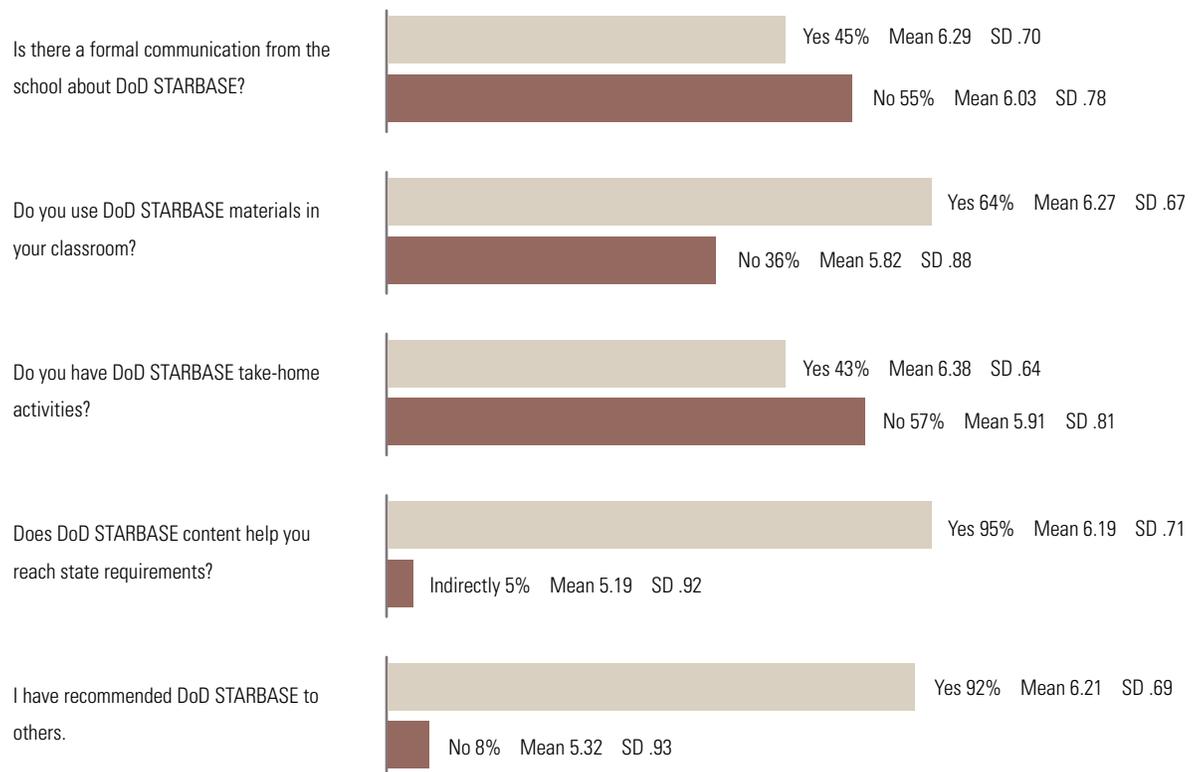


Figure 10.

¹⁹ This mean rating score is based in a seven (7) point Likert scale.

DoD STARBASE Evaluation Index and Teacher Attitudes

The attitudinal items on teacher perceptions were grouped into five basic constructs for evaluating the effectiveness of the DoD STARBASE program. In addition, an overall combined index was also developed as the average of all the attitudinal items.

- STEM—science, technology, engineering and math
- Citizenship and pro-social attitudes
- Perception about the military
- Overall effectiveness of DoD STARBASE
- Career reflections for the future

In FY10, the core curriculum content was updated to improve and align each of the core construct areas to enhance STEM topics, expand more problem solving applications and realize unit objectives with well-defined and measurable outcomes. This process continues with updates, revisions and enhancements as the field-testing of its effectiveness unfolds. While there have been several changes in content and unit objectives, the areas of construct focus have remained relatively consistent during this process allowing for general comparisons over the program years. A few notable changes were made in the attitudinal instrument for FY13. Five attitudinal items from the “effectiveness” construct and one item from the “military” dimension were dropped and a new “career” construct was added. All of the attitudinal items are aggregated into an Overall Mean Index (see Table 49) to compare yearly assessment across the tested years.

Over the past decade the mean ratings were high on a seven-point Likert scale and presided within the 6.10 – 6.26 range. Fluctuations do exist but all within a 0.16 gap difference. The overall index of 6.13 in FY13 was significantly lower than the high 6.26 index achieved in FY12 but well within the middle range of the mean score before FY09. The broadening of the overall construct and the curriculum changes may have introduced the most recent mean score, however, overall the mean attitudinal teacher ratings have tended to document an upward trend over the past few years. The mean for the last five years is 6.22 while the mean for the prior years was 6.12. This suggests that the program displays greater continuity on these dimensions even in a period of great program growth and change as displayed in Table 49.

Table 49:
Mean Overall Attitudinal Index Scores for the Teacher Survey (2003-2013)²⁰

	Year										
Overall Index	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
(Summative Mean Ratings)	6.10	6.15	6.17	6.10	6.08	6.14	6.24	6.26	6.22	6.26	6.13

²⁰ The calculations included in this table are the total mean responses for all attitudinal items.

Gap Differences By Teacher Attitudinal Ratings On Assessment Group Factors

Another indication of the impact of improvements made to the DoD STARBASE program relate to the gap differences in annual average mean attitudinal ratings. Table 50 displays the averaged ratings and gap differences for the Overall Index and the five content evaluation constructs over the past five years.

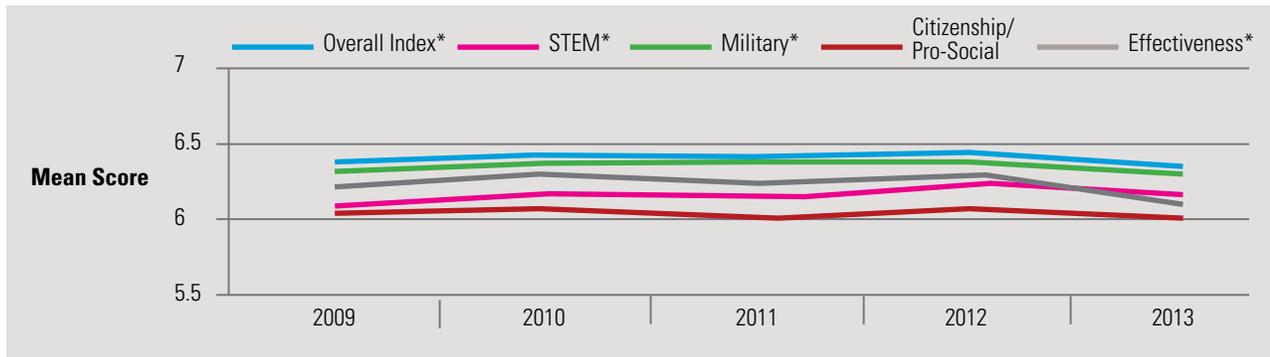
During the period of FY10 to FY12, the declines in FY11 were replaced with modest gains in FY12. In FY13 the ratings displayed slight decreases again. The largest gain since FY09 has been in the STEM area with a gap of +0.07 indicating the overall importance and program emphasis placed on these content areas. Certainly the new curriculum that was introduced in FY10 may have been the contributing factor. Since FY09 almost all evaluation ratings, including the Overall Index, are well positioned at above the 6.00+ level on a seven-point Likert scale.

**Table 50:
Average Mean Ratings and Gap Difference Scores by Assessment Group Factors (2009-2013)**

Factor Items	Year					Gap Difference
	2009	2010	2011	2012	2013	
Overall Index	6.24	6.26	6.22	6.26	6.13	-.11
STEM	6.10	6.17	6.16	6.21	6.17	+0.07
Military	6.36	6.37	6.36	6.39	6.29	-.07
Citizenship/Pro-Social	6.06	6.07	5.98	6.03	6.01	-.05
Effectiveness	6.41	6.41	6.39	6.44	6.35	-.06
Career	N/A	N/A	N/A	N/A	5.97	N/A

Content Area Factors and Teacher Ratings

Figure 11 illustrates the content area mean rating factors from FY09 through FY13 as well as the Overall Index. Mean scores have been relatively consistent over the years or very near a mean of 6.00 for areas measuring the core STEM content, perceptions relating to the military (e.g., personnel), overall effectiveness/impact of the DoD STARBASE program and citizenship/pro-social attitudes. Considering that the mean has a ceiling of 7.00, these values reflect high teacher endorsement of these DoD STARBASE components. The newly added Career Factor had a mean teacher rating of 5.97 which was the lowest of the five component areas in FY13. This could indicate that the (mostly fifth-grade) students participating in DoD STARBASE do not spend a substantial amount of time reflecting on their future careers or possibly that the teachers comprising the survey sample are not especially attuned to paying attention to the students' future career interests. It may be that in future program years teachers could benefit from training on the relevance of the DoD STARBASE program to the students' career enhancement.

Teacher Ratings by Factor (2009-2013)**Figure 11.**

*Represents a statistically significant difference ($p < .05$)

Teacher Attitudinal Ratings on STEM Activities

Teacher attitudes reflecting core curriculum content are measured by six items focusing on math, science and technology. Table 51 provides the ratings of each of the items over the past five years. In FY12, teachers reported a dramatic student improvement on all STEM items with a slight decline in the FY13 program year; however ratings were still generally higher than the FY09 – FY11 survey results. One of the areas that continue to obtain increases over time is that of student participation in science fairs.

**Table 51:
Teachers' Perceptions of Student Interests and Behavior Related to Math, Science, and Technology (STEM) 2009 - 2013**

Items	Mean Scores Across Years				
	2009	2010	2011	2012	2013
More interested in learning about math	5.67	5.77	5.79	5.87	5.84
More interested in learning about science	6.54	6.54	6.51	6.56	6.54
The students ask more questions about technology	5.90	5.90	5.91	5.95	5.93
DoD STARBASE has helped improve the students' understanding of science	6.61	6.60	6.54	6.59	6.57
DoD STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	6.12	6.23	6.26	6.32	6.30
After DoD STARBASE attendance, there is increased participation in the science fair	5.53	5.78	5.66	5.74	5.79
Combined STEM Mean Score	6.10	6.17	6.16	6.21	6.17

Teacher Attitudinal Ratings and Rankings Over the Last Five Years (2009-2013)

Ratings are important in that they provide a measure of intensity of the teachers' attitudinal perceptions. Table 52 provides the top 10 rated attitudinal items with a five-year historical comparison rank-ordered by favorability on FY13 mean ratings. Overall, teachers rate the experiential aspects of the program for themselves, their students and their student families as the highest. Over half of the top ten items refer to the teachers' feelings about the program experience and its immediate or future impact. Two of the three highest rated items in FY13 are future-oriented toward anticipated benefits. Teachers also have high regard for DoD STARBASE instructors, as evidenced by the top rating of the instructors as role models. This item has always ranked in the top three over the years. In addition, teachers give high ratings in FY13 to the impact of DoD STARBASE on key learning objectives, especially with respect to science. All of the top ten items have a mean rating above 6.00 (6.44 – 6.85).



Table 52:
Top 10 2013 Teacher Ratings Over a 5-Year Period (2009-2013)

2013 Rank	Item	2009	2010	2011	2012	2013
1	The DoD STARBASE instructors are good role models for the students.	6.84	6.84	6.80	6.85	6.85
2	I look forward to my classes' continued participation in the DoD STARBASE program.	6.85	6.83	6.81	6.86	6.83
3	The DoD STARBASE experience has been a positive influence on me personally.	6.76	6.73	6.71	6.75	6.72
4	The students enjoyed being on a military base.	6.61	6.63	6.66	6.67	6.71
5	Parents are delighted that their children are participating in DoD STARBASE.	6.63	6.62	6.59	6.67	6.65
6	DoD STARBASE reinforces many positive behaviors I try to teach my students.	6.71	6.69	6.65	6.67	6.64
7	DoD STARBASE has helped improve students' understanding of science.	6.61	6.60	6.54	6.59	6.57
8	More interested in learning about science.	6.54	6.54	6.51	6.56	6.54
9	The students talk about DoD STARBASE long after the program has ended.	6.61	6.59	6.58	6.50	6.52
10	After attending DoD STARBASE, students understand better that developing their current skills/abilities is necessary to have good future career choices. (New item in 2013)	NA	NA	NA	NA	6.44

Comparison of Attitudes Across Teacher Experience and Characteristics

DoD STARBASE and Teaching Experience

Shifts in teacher attitudes are fairly consistent across years of teaching experience in general and years of teacher experience with DoD STARBASE in particular. Teachers with more experience with DoD STARBASE and more teaching experience typically reported more positive attitudes and behaviors on average for each summary factor (STEM, Military, Citizenship, Effectiveness, Career and Overall Index).

Experience with DoD STARBASE: Generally, teachers with more experience with the DoD STARBASE program tended to respond more positively than teachers with less experience (see Figure 12).

There were statistically significant differences by years of DoD STARBASE experience for the Overall Index, STEM and Military Scales.

- On the Overall Index, teachers with 2-7 years of experience gave higher ratings than did first-year participants.
- On the STEM Index, teachers with over 10 years of experience gave higher ratings than did first-time participants.
- On the Military Index, teachers with over 10 years of experience gave higher ratings than did first-year participants.

Teachers with more than ten years of teaching experience had significantly higher ratings on all construct factors and the Overall Index than did teachers with two to four years of experience (see Figure 13).

Shift in Teacher Attitudes Based on Number of Years with DoD STARBASE

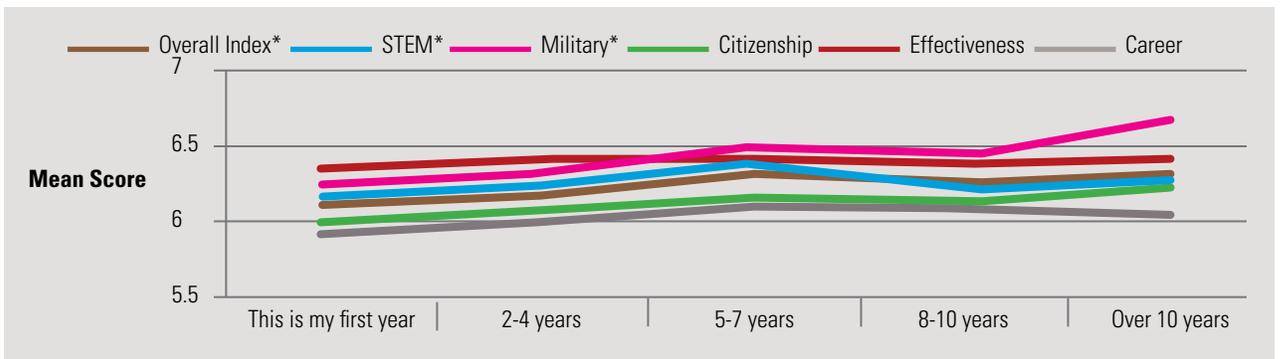


Figure 12.

Shift in Teacher Attitudes Based on Number of Years of Teaching Experience

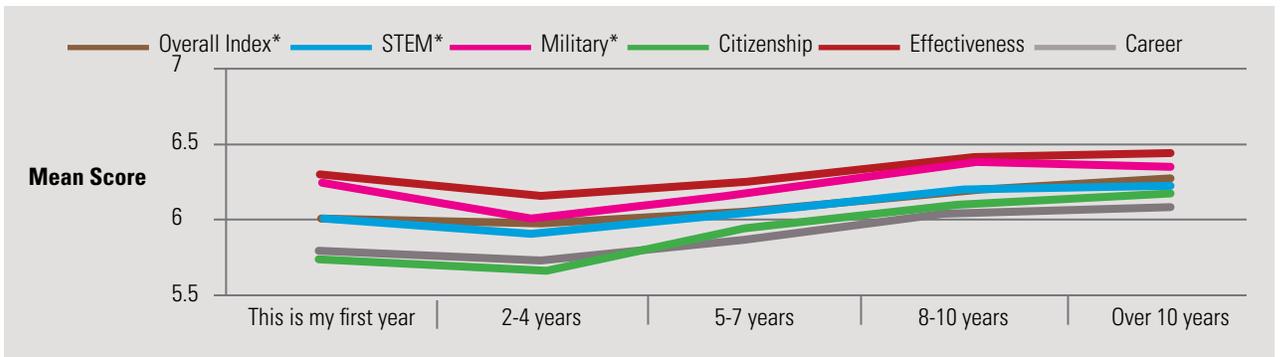


Figure 13.

*Represents a statistically significant difference ($p < .05$)

Military Base Familiarity

In the past, teachers with prior experience and familiarity with military bases, either through DoD experiences or independently, proved to be more favorable on attitudinal constructs. That experience is reflected in this year's analysis for those who experienced military activities through DoD STARBASE activities. The favorability was slightly higher but not statistically significant. This may be partially attributed to the younger, less experienced teacher grouping that became part of this year's teacher participant group. The construct that received the most favorable ratings was "Effectiveness" while the "Career" area construct was the least favorable (see Figure 14).

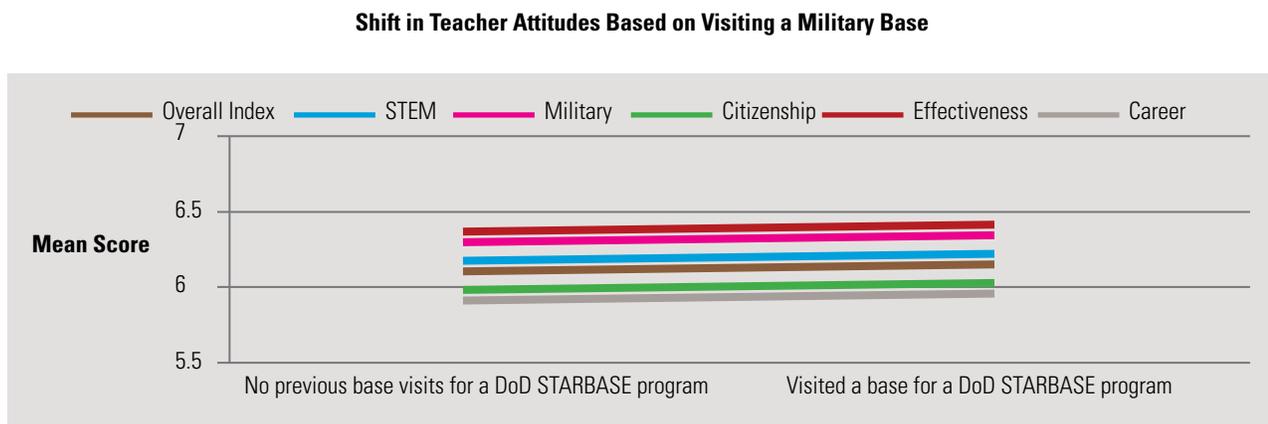


Figure 14.

All of the construct areas improved in teacher attitudinal ratings upon visitations through DoD STARBASE experiences.

Drivers of Target Ratings in Teacher Opinion

Stepwise multiple regression analyses were utilized to determine the important drivers of key teacher attitudes and ratings about DoD STARBASE. Program personnel and curriculum developers may identify and utilize action items from the cluster of attitudinal properties below since there would be increases in student outcomes when the drivers are supported.

The key teacher ratings selected this year were determined to be: 1) estimates of teachers' perceived student outcomes or gains made by students on specific dimensions, and 2) teacher advocacy of the DoD STARBASE program.

- Perceived Student Outcomes
 - Students performing better on standardized state assessments
 - Increases in students' school attendance
 - Increases in students' participation in the science fair

The predictive model selected for perceived student outcomes was that the more support teachers received from their various stakeholders that teachers believed they received the better the outcome ratings by the teachers (see Table 53). The significance of the overall model, as well as the significance of any changes in the model as variables were entered, was evaluated via stepwise multiple regressions. Results showed that, as ratings of support from each stakeholder group were entered into the

model, significant increases in prediction of perceived student outcomes were evident. Thus, as support grows so do teachers' perceptions of student outcomes. Since the multiple correlation (R) provides a quantitative measure of how well the combination of survey items contributes to the target attitude based on the chosen model, consideration may need to be given to building stakeholder support to improve the student performance.

- Teacher advocacy of the DoD STARBASE program
 - The predictive model selected for teacher advocacy was that the greater the teachers' perception of the students' outcomes the more likely the teachers would be advocates of the program. This is evident by their plans to refer students to additional STEM programs or resources after DoD STARBASE to sustain their enthusiasm and knowledge development. Additionally, a second model evaluated with regard to teacher advocacy was that the more support teachers believed they received from the various stakeholders the more likely the teachers would be a program advocate. As can be seen in Table 53, similar to the results for the models involving student outcomes, perceived program effectiveness and perceived stakeholder support were significant predictors of teacher advocacy.
 - The overall implication of these findings is that perceived stakeholder support predicts teachers' perceived program effectiveness. Additionally, perceived program effectiveness and perceived stakeholder support predict teacher advocacy of the DoD STARBASE program. DoD STARBASE academies that put forth effort into "selling" key stakeholders can influence teachers' positive perceptions and advocacy for further STEM-related programs and activities for their students beyond the initial DoD STARBASE experience.



**Table 53:
Drivers of Key Target Ratings**

Target Rating	Drivers of Target Ratings	R
Students that attend DoD STARBASE perform better on standardized state assessments.	Parents are delighted that their children are participating in DoD STARBASE.	.388*
	My school board is very involved in supporting DoD STARBASE.	.466*
	My principal is a strong advocate of DoD STARBASE.	.489*
	Overall model	.489*
After DoD STARBASE students have better school attendance.	My school board is very involved in supporting DoD STARBASE.	.394*
	Parents are delighted that their children are participating in DoD STARBASE.	.466*
	My principal is a strong advocate of DoD STARBASE.	.478*
	Overall model	.478*
After DoD STARBASE attendance there is increased participation in the science fair.	My school board is very involved in supporting DoD STARBASE.	.461*
	Parents are delighted that their children are participating in DoD STARBASE.	.519*
	My principal is a strong advocate of DoD STARBASE.	.544*
	Overall model.	.544*
I plan to refer students to additional STEM programs or resources after DoD STARBASE.	After DoD STARBASE attendance there has been increased participation in the science fair.	.310*
	After DoD STARBASE students have better school attendance.	.339*
	Students that attend DoD STARBASE perform better on standardized state assessments.	.349*
	Overall model	.349*
I plan to refer students to additional STEM programs or resources after DoD STARBASE.	My school board is very involved in supporting DoD STARBASE.	.226*
	My principal is a strong advocate of DoD STARBASE.	.260*
	Parents are delighted that their children are participating in DoD STARBASE.	.271*
	Overall model	.271*

* Statistically significant Multiple Correlations ($p < .05$)

Teacher Assessment Summary

Classroom teachers have expanded their roles over the last five years in the DoD STARBASE program. They have become a critical partner with DoD STARBASE to provide an authentic STEM experience for their students. The survey results emphasize the importance of teacher participation and validate their strong confidence in the positive effects the DoD STARBASE program has on student performance, positive self-image and the impact on STEM education. Over the years, teachers have been a strong promoter of the DoD STARBASE program; the critical difference is that teachers are now expanding their range of involvement beyond advocacy to one of a proactive essential agent to obtain desired outcomes.

Considerations for the **2014 PROGRAM YEAR**

The annual report traditionally concludes the results of its assessment and the activities of the program year with a proposed list of “considerations” on all aspects of the program operation, delivery, research applications, and new program initiatives. The objective of this section is to guide planned and purposeful improvement in every dimension of the program. Therefore, it is important that considerations are obtained from multiple sources. They include the views of key participants, such as the classroom teachers, school administrators, military base personnel, base commanders, DoD STARBASE staff, students, volunteers, and interested observers of the program.

The assessment process captures valuable information from each of these key participant groups through surveys, reports on operational activities, after-action investigations, compliance activities, academy visitations, reviews of academy documents, observations of program activity, and special ad-hoc studies on newly established initiatives. The “considerations” dimension explains the implications of this data for program applications and the potential for improving operational activities.

This year, as in the past, the considerations and challenges are positioned and designed to be supportive of improving program operations, practices, policy implementation, and the integration with national strategic initiatives. The key “considerations” include:

Participant Group Involvement

Collaborations with Other STEM Programs

- Assess potential collaborations with other STEM programs for those academies at Level III consideration. Key components should include the program’s ability to be timely, be sustainable, be results-obtainable, foster student skills enhancement, and have the potential to obtain downstream involvement.

Classroom Teachers

- Expand the documentation provided by participating teachers on STEM program referrals, community STEM programs, downstream activities, mentoring, after-school STEM activities, etc.
- Identify teachers who are strong believers in the positive efficacy of the program and solicit these teachers to be prime movers in promoting advocacy initiatives downstream.
- Each DoD STARBASE should review the survey responses from participating teachers responses to-date in January and evaluate program operations based on feedback from those teachers.
- The teacher survey indicates that favorable teacher attitudes toward the DoD STARBASE program, the military, and STEM are related to enhanced student performance on STEM assessments as well as positive student attitudes toward STEM and the military. These results suggest it may be beneficial to:
 - Expand teacher visitations to the military base and the DoD STARBASE program prior to their classroom and program involvement.
 - Formally and programmatically communicate the relationship of the DoD STARBASE programs’ knowledge and attitudinal impact on the students’ STEM performance to the schools/community.
 - Consider alternative activities for teacher involvement in program activities, including teacher seminars to expand teacher advocacy/support roles, especially in STEM.

Program Operations

- The current uncertainty in funding the DoD STARBASE program has produced a number of consequences, both anticipated and unanticipated, that have affected staff retention, participant group commitments, sponsorship relationships, program delivery, STEM partnerships, etc. This impact and current capabilities of each academy need to be captured via a case-study analysis.
- Validate those academies that are ready for a Level III review in FY14 to obtain the desired relationships with other STEM groups and their sustainability independent of DoD.
- Give feedback in FY14 to each academy on their Academy Performance Status (Levels I – III) and any outstanding requirements to obtain a higher level assessment.
- A MOU prototype should be considered for downstream partnership and participant-group involvement. Clear distinctions of each participant's role, length of involvement and stated program objectives should be included.
- The DODI should be revised to include all current program information as soon as possible. This is especially critical due to the loss of experienced DoD STARBASE personnel who were familiar with program operations.
- Priority should be given to obtain financial and program stability for all DoD STARBASE locations in order to avoid further erosion of the program.
- Locations impacted by staff departure due to program uncertainties will require additional support to maintain program quality and consistency. Additional staff visits or group training may be required to orient new staff members to DoD STARBASE program operations and norms.

Curriculum

- Have the Curriculum Committee devise a standardized framework for delivering the curriculum objectives that optimize their effectiveness.
- Develop a user-friendly template with directions to assist directors creating a curriculum schedule. In addition, a brief workshop should address this topic at the next professional development conference.
- When lesson plans are submitted for review and acceptance, the plans should include two to three suggested test items that meet the submitted lesson plan objectives and content changes. This is not designed to replace the assessment staff's role in test development, but to enhance, enlarge, and include academy staff in the process.

Student Testing

- Provide a diagnostic protocol for the student assessment to DoD STARBASE directors. The pre-post student assessment has several potentially useful diagnostic considerations for program operations and delivery. This would require the development of diagnostic materials for academy instructors and staff. How to use the test results for upgrading program operation strategies is the objective in diagnostic applications. For example, the pre-test provides an excellent overview of where the students have knowledge/skills abilities or deficiencies upon entry to the program. The data dramatically describes the wide differences between academies on subject-matter area strengths and weaknesses by selected school system populations. Gap scores and performance indicator potential is affected by student entry-level capability. Post-assessment diagnostics are helpful in identifying the strengths and weaknesses in program delivery strategies.



- Continue to refine the test items on the knowledge test and build an inventory of test items.
- Send a reminder of administration protocols to staff at the start of the testing period to continue progress toward a less than 5% loss rate in pre-post matching.
- Have the DoD STARBASE liaisons at PTC submit suggested test items that meet the objectives of the mandatory PTC lessons for inclusion on the student knowledge test.
- Include an item on the attitudinal test to inquire how many STEM activities students are currently involved in.

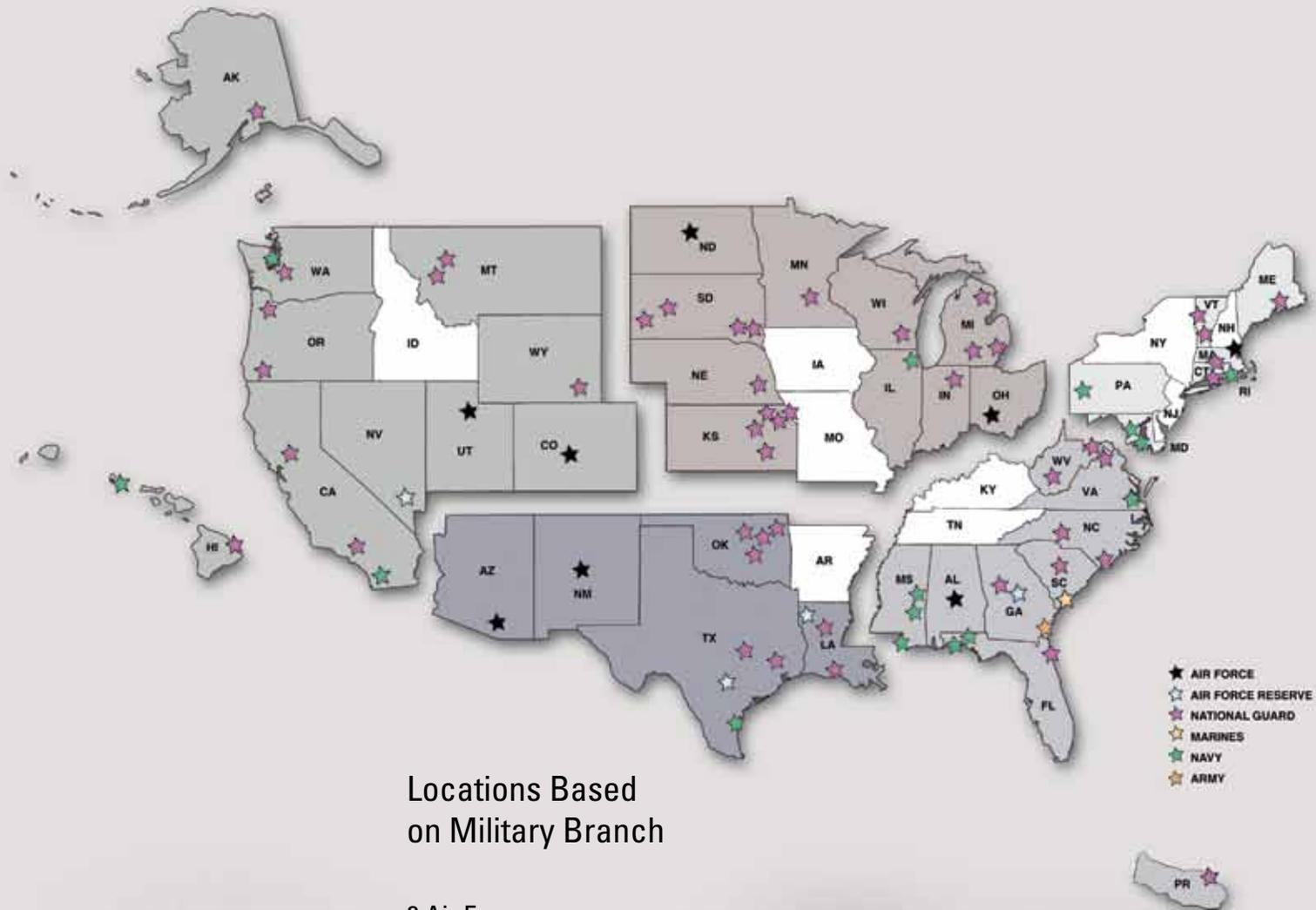
DoD STARBASE 2.0

- Survey mentors, coordinators, and instructors participating in DoD STARBASE 2.0 to document their experiences, sense of effectiveness, and the program's ability to meet objectives in applying STEM principles.
- Document the sustainability of the 2.0 program in terms of the programs' independence from the DoD support system, the retention of mentors, and the retention of students.
- Develop an interest survey to administer to 2.0 student participants to assess their interests and desires to expand the program at the high school level.



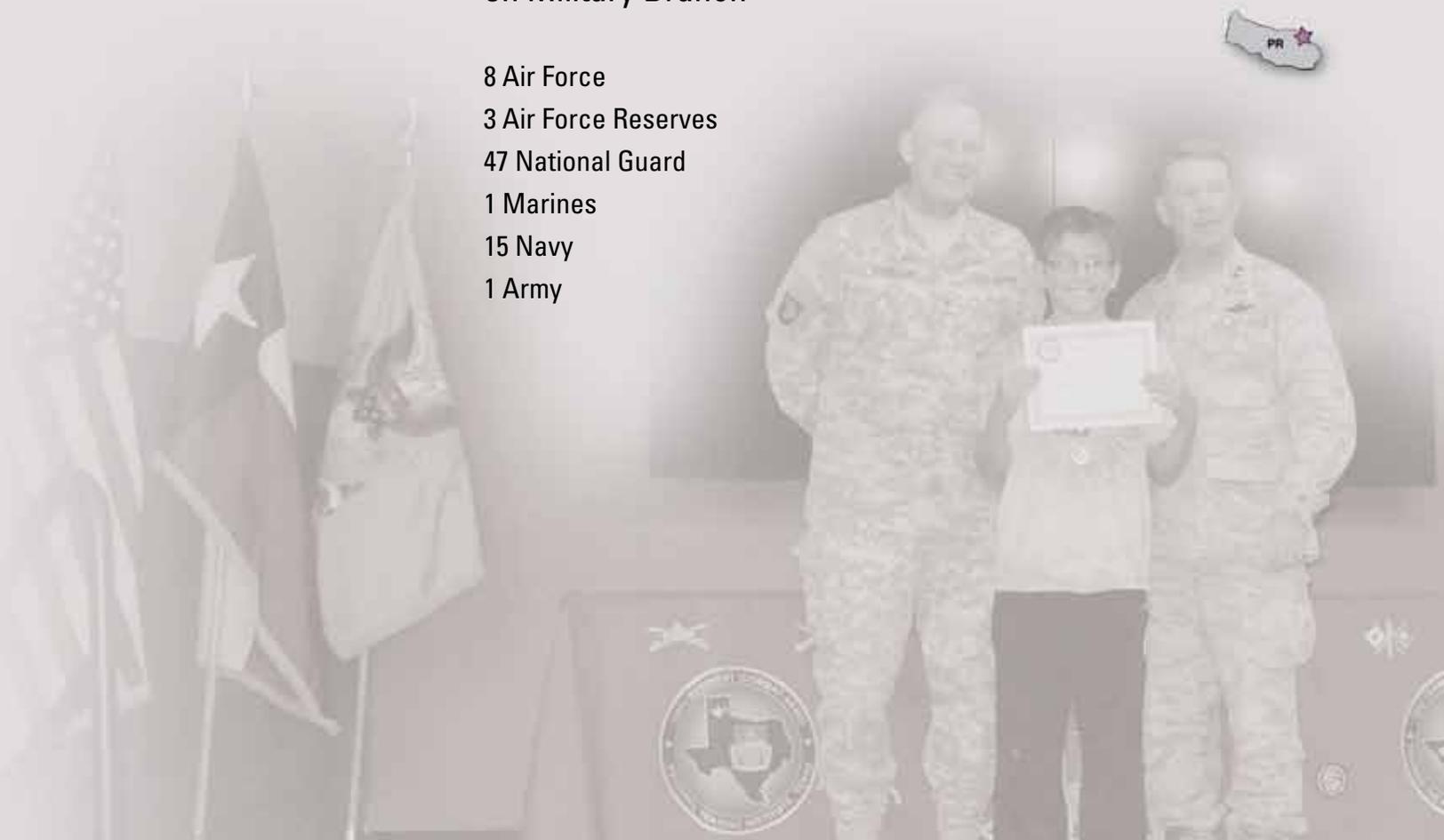
APPENDICES





Locations Based on Military Branch

- 8 Air Force
- 3 Air Force Reserves
- 47 National Guard
- 1 Marines
- 15 Navy
- 1 Army



GLOSSARY

Academy: See DoD STARBASE academy.

Adjusted Data: Data derived from the same academies that were operating last year so that comparisons can be made on the internal growth of the program.

After School Programs: Center-or school-based programs regularly scheduled at least once each month during after school hours.

Alternative Education Provider: A public elementary/secondary school that (1) addresses needs of students that typically cannot be met in a regular school, (2) provides nontraditional education, (3) serves as an adjunct to a regular school, or (4) falls outside the categories of regular, special education, or vocational education. Some examples of alternative schools are schools for potential dropouts; residential treatment centers for substance abuse (if they provide elementary or secondary education); schools for chronic truants; and schools for students with behavioral problems.

American Indian or Alaska Native: A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.

Appropriations: An act of Congress that permits Federal agencies to incur obligations and to make payments out of the Treasury for specified purposes. An appropriations act is the most common means of providing budget authority.

Asian: A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

At-Risk: Being "at-risk" means having one or more family background, or other factors, that have been found to predict a high rate of school failure at some time in the future. This "failure" generally refers to dropping out of high school before graduation but also can mean being retained within a grade from one year to the next. The risk factors include having a mother, whose education is less than high school, living in a single-parent family, receiving welfare assistance, and living in a household where the primary language spoken is other than English.

At-Risk Youth: Students at risk are those who have characteristics that increase their chances of dropping out or falling behind in school. These characteristics may include being from a single-parent household, having an older sibling who dropped out of high school, changing schools two or more times other than the normal progression (e.g., from elementary to middle school), having C's or lower grades, being from a low socio-economic status family, or repeating an earlier grade.

Black or African American: A person having origins in any of the black racial groups of Africa. Terms such as "Haitian" or "Negro" can be used in addition to "Black or African American."

Class: A period of 60 minutes, plus or minus 5 minutes, in which a DoD STARBASE Academy instructor is actively involved with students or in which a military member is demonstrating, displaying, or teaching an application of math, science, or technology to the students.

Classroom Contact Hour: A period of 60 minutes, plus or minus 5 minutes, in which a DoD STARBASE Academy instructor is actively involved with students, or in which a military member is demonstrating, displaying, or teaching an application of math, science, or technology to the students.

Classroom Teacher: Teacher from schools who participate in DoD STARBASE classes.

Computer-Aided Design (CAD): The use of computer systems to assist in the creation, modification, analysis, or optimization of a design. It is both a visual and symbol-based method of communication whose conventions are particular to a specific technical field.

Conferences: DoD STARBASE holds two conferences a year to provide professional development to the DoD STARBASE directors and instructors.

Core Curriculum: DoD STARBASE core curriculum is comprised of the following areas:

Physics

- A. Newton's Three Laws of Motion
- B. Fluid Mechanics and Aerodynamics

Chemistry Sciences

- A. Building Blocks of Matter
- B. Physical and Chemical Changes
- C. Atmospheric Properties

Technology

- A. Innovations
- B. Navigation and Mapping

Engineering

- A. Engineering Design Process (EDP)
- B. 3-D Computer-Aided Design (3.0 hrs as mandated by OASD/RA)

Mathematics Operations and Applications

- A. Numbers and Number Relationships
- B. Measurement
- C. Geometry
- D. Data Analysis

STEM Careers

- A. STEM Careers on Military Facilities
- B. Personal Investigations

Current Expenditures: Expenditures for operating DoD STARBASE Academies, excluding capital outlay. These expenditures include such items as salaries for school personnel, fixed charges, student transportation, books and materials, and energy costs.

Current Expenditures Per Pupil: Current expenditures for the DoD STARBASE academies divided by the total number of participating students.

Director: DoD STARBASE staff member responsible for the DoD STARBASE academy.

Disability: Any of the disabilities classified in the U.S. Department of Education's Office of Special Education Programs (OSEP), which collects information on students with disabilities as part of the implementation of the Individuals with Disabilities Education Act (IDEA). Categories of disabilities include autism, deaf-blindness, developmental delay, emotional disturbance, hearing impairment, intellectual disability, multiple disabilities, orthopedic impairment, other health impairment, specific learning disabilities, speech or language impairments, traumatic brain injury, visual impairments, and preschool disability.

DoD: Department of Defense.

DoD Components: DoD entities that have established or are in pursuit of establishing a DoD STARBASE academy, including the military departments, defense agencies, and defense field activities.

DoD Instruction (DoDI): Document that implements policies, responsibilities, and procedures for executing the DoD STARBASE program.

DoD STARBASE Academy: A DoD educational program designed to improve the knowledge and skills of students in kindergarten through twelfth grade in mathematics, science, and technology. It follows the academy model description in DoDI 1025.7.

DoD STARBASE Core Curriculum: The fixed course of study referenced in the DoDI taught by all DoD STARBASE academies. (See also Core Curriculum.)

DoD STARBASE Program: The DoD STARBASE program is authorized by Title 10 United State Code Section 2193b as a DoD science, math, and technology education improvement program. The OASD/RA administers policy and oversight; the DoD components execute the program at DoD STARBASE academies. DoD STARBASE is funded by Congress as a Civil Military Program.

DoD STARBASE Site: The location of a DoD STARBASE Academy where the program is taught.

DoE: Department of Education.

Driver: Drivers identify a set of related attitudinal clusters for the student population (i.e. when the driver is present, the set of attitudes will most likely be present, or in reverse, when the condition in the list of attitudes are present the target “driver” attitude will also be present).

Elementary School: A school with one or more of grades K–6 that does not have any grade higher than grade 8. For example, schools with grades K–6, 1–3, or 6–8 are classified as elementary.

Elementary/Secondary School: Elementary/secondary schools include regular schools (i.e., schools that are part of state and local school systems and private elementary/ secondary schools, both religiously affiliated and nonsectarian); alternative schools; vocational education schools; and special education schools.

Enrollment: The total number of students registered at a DoD STARBASE Academy at a given time, generally in the fall of the year.

Ethnicity: The minimum categories for data on race and ethnicity for Federal statistics, program administrative reporting, and civil rights compliance reporting are listed as follows: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, White.

Expenditures: Charges incurred, whether paid or unpaid.

Expenditures Per Pupil: Charges incurred for a particular period of time divided by a student unit of measure, such as enrollment, average daily attendance, or average daily membership.

Fiscal Year: The yearly accounting period for the federal government, which begins on October 1 and ends on the following September 30. The fiscal year is designated by the calendar year in which it ends; for example, fiscal year 2008 begins on October 1, 2007 and ends on September 30, 2008.

Free or Reduced-Price Lunch: See National School Lunch Program.

Gap Score: Difference between pre-program and post-program test scores.

Graduate: An individual who has received formal recognition for the successful completion of a prescribed program of studies.

High School: A secondary school offering the final years of high school study necessary for graduation, in which the lowest grade is not lower than grade 9. Usually includes grades 10, 11, and 12 or grades 9, 10, 11, and 12. Alternatively, according to the 2007–08 Schools and Staffing Survey, defined as a school with no grade lower than 7 and at least one grade higher than 8.

Hispanic or Latino: A person is of Cuban, Mexican, Puerto Rican, Cuban, South or Central American, or other Spanish culture or origin, regardless of race. The term “Spanish origin” can be used in addition to “Hispanic or Latino.”

Inner-City Location: Usually older, poorer, and more densely populated central section of a city.

Inquiry-Based Learning: A student-centered educational approach which focuses on using and learning content as a means to develop information-processing and problem-solving skills. In this approach the teacher acts as a facilitator. Students are involved in the building of knowledge through active involvement.

Instructor: DoD STARBASE educator.

Kindergarten: Includes transitional kindergarten, kindergarten, and pre-1st grade students.

Mapping: The process of using maps to chart a course.

Mathematics: The study of the measurement, properties, and relationships of quantities and sets, using numbers and symbols. A body of related courses concerned with knowledge of measurement, properties, and relations quantities, which can include theoretical or applied studies of arithmetic, algebra, geometry, trigonometry, statistics, and calculus.

Median: A number that half of the data is larger than it and a half-smaller. If the itemized data are listed in order of size, the median is the middle number in the list.

Middle school: A school with no grade lower than 5 and no grade higher than 8.

Minority: Any individual or racial/ethnic group that is not categorized as White, Hispanic, or Latino.

Nanotechnology: The science of manipulating materials on an atomic or molecular scale, especially to build microscopic devices.

National School Lunch Program: Established by President Truman in 1946, the program is a federally assisted meal program operated in public and private nonprofit schools and residential child care centers. To be eligible for free lunch, a student must be from a household with an income at or below 130 percent of the federal poverty guideline; to be eligible for reduced-price lunch, a student must be from a household with an income between 130 percent and 185 percent of the federal poverty guideline.

Native American: See American Indian or Alaska Native.

Native Hawaiian or Other Pacific Islander: A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Navigation: The theory, practice, and technology of charting a course for a ship, aircraft, or a spaceship.

Not-For-Profit Organization: A legal entity recognized or chartered by competent state authority and to which the Internal Revenue Service has given status as a 501(c) 3 tax-exempt educational organization.

OASD/RA: Office of the Assistant Secretary of Defense/Reserve Affairs.

Operational Academy: An academy that is processing students.

Participant: A DoD STARBASE student. Participant also refers to military command support units, the local sponsoring base command, community leaders, local community sponsoring committees, school systems, schools, teachers, military service volunteers, DoD STARBASE Board members, staff, and parents.

Percentile (Score): A value on a scale of 0 to 100 that indicates the percent of a distribution that is equal to or below it.

Pre/Post Application: Prior to the start of the program and at the completion of the program.

Pro E (Pro/ENGINEER): is the standard software used in 3D product design by engineers. It was created by PTC and was the first successful, parametric, feature-based, associative solid modeling software on the market. The application runs on Microsoft Windows and Unix platforms, and provides solid modeling, assembly modeling and drafting, finite element analysis, and NC and tooling functionality for mechanical engineers.

Program Year: The DoD STARBASE program year is the same as the government fiscal year, October 1 – September 30.

Public School: A school that provides educational services for at least one of grades K–12 (or comparable ungraded levels), has one or more teachers to give instruction, has an assigned administrator, receives public funds as primary support, and is operated by an education or chartering agency. Public schools include regular, special education, vocational/technical, alternative, and charter schools. They also include schools in juvenile detention centers, schools located on military bases and operated by the Department of Defense, and Bureau of Indian Education-funded schools operated by local public school districts. See also Special education school, Vocational school, Alternative school, Charter school, and Traditional public school.

Rural Location: The population and territory outside any urbanized area and the urban part of any place. Whatever is not urban is considered rural.

Salary: The total amount regularly paid or stipulated to be paid to an individual, before deductions, for personal services rendered while on the payroll of a business or organization.

Sample Population: A statistically significant representation of the total number of students tested each year.

School District: An education agency at the local level that exists primarily to operate public schools or to contract for public school services.

Science: The body of related course concerned with knowledge of the physical and biological world and with the processes of discovering and validating this knowledge.

Secondary School: A school with one or more of grades 7–12 that does not have any grade lower than grade 7. For example, schools with grades 9–12, 7–9, 10–12, or 7–8 are classified as secondary.

Site: See DoD STARBASE site.

Socio-Economic Disadvantage: A term used to describe economically deprived, poor, poverty stricken, or disadvantaged individuals or groups. (See also Socio-economic status.)

Socio-Economic Status: A measure of an individual or family's relative economic and social ranking based on such factors as father's education level, mother's education level, father's occupation, mother's occupation and family income.

STEM: Science, Technology, Engineering, and Mathematics (STEM) fields of study that are considered to be of particular relevance to advanced societies.

Supplemental Programs: These are programs that for one reason or another (e.g. below minimum hours, do not cover the 13 core curriculum areas, etc.) do not meet DoDI standards. They are more diverse than traditional DoD STARBASE programs, are often conducted during the summer months and are specially designed to reach students that do not fall under the targeted "participant" schools or are in response to requests by members of the community to serve "hard-to-reach" children. Supplemental programs are initiatives that go beyond the normal operation and obligations of the academy. In many cases, supplemental programs are established in response to the demand created by the popularity and success of the DoD STARBASE program within the community.

Teacher Certification: License granted by states for teachers to teach a given subject. In 2002, all states required a bachelor's degree that included subject matter as well as pedagogical studies; all but 10 states required basic skills tests in reading, mathematics, or general knowledge; and 31 states required subject-matter examinations.

Title I Grant Program: The federal government provides grants to local education agencies to supplement state and local education funding based primarily on the number of children from low-income families in each local education agency. The program provides extra academic support and learning opportunities to help disadvantaged students catch up with their classmates or make significant academic progress.

Tuition and Fees: A payment or charge for instruction or compensation for services, privileges, or the use of equipment, books, or other goods.

White: A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

STARBASE DIRECTORY

ALABAMA

MONTGOMERY

STARBASE Maxwell

Start Date: 2004

Service Component: Air Force

Military Location: Maxwell Air Force Base

Address:

60 W. Maxwell Blvd.

Building 835/Basement

Montgomery, AL 36112

Tel: (334) 953-4821

Director: Ruth Scott (Acting Director)

Email: scott5@knology.net

Autauga County Public Schools

Daniel Pratt Elementary School

Department of Defense Education Activity

Maxwell Middle School

Elmore County Public Schools

Millbrook Middle/Jr. High School

Montgomery County Public Schools

Catoma Elementary School

Dozier Elementary School

Wares Ferry Road Elementary School

ALASKA

JOINT BASE ELMENDORF RICHARDSON

STARBASE Alaska

Start Date: 2002

Service Component: Air National Guard

Military Location: Joint Base Elmendorf-Richardson

Address:

PO Box 5800

JBER, AL 99505

Tel: (907) 384-6085

Director: Ron Goertz

Email: starbase.programdirector@alaska.gov

Website: www.starbasealaska.org

Anchorage School District

Abbott Loop Elementary School

Alaska Native Cultural Charter School

Chinook Elementary School

Chugiak Elementary School
 Eagle River Elementary School
 Family Partnership Charter School
 Government Hill Elementary School
 Lake Otis Elementary School
 Orion Elementary School
 Rabbit Creek Elementary School
 Sand Lake Elementary School
 Taku Elementary School
 Tudor Elementary School
 Tyson Elementary School
 Ursa Major Elementary School
 Ursa Minor Elementary School
 Willow Crest Elementary School

ARIZONA

DAVIS MONTHAN AIR FORCE BASE

STARBASE Arizona

Start Date: 2005

Service Component: Air Force

Military Location: Davis Monthan Air Force Base

Address:

5355 E. Granite St.

Davis Monthan Air Force Base, AZ 85707

Tel: (520) 591-6680

Director: Mikelle Cronk

Email: cronkm@vail.k12.az.us

Website: class.vail.k12.az.us/starbaseaz

Amphitheater Unified School District

Donaldson Elementary School

Keeling Elementary School

Rio Vista Elementary School

Walker Elementary School

Desert Christian Schools

Desert Christian Elementary School

Presidio Independent School District

Presidio Elementary School

Tucson Unified School District

Brichta Elementary School

Schumaker

Wright Elementary School

Vail Unified School District

Sycamore Elementary School

CALIFORNIA

LOS ALAMITOS**STARBASE Los Alamitos**

Start Date: 2013

Service Component: Army National Guard

Military Location:

11200 Lexington Drive Los Alamitos, CA 90720

Address:

11525 Freedom Way, Bldg. 262

Los Alamitos, California 90720

Tel: (562) 795-1473

Director: Stacey Hendrickson

Email: stacey.hendrickson.nfg@mail.mil

Fullerton Unified

Richman Elementary School

Los Angeles Unified

96th Street Elementary School

Bushnell Way Elementary School

Grape Street Elementary School

Private School

St. Michael's Catholic School

SACRAMENTO**STARBASE of California**

Start Date: 1993

Service Component: Army National Guard

Military Location: Sacramento Armory

Address:

8400 Okinawa, Suite 1

Sacramento, CA 95828

Tel: (916) 387-7405

Fax: (916) 387-8309

Director: SGM John Lamb

Email: castarbase@sbcglobal.net

Center Unified School District

North Country Elementary School

Spinelli Elementary School

Elk Grove Unified School District

Barbara Comstock Morse Elementary School

Florence Markofer Elementary School

Florin Elementary School

John Reith Elementary School

Prairie Elementary School

Sierra Enterprise Elementary School

Union House Elementary School

Folsom Cordova Unified School District

Blanch Sprentz Elementary School

Carl Sundahl Elementary School

Cordova Gardens Elementary School

Cordova Villa Elementary School

Empire Oaks Elementary School

Mather Heights Elementary School

Natoma Station Elementary School

Navigator Elementary School

Rancho Cordova Elementary School

Russell Ranch Elementary School

Theodore Judah Elementary School

White Rock Elementary School

Williamson Elementary School

Sacramento Unified School District

Martin Luther King, Jr K-8

Oakview Community Elementary School

Phoebe Hearst Elementary School

Washington Unified School District

Riverbank Elementary School

SAN DIEGO**STARBASE – Atlantis San Diego**

Start Date: 1998

Service Component: Navy

Military Location: Naval Base San Diego

Address:

3975 Norman Scott Rd., Bldg. 3411

San Diego, CA 92136

Tel: (619) 556-7589

Fax: (619) 556-9310

Director: Nicholas C. Jordan

Email: nicholas.jordan@navy.mil

Website: www.netc.navy.mil/community/starbase/sandiego/**Chula Vista Elementary School District**

Lauderbach Elementary School

Rice Elementary School

Silver Wing Elementary School

Vista Square Elementary School

Coronado Unified School District

Coronado Village Elementary School
Silver Strand Elementary School

National City School District

El Toyon Elementary School
Ira Harbison Elementary School
Lincoln Acres Elementary School

STARBASE 2.0

Start Date: 2011

Service Component: Navy

Location:

Ira Harbison Elementary
3235 E. 8th Street
National City, CA 91950

School POC: Alfonso Denigri

Tel: (619) 336-8200

Email: alfonso.denigri@national.k12.ca.us

2.0 Program Coordinator: Nicholas C. Jordan

Tel: (619) 556-3133

Email: nicholas.jordan@navy.mil

CONNECTICUT**HARTFORD****STARBASE Hartford**

Start Date: 2001

Service Component: Air National Guard

Military Location: Bradley Air National Guard Base

Address:

251 Maxim Rd.
Hartford, CT 06114

Tel: (860) 728-0090

Fax: (860) 728-3293

Director: Melissa Vanek

Email: mvanek@starbase-ct.com

Website: www.starbase-ct.com

Agawam

Roberta G. Doering School

East Hartford Public Schools

Anna E. Norris School
Franklin H. Mayberry School
Gov. William Pitkin School
Hockanum Elementary School
John A. Langford School
Joseph O. Goodwin School

Robert J. O'Brien STEM Academy

Silver Lane School

Sunset Ridge School

Thomas S. O'Connell School

Woodland School

Hartford

Alfred E. Burr School

Jumoke Academy

L.W. Batchelder School

R.J. Kinsella School of Performing Arts

New Britain

Holmes School

STARBASE 2.0

Start Date: 2012

Service Component: Air National Guard

Location:

East Hartford Middle School
777 Burnside Avenue
East Hartford, CT 06108

School POC: Ted Sakelarakis

Tel: (860) 622-5600

Email: sakelarakis.t@easthartford.org

2.0 Program Coordinator: Diane Gabel

Tel: (860) 728-0090

Email: dgabel@starbase-ct.com

WATERBURY**STARBASE Waterbury**

Start Date: 2003

Service Component: Air National Guard

Military Location: Naugatuck Community College

Address:

750 Chase Pkwy.
Waterbury, CT 06708

Tel: (203) 575-8271

Fax: (203) 575-8018

Director: Melissa Vanek

Email: mvanek@starbase-ct.com

Website: www.starbase-ct.com

Waterbury Private Schools

Children's Community School
Our Lady of Mount Carmel
Polk Elementary School
Saints Peter and Paul School
Yeshiva K'Tana School

Waterbury Public Schools

Bucks Hill Elementary School
Bunker Hill Elementary School
Carrington Elementary School
Chase Elementary School
Driggs Elementary School
Duggan Elementary School
Generali Elementary School
Gilmartin Elementary School
Hopeville Elementary School
Kingsbury Elementary School
Maloney Elementary School
Reed Elementary School
Regan Elementary School
Rotella Elementary School
Sprague Elementary School
Tinker Elementary School
Walsh Elementary School
Washington Elementary School
Wendell Cross Elementary School

Orr Elementary
Oyster-Adams
Simon
Tyler Elementary School
Young Marines

FLORIDA

JACKSONVILLE

STARBASE Florida
Start Date: 1994
Service Component: Air National Guard
Military Location: 125th Fighter Wing FLANG
Address:
14300 FANG Drive
Jacksonville, FL 32218
Tel: (904) 741-7320
Fax: (904) 741-7324
Director: Greg Stritch
Email: gregory.stritch@ang.af.mil

DISTRICT OF COLUMBIA

WASHINGTON

STARBASE – Atlantis Washington Navy Yard
Start Date: 2001
Service Component: Navy
Military Location:
Naval Support Activity
Address:
645 Rickover St. SE
Building 21, Ste. 102
Washington, DC 20374
Tel: (202) 433-0533
Fax: (202) 433-0534
Director: Shelley Bard
Email: shelley.bard@navy.mil

Duval County Public Schools

Andrew Robinson Elementary School
Cedar Hills Elementary School
Gregory Drive Elementary School
Hendricks Avenue Elementary School
John Love Elementary School
Joseph Finegan Elementary School
Lake Forrest Elementary School
Lone Star Elementary School
Mamie Agnes Jones Elementary School
Normandy Village Elementary School
Ramona Blvd Elementary School
San Jose School
Seacoast Academy
Windy Hill Elementary School

District of Columbia Public Schools

Bancroft
Bolling Area Home Educators
Bruce Monroe
Ferebee-Hope
Harriet Tubman Elementary School
Hendley
J.O. Wilson Elementary School
Langley Education Campus
Marie Reed
Mary Church Terrell Elementary School

PENSACOLA**STARBASE – Atlantis NAS Pensacola Florida**

Start Date: 1994

Service Component: Navy

Military Location: NAS Pensacola

Address:

Bldg 1907 Sherman Field

Mailing: 6490 Saufley Field Rd.

Pensacola, FL 32509

Tel: (850) 452-8287

Fax: (850) 452-8288

Director: Donna Eichling

Email: donna.eichling@navy.mil

Website: www.netc.navy.mi/community/starbase

Escambia County Public Schools

Bellview Elementary School

Blue Angels Elementary School

Bratt Elementary School

Escambia Westgate School

Ferry Pass Elementary School

Molino Park Elementary School

Myrtle Grove Elementary School

Pine Meadow Elementary School

Pleasant Grove Elementary School

Scenic Heights Elementary School

Private School

East Hill Christian School

Little Flower Catholic School

St Paul Catholic School

PENSACOLA**STARBASE – Atlantis NAS Whiting Field Florida**

Start Date: 1994

Service Component: Navy

Military Location: NAS Whiting Field

Address:

Bldg 1417, Milton, FL

Mail: 6490 Saufley Field Road

Pensacola, FL 32509

Tel: (850) 452-8287/623-7516

Fax: (850) 452-8288

Director: Donna Eichling

Email: donna.eichling@navy.mil

Website: www.netc.navy.mil/community/starbase

Santa Rosa County Public Schools

Bagdad Elementary School

Bennett Russell Elementary School

Berryhill Elementary School

Central School

Chumuckla Elementary School

East Milton Elementary School

Holley-Navarre Intermediate School

Jay Elementary School

Oriole Beach Elementary School

Pea Ridge Elementary School

S.S. Dixon Intermediate School

W. H. Rhodes Elementary School

West Navarre Intermediate School

GEORGIA**DOBBINS ARB****Peach State STARBASE**

Start Date: 2001

Service Component: Army National Guard

Military Location: Dobbins Air Reserve Base

Address:

1484 Patrol Road

Dobbins ARB, GA 30069

Tel: (678) 655-4667

Tel: (678) 569-3565

Director: John McKay

Email: john.e.mckay8.nfg@mail.mil

Website: www.facebook.com/peachstatestarbase

Atlanta Public Schools

Boyd Elementary School

Towns Elementary School

Cobb County School District

Harmony Leland Elementary School

Mableton Elementary School

Powder Springs Elementary School

Russell Elementary School

Homeschool

Classical Conversations

Forsyth County Christian

Georgia Enrichment Program for Homeschoolers

Great Oak Academy

Kid Cultivators

Marietta City Schools

Hickory Hills Elementary School

Sawyer Road Elementary School

Summer Camps

Fernbank Science Center
Roswell Budokan
Lockheed-Martin Corporation
Georgia National Guard Family Readiness Foundation

SAVANNAH

STARBASE Savannah

Start Date: 2011
Service Component: Army
Military Location: Hunter Army Airfield, GA
Address:
134 MacArthur Circle, Bldg. 617
Savannah, GA 31409
Tel: (912) 315-3748
Fax: (912) 315-3749
Director: Betty L. G. Morgan
Email: Betty.L.Morgan8.ctr@mail.mil
Website: www.savannahstarbase.weebly.com/index.html

Candler County School

Metter Intermediate School

Independent

Savannah Christian Preparatory

Savannah-Chatham County Public School System

Bartow Elementary School
Georgetown Elementary School
Godley Station
Haven Elementary School
Hubert Middle School
Jacob G. Smith

SC/Fort Stewart Cuba District

Diamond Elementary School

WARNER ROBINS

STARBASE Robins

Start Date: 1996
Service Component: Air Force Reserve
Military Location: Robins Museum of Aviation
Address:
P.O. Box 2469
Warner Robins, GA 31099
Tel: (478) 926-1769
Director: Wesley Fondal, Jr.
Email: wesley@starbaserobins.org
Website: www.starbaserobins.org

Bibb

Bernd Elementary School
Morgan Elementary School
Rice Elementary School
Union Elementary School
Vineville Elementary School

Bleckley

Bleckley Elementary School

Houston

Kings Chapel Elementary School
Lindsey Elementary School
Linwood
Miller Elementary School
Northside Elementary School
Parkwood Elementary School
Shirley Hills Elementary School

Twiggs

Twiggs County Elementary School

STARBASE 2.0

Start Date: 2009
Service Component: Air Force Reserve
Location:
Museum of Aviation
PO Box 2469
Warner Robins, GA 31099
School POC: Wesley Fondal
Tel: (478) 926-1769
Email: wesley@starbaserobins.org

2.0 Program Coordinator: Miles Mulligan
Tel: (478) 926-1769
Email: miles@starbaserobins.org

HAWAII

JOINT BASE PEARL HARBOR – HICKAM

STARBASE – Atlantis Hawaii
 Start Date: 2002
 Service Component: Navy
 Military Location: Navy Submarine Training Center
 Pacific / TSD Hawaii
 Address:
 1130 Bole Loop
 Hickam, HI 96860
 Tel: (808) 472-7389
 Fax: (808) 472-7389
 Director: Lincoln Higa
 Email: lincoln.higa@navy.mil

Central District

Aliamanu Elementary School
 Alvah A. Scott Elementary School
 Pearl Harbor Kai Elementary School

Central Oahu District

Makalapa Elementary School

Leeward District

Ewa Elementary School

Leeward Oahu District

Ewa Elementary School

Private-No district

Pearl Harbor Christian Academy
 St. Elizabeth Catholic School

KEAAU

STARBASE - Hawaii, Big Island
 Start Date: 2008
 Service Component: Air National Guard
 Military Location: National Guard Armory, Keaau
 Address:
 16-512 Volcano Hwy.
 P.O. Box 256
 Keaau, HI 96749
 Tel: (808) 982-4298
 Fax: (808) 982-4241
 Director: Todd Friel
 Email: starbasehi@aol.com

Hilo-Waiakea Complex

Waiakea Elementary School

Hilo Private School

Haili Christian School
 St. Joseph School

Ka'u-Kea'au-Pahoa Complex

Kea'au Elementary School
 Keonepoko Elementary School
 Mt. View Elementary School
 Na'alehu Elementary School
 Pahala Elementary School
 Pahoa Elementary School

Puna Charter School

Hawaii Academy of Arts and Science
 Ke Kula o Nawahiokalaniop'u

ILLINOIS

GREAT LAKES

STARBASE – Atlantis Great Lakes
 Start Date: 2001
 Service Component: Navy
 Military Location: Naval Station Great Lakes
 Address:
 2221 Mac Donough Dr., Bldg. 617 Room 122
 Great Lakes, IL 60088
 Tel: (847) 688-2509
 Fax: (847) 688-3136
 Director: Corey Palmer
 Email: corey.palmer@navy.mil

Kenosha Unified School District

Kenosha School of Technology Enhanced Curriculum

North Chicago Community Unit School District #187

A.J. Katzenmaier Elementary School
 Forrestal Elementary School
 Greenbay Elementary School
 North Elementary School
 South Elementary School

Zion Elementary School District 6

Beulah Park Elementary School
 East Elementary School
 Elmwood Elementary School
 Shiloh Park Elementary School
 West Elementary School

INDIANA

FORT WAYNE

STARBASE Indiana
 Start Date: 2011
 Service Component: Air National Guard
 Military Location: Fort Wayne Air National Guard Base
 Address:
 3005 West Ferguson Rd.
 Fort Wayne, IN 46809
 Tel: (260) 478-3702
 Director: Scott Liebhauser
 Email: scott@starbasein.org
 Website: www.starbasein.org

American Quality Schools Corporation
 Thurgood Marshall Academy

Diocese of Fort Wayne - South Bend
 St Joseph - St Elizabeth
 St Joseph Hessen Cassel
 St. Aloysius

East Allen County Schools
 Heritage Elementary School
 Indian Village Elementary School
 Meadowbrook Elementary School

Fort Wayne Community Schools
 Glenwood Park Elementary School
 Indian Village Elementary School
 Levan Scott Academy
 Maplewood Elementary School
 South Wayne Elementary School
 Study Elementary School

Homeschool Association
 Homeschool

The Lutheran Schools
 St. Paul Lutheran's

KANSAS

KANSAS CITY

STARBASE Kansas City
 Start Date: 2008
 Service Component: Army National Guard
 Military Location: HQ HHS
 Address:
 100 S 20th Street
 Kansas City, KS 66102
 Tel: (913) 279-7858
 Fax: (913) 279-7859
 Director: Jeff Gabriel
 Email: director@kansasstarbase.org
 Website: www.kansasstarbase.org

Archdiocese of Kansas City, Kansas
 St. Agnes Catholic School
 John Paul II Catholic School
 Resurrection Catholic School
 St. Patrick's Cathedral
 Xavier Elementary School

Basehor-Linwood
 Basehor Intermediate

Gardner Edgerton
 Gardner/Spring Hill Homeschool

Kansas City Kansas Public Schools
 Bethel Elementary School
 EarEmerson Elementary School
 New Chelsea Elementary School
 Parker Elementary School
 Stoney Point South Elementary School
 TA Edison Elementary School
 White Church Elementary School

Leavenworth
 Anthony Elementary School
 David Brewer Elementary School
 Earl M Lawson
 Henry Leavenworth Elementary School

Other
 Genesis Christian Academy
 Hyman Brand Hebrew Academy
 KCK Christian Elementary
 Maranatha Christian Academy

Shawnee Mission

Nieman Elementary School
 Pawnee Elementary School
 Santa Fe Trail Elementary School

STARBASE 2.0

Start Date: 2012
 Service Component: Army National Guard
 Location:
 400 Eisenhower
 Baldwin City, KS 66006
 School POC: Pam Davies
 Tel: (785) 594-2448
 Email: pdavis@usd348.com

2.0 Program Coordinator: Gena Schleimer
 Tel: (913) 279-7858
 Email: gena.schleimer@us.army.mil

MANHATTAN**STARBASE Manhattan**

Start Date: 2011
 Service Component: Army National Guard
 Military Location: Manhattan Armory
 Address:
 721 Levee Dr
 Manhattan, KS 66502
 Tel: (785) 587-9740
 Fax: (785) 539-7810
 Director: Jeff Gabriel
 Email: director@kansasstarbase.org
 Website: www.kansasstarbase.org

Ogden-Manhattan

Amanda Arnold Elementary School
 Bluemont Elementary School
 Frank Bergman Elementary School
 Lee Elementary School
 Marlatt Elementary School
 Northview Elementary School
 Ogden Elementary School
 Theodore Roosevelt

SALINA**STARBASE Salina**

Start Date: 2008
 Service Component: Army National Guard
 Military Location: Great Plains Joint Training Center
 Address:
 2929 Scanlan Ave
 Salina, KS 67401
 Tel: (785) 822-6602
 Fax: (785) 822-6600
 Director: Jeff Gabriel
 Email: director@kansasstarbase.org
 Website: www.kansasstarbase.org

Archdiocese of Salina

St. Mary's Catholic School

Chapman

Blue Ridge Elementary School
 Chapman Elementary School

Clifton-Clyde

Clifton-Clyde Middle School

Concordia

Concordia Middle School

Lincoln

Lincoln Elementary School

McPherson

Eisenhower Elementary School
 Lincoln Elementary School
 McPherson Area Home School
 Roosevelt Elementary School
 Washington Elementary School

North Ottawa County Schools

Minneapolis Elementary School

Other

Abilene Baptist Academy
 Elyria Christian School
 Salina Christian Academy

Salina Public Schools

Coronado Elementary School
 Schilling Elementary School
 Stewart Elementary School
 Sunset Elementary School

Southern Cloud

Nort Galsco Elementary School
Miltonvale Elementary School

Sylvan-Lucas

Lucas-Sylvan Unified Elementary School

Twin Valley

Bennington Elementary School
Tescott Elementary School

STARBASE 2.0

Start Date: 2012

Service Component: Army National Guard

Location:

133 E. Lincoln Ave.
Lincoln, KS 67455

School POC: Nate Naasz

Tel: (785) 524-4193 ext. 1121

Email: naasz@usd298.com

2.0 Program Coordinator: Karen Whitacre

Tel: (785) 861-4709

Email: karen.whitacre@us.army.mil

TOPEKA

STARBASE Topeka

Start Date: 1994

Service Component: Air National Guard

Military Location: Forbes Field ANG

Address:

5920 SE Coyote Dr
Topeka, KS 66619

Tel: (785) 861-4709

Fax: (785) 861-4127

Director: Jeff Gabriel

Email: director@kansasstarbase.org

Website: www.kansasstarbase.org

Atchinson Co Community Schools

Atchison Co Community School

Auburn Washburn

Farley Elementary School
Indian Hills Elementary School

Baldwin City

Baldwin City Elementary School

Burlingame Public Schools

Burlingame Elementary School

Jefferson West

Jefferson West Middle School

Kaw Valley

St. Marys Elementary School

Lyndon

Lyndon Elementary School

Mill Creek Valley

Alma Grade School
Maple Hill Elementary School

Onaga-Havensville-Wheaton

Onaga Elementary School

Other

St. John's Lutheran

Rock Creek

St. George Elementary School

Santa Fe Trail

Carbondale Attendance Center

Seaman

Logan Elementary School
North Fairview Elementary School
Rochester Elementary School
West Indianola Elementary School

Topeka Public Schools

Lowman Hill Elementary School
Whitson Elementary School

Wamego

Wamego West Elementary School

STARBASE 2.0

Start Date: 2012

Service Component: Air National Guard

Location:

5620 SW 61st St
Topeka, KS 66619

School POC: Kyle Kimberlin

Tel: (785) 339-4300

Email: kimbekyl@usd437.net

2.0 Program Coordinator: Jeff Gabriel

Tel: (785) 861-4709

Email: director@kansasstarbase.org

WICHITA**STARBASE Wichita**

Start Date: 1993

Service Component: Air National Guard

Military Location: McConnell Air Force Base

Address:

52870 Jayhawk Dr.

McConnell AFB, KS 67221

Tel: (316) 759-7096

Fax: (316) 759-7094

Director: Jeff Gabriel

Email: director@kansasstarbase.orgWebsite: www.kansasstarbase.org**Andover**

Prairie Creek Elementary School

Robert Martin Elementary School

Archdiocese of Wichita

Blessed Sacrament Catholic

Holy Cross Catholic Elementary School

St. Marys Catholic School

Augusta

Robinson Elementary School

Central

Central Burden Elementary School

Haysville

Prairie Elementary School

Ruth Clark Elementary School

Home School

Stoney Brook Home School

Valley Center Public Schools

Abilene Elementary School

Wichita

Benton Elementary School

Caldwell Elementary School

Enterprise Elementary School

McLean Magnet School

Mueller Elementary School

Stanley Elementary School

STARBASE 2.0

Start Date: 2012

Service Component: Air National Guard

Location:

1628 N. Andover Rd

Andover, KS 67002

School POC: Amy Rech

Tel: (316) 218-4610

Email: rechsa@yahoo.com

2.0 Program Coordinator: Doug Frahm

Tel: (316) 759-7096

Email: director@kansasstarbase.org**LOUISIANA****BARKSDALE AIR FORCE BASE****STARBASE Louisiana**

Start Date: 1999

Service Component: Air Force Reserve

Military Location: Barksdale Air Force Base, Louisiana

Address:

827 Twining Dr., Bldg. 4238

Barksdale Air Force Base, LA 71110

Tel: (318) 529-3521

Fax: (318) 529-3631

Director: Kathy Brandon

Email: kathy.brandon.2.ctr@us.af.milWebsite: www.307bw.afrc.af.mil/units/starbase_louisiana/index.asp**Bossier Parish Schools**

Apollo Elementary School

Benton Elementary School

Bossier Elementary School

Carrie Martin Plain Dealing Elementary School

Central Park Elementary School

Curtis Elementary School

Elm Grove Elementary School

Kerr Elementary School

Legacy Elementary School

Meadowview Elementary School

Plantation Park Elementary School

Princeton Elementary School

Stockwell Elementary School

W.T. Lewis Elementary School

Waller Elementary Schools

Caddo Public Schools

Claiborne Fundamental Elementary School
J.P. Timmons Elementary School
Judson Fundamental Elementary School
Keithville Elementary/Middle Schools
North Highlands Elementary School
Oil City Elementary Environmental Science Magnet School
Shreve Island Elementary School
Southern Hills Elementary School
Summer Grove Elementary School

Catholic Diocese of Shreveport

St. John Berchmans Cathedral School
St. Joseph Catholic School

NEW ORLEANS

STARBASE Jackson Barracks

Start Date: 2011
Service Component: Army National Guard
Military Location: Jackson Barracks
Address:
6400 Saint Claude Ave.
New Orleans, LA 70117
Tel: (504) 278-8440
Fax: (504) 278-8537
Director: Lisa Calabresi
Email: lisa.m.calabresi.nfg@mail.mil

Orleans Parish

Ben Franklin Elementary School
Edgar P. Harney Spirit of Excellence Academy
Lake Forest Charter Elementary School
Success Preparatory Academy
Dr. Martin Luther King Charter School for Science

Plaquemines Parish

Belle Chasse Academy

St. Bernard Parish

Arabi Elementary School
Chalmette Elementary School
Gauthier Elementary School
Joseph J. Davies Elementary School
Lacoste Elementary School
Lynn Oaks School
Our Lady of Propmt Succor
W. Smith Elementary School

PINEVILLE

Pelican State STARBASE

Start Date: 1999
Service Component: Army National Guard
Military Location: Camp Beauregard
Address:
609 F St.
Pineville, LA 71360
Tel: (318) 290-5252
Fax: (318) 290-5937
Director: Nancy B. Force
Email: nancy.l.brinkerhoffforce.nfg@mail.mil

Grant Parish

South Grant Elementary School

Non-Public Education Programs Registered in Louisiana

Alexandria Montessori Program
Alfred Booker Jr. Academy
Alpine Christian Academy
Cenla Christian Home School Assosiation
Hope Baptist Academy

Office of Catholic Schools of The Diocese of Alexandria

Our Lady of Prompt Succor
Sacred Heart School

Rapides Parish

Alma Redwine Elementary School
Carter C. Raymond Elementary School
Forest Hill Elementary School
J. I. Barron Elementary School
L. S. Rugg
Lessie Moore Elementary School
Mabel Brasher Elementary School
Pineville Elementary School
Plainview High (K-12)
Poland Junior High (K-8)
W. O. Hall Elementary School

MAINE

BANGOR

STARBASE Maine
 Start Date: 2001
 Service Component: Air National Guard
 Military Location: Bangor, Maine
 Address:
 105 Maineiac Ave., Bldg. 510
 Bangor, ME 04401
 Tel: (207) 404-7505
 Fax: (207) 404-7150
 Director: Michele Barnes
 Email: michele.barnes@ang.af.mil

Brewer School District
 Brewer Community School

Dedham School Department
 Dedham School

Diocese of Portland
 All Saints Catholic School

Hermon School District
 Hermon Middle School

Orrington School District
 Center Drive School

RSU 24
 Beech Hill School

RSU 25
 Bucksport Middle School

RSU 26
 Asa C. Adams School
 Glenburn Elementary School

RSU 63
 Holbrook School

RSU 87
 Caravel Middle School

SAD 22
 George B. Weatherbee School
 Samuel L. Wagner Middle School

MARYLAND

PATUXENT RIVER

STARBASE – Atlantis Pax River
 Start Date: 2006
 Service Component: Navy
 Military Location: Patuxent River, Maryland
 Address:
 47253 Whalen Rd., Ste. 102
 Bldg. 588
 Patuxent River, MD 20670
 Tel: (301) 342-2789
 Fax: (301) 342-5457
 Director: Julie Guy
 Email: julie.guy@navy.mil
 Website: www.netc.navy.mil/community/starbase/patuxent/

Archdiocese of Washington
 St. Michael's School
 Father Andrew White School
 Little Flower School
 Our Lady Star of the Sea School

St. Mary's County Public Schools
 Benjamin Banneker Elementary School
 Chesapeake Public Charter School
 George Washington Carver Elementary School
 Green Holly Elementary School
 Lexington Park Elementary School
 Park Hall Elementary School
 Town Creek Elementary School

STARBASE 2.0
 Start Date: 2011
 Service Component: Navy
 Location:
 Spring Ridge Middle School
 19856 Three Notch Rd.
 Lexington Park, MD 20653
 School POC: Jamel Hebb
 Tel: (301) 863-4031
 Email: jihebb@smcps.org

2.0 Program Coordinator: Julie Guy
 Tel: (301) 342-2789
 Email: julie.guy@navy.mil

MASSACHUSETTS

HANSCOM

STARBASE Hanscom
 Start Date: 2012
 Service Component: Air Force
 Military Location: Hanscom AFB
 Address:
 98 Barksdale St., Bldg. 1530
 Hanscom, MA 01730
 Tel: (781) 862-4015
 Fax: (781) 862-4016
 Director: Peter Holden PhD
 Email: pholden@mass-starbase.org
 Website: www.mass-starbase.org/

Haverhill Public Schools

Bradford Elementary School
 Dr. A.B. Consentino School
 J.G. Whittier School

Lincoln Public Schools

Hanscom Middle School

Littleton Public Schools

Russell Street School

Lowell Public Schools

Benjamin F. Butler Middle School

Malden Public Schools

Linden STEAM Academy

MICHIGAN

ALPENA

STARBASE Alpena
 Start Date: 2011
 Service Component: Air National Guard
 Military Location: Alpena Combat Readiness Training Center
 Address:
 5884 A St., Bldg. #4
 Alpena, MI 49707
 Tel: (989) 354-6332
 Fax: (989) 354-6353
 Director: Rick Simms (Interim)
 Email: rsimms@starbaseone.org

Alcona

Alcona Elementary

All Saints

All Saints Catholic School

Alpena Public

Besser Elementary School
 Hinks Elementary School
 Lincoln Elementary School
 Sanborn Elementary School
 Wilson Elementary School
 Ella M. White School

Bingham Arts Academy

Bingham Arts Academy

Hillman

Hillman Elementary School

Immanual/Home School

Immanual Lutheran School
 Home School

Posen

Posen Consolidated

Rogers City

Rogers City Elementary School

BATTLE CREEK ANG BASE

STARBASE Battle Creek
 Start Date: 2006
 Service Component: Air National Guard
 Military Location: Battle Creek ANG Base
 Address:
 3595 Mustang Ave., Bldg. 6909
 Battle Creek ANG Base, MI 49037
 Tel: (269) 969-3219
 Fax: (269) 969-3251
 Director: Bruce Medaugh
 Email: BMedaugh@STARBASEBattleCreek.org

Albion Public Schools

Altec

Battle Creek Public Schools

Dudley Elementary School
 Franklin Elementary School
 Fremont Elementary School

Urbandale Elementary School
 Valley View Elementary School
 Verona Elementary School

Bellevue Public Schools

Bellevue Elementary School

Colon Public Schools

Colon Elementary School

Delton Kellogg Public Schools

Delton Kellogg Middle School

Hastings Community Schools

Central Elementary School
 Northeastern Elementary School
 Southeastern Elementary School
 STAR Elementary School

Lakewood Public Schools

Clarksville Elementary School
 Sunfield Elementary School
 West Elementary School
 Woodland Elementary School

Parchment School District

Northwood Elementary School

Pennfield Schools

Dunlap Elementary School

Thornapple Kellogg Public Schools

Page Elementary School

Three Rivers Community Schools

Andrews Elementary School
 Park Elementary School

STARBASE 2.0

Start Date: 2011

Service Component: Air National Guard

Location:

Springfield Middle School
 1023 Avenue A
 Battle Creek, MI 49037

School POC: William Martin

Tel: (269) 965-9640

Email: wmartin@battle-creek.k12.mi.us

2.0 Program Coordinator: Deborah Bordner

Tel: (269) 221-1441

Email: dlbordner@yahoo.com

SELFRIDGE

STARBASE One

Start Date: 1991

Service Component: Air National Guard

Military Location: Selfridge ANGB

Address:

27310 D Street

Bldg. 1051

Selfridge ANGB, MI 48045

Tel: (586) 239-4884

Fax: (586) 239-5751

Director: Rick Simms

Email: rsimms@starbaseone.org

Website: www.starbaseone.org

Anchor Bay Public Schools

Ashley Elementary School
 Lottie Schmidt Elementary School
 Maconce Elementary School
 Naldrett Elementary School
 Sugarbush Elementary School

Center Line Charter School

Michigan Math and Science Academy

Charter

Merritt Academy

Detroit Public Schools

Davison Elementary-Middle School
 Chrysler Elementary School
 Clippert Academy
 Emerson Elementary-Middle School
 Mann Elementary School
 Pasteur Elementary School
 Plymouth Educational Center

Lamphere Public Schools

Hiller Elementary School

L'Anse Creuse Public Schools

Carkenord Elementary School
 Higgins Elementary School
 South River Elementary School
 Yacks Elementary School

Mt. Clemens Community Schools

Seminole Academy

New Haven Community Schools

Endeavour Elementary School
New Haven Elementary School

Private

Our Lady Star of the Sea Catholic Elementary
and Middle School
St. Germaine Elementary School
Trinity Lutheran School

Richmond Community Schools

Richmond Middle School

South Lake Public Schools

Elmwood Elementary School

STARBASE 2.0

Start Date: 2013

Service Component: Air National Guard

Location:

Middle School East
30300 Hickey Road
Chesterfield, MI 48051

School POC: Mike VanCamp

Tel: (586) 493-5200

Email: vancami@lc-ps.org

2.0 Program Coordinator: Mark Muzzin

Tel: (586) 239-4884

Email: mmuzzin@starbaseone.org

MINNESOTA

ST. PAUL

STARBASE Minnesota

Start Date: 1993

Service Component: Air National Guard

Military Location: 133rd Airlift Wing

Address:

659 Mustang Ave.
St. Paul, MN 55111

Tel: (612) 713-2530

Fax: (612) 713-2540

Director: Kim Van Wie

Email: kvanwie@starbasemn.org

Website: www.starbasemn.org

Minneapolis

Risen Christ Catholic School

Minneapolis Public Schools

Andersen United Community School
Bryn Mawr Community School
Emerson SILC (Spanish Immersion Learning Center)
Green Central Park School
Jefferson Community School
Lake Harriet Community School
Pillsbury Elementary School

St. Paul

Community of Saints
St. Jerome School
St. Agnes School
St. Mary of the Lake School
St. Peter Claver
St. Rose of Lima Catholic School
Maternity of Mary - St. Andrew

St. Paul Charter Schools

Achieve Language Academy
Community of Peace Academy

St. Paul Public Schools

American Indian Magnet School/World Cultures
Battle Creek Elementary School
Como Park Elementary School
Farnsworth Aerospace Magnet School
Four Seasons A+ Elementary School
Frost Lake Magnet School of Technology
and Global Studies
Hazel Park Preparatory School
Phalen Lake Hmong Studies Magnet
St. Paul Music Academy
The Heights

White Bear Lake

St. Mary of the Lake School

MISSISSIPPI

GULFPORT

STARBASE – Atlantis Gulfport
 Start Date: 2001
 Service Component: Navy
 Military Location: Naval Construction Training Center
 Address:
 5510 CBC 8th St., Bldg 386
 Gulfport, MI 39501
 Tel: (228) 871-3735
 Fax: (228) 871-3468
 Director: Keith Agee
 Email: Keith.Agee@navy.mil

Gulfport School District
 West Elementary School

Harrison County School District
 Crossroads Elementary School
 Lizana Elementary School
 Orange Grove Elementary School
 Pineville Elementary School
 Saucier Elementary School

Pass Christian School District
 Delisle Elementary School

Private
 Westminster Academy

Private Christian School
 Christian Collegiate Academy
 Coast Episcopal
 St. Vincent de Paul

MERIDIAN

STARBASE – Atlantis Meridian
 Start Date: 2002
 Service Component: Navy
 Military Location: NAS Meridian
 Address:
 266 Rosenbaum Ave.
 Meridian, MI 39309
 Tel: (601) 679-3809
 Fax: (601) 679-3812
 Director: Pam Litton
 Email: pam.litton@navy.mil

Lauderdale County School District
 Clarkdale Middle School

Meridian Public School District
 Crestwood Elementary School
 Oakland Heights Elementary School
 Parkview Elementary School
 T.J. Harris Elementary School
 West Hills Elementray School

Other
 Calvary Christian School
 Lamar School
 Russell Christian Academy
 St. Patrick School

PHILADELPHIA

STARBASE – Atlantis Choctaw
 Start Date: 2003
 Service Component: Navy
 Military Location: NAS Meridian
 Address:
 266 Industrial Rd.
 Philadelphia, MI 39305
 Tel: (601) 663-7592
 Fax: (601) 663-7593
 Director: Pam Litton
 Email: pam.litton@navy.mil

Choctaw Tribal Schools
 Bogue Chitto Elementary School
 Conehatta Elemntary School
 Pearl River Elementary School
 Red Water Elementary School
 Standing Pine Elementary School
 Tucker Elementary School

Other
 Leake Academy

MONTANA

FORT HARRISON

STARBASE Fort Harrison
 Start Date: 2007
 Service Component: Army National Guard
 Military Location: Fort Harrison
 Address:
 1956 Mt Majo Street
 PO Box 4789
 Fort Harrison, MT 59636
 Tel: (406) 324-3727
 Fax: (406) 324-3735
 Director: Michael A. Stone
 Email: mstone@bresnan.net

East Helena School District
 R.H. Radley Elementary School

Helena School District
 Broadwater Elementary School
 Bryant Elementary School
 Central Elementary School
 Four Georgians Elementary School
 Hawthorne Elementary School
 Jefferson Elementary School
 Jim Darcy Elementary School
 Kessler Elementary School
 Rossiter Elementary School
 Smith Elementary School
 Warren Elementary School

Lincoln School District
 Lincoln Elementary School

Montana City School District
 Montana City Elementary School

St Andrews School District
 St Andrews Elementary School

GREAT FALLS

STARBASE Great Falls
 Start Date: 2011
 Service Component: Air National Guard
 Military Location: Montana ANG 120 FW
 Address:
 2800 Airport Ave. B
 Great Falls, MT 59404
 Tel: (406) 791-0806
 Fax: (406) 791-0339
 Director: Wendy Fechter
 Email: wfechter@mt.net

Augusta School District
 Augusta Elementary School

Cascade School District
 Cascade Elementary School

Centerville School District
 Centerville School

Great Falls
 Foothills Christian School
 Holy Spirit School
 Homeschoolers
 Our Lady of Lourdes

Great Falls Public School District
 Chief Joseph Elementary School
 Lewis and Clark Elementary School
 Lincoln Elementary School
 Longfellow Elementary School
 Loy Elementary School
 Meadow Lark Elementary School
 Morningside Elementary School
 Mountain View Elementary School
 Riverview Elementary School
 Roosevelt Elementary School
 Sacajawea Elementary School
 Sunnyside Elementary School
 Valley View Elementary School
 West Elementary School
 Whittier Elementary School

Highwood School District
 Highwood School

NEBRASKA

LINCOLN

STARBASE Nebraska
 Start Date: 2002
 Service Component: Air National Guard
 Military Location: National Guard Base, Lincoln
 Address:
 2400 NW 24th Street
 Lincoln, NE 68524
 Tel: (402) 309-1869
 Fax: (402) 309-1872
 Director: Sherry Pawelko
 Email: spawelko@starbasene.org
 Website: www.starbasene.org

Catholic Diocese of Lincoln

Blessed Sacrament Elementary School
 St. John's Elementary School
 St. Mary's Elementary School
 St. Patrick's Elementary School
 St. Peter's Elementary School
 St. Teresa's Elementary School

Lincoln Christian School

Lincoln Christian Elementary School

Lincoln Lutheran Schools

Good Shepherd Lutheran School
 Messiah Lutheran
 Trinity Lutheran School

Lincoln Public Schools

Brownell Elementary School
 Hartley Elementary School
 Holmes Elementary School
 Lakeview Elementary School
 McPhee Elementary School
 Norwood Park Elementary School
 Prescott Elementary School
 Saratoga Elementary School
 Zeman Elementary School

Parkview Christian

Parkview Christian School

SDA Church Schools

College View Academy

NEVADA

LAS VEGAS

STARBASE Nellis
 Start Date: 2011
 Service Component: Air Force Reserve
 Military Location: Nellis AFB
 Address:
 Bldg. 1619
 Nellis Air Force Base
 Las Vegas, Nevada 89191
 Mailing Address:
 Attn: STARBASE Nellis
 CO Maj Martin 926th Group
 4325 Plattsburgh Ave.
 Nellis Air force Base, NV 89191
 Tel: (702) 575-3837
 Fax: (702) 575-3837
 Director: Myles Judd
 Email: mjudd@starbasenellis.com
 Website: www.starbasenellis.com

Clark County School District

Bracken, Walter Elementary School
 Crestwood Elementary School
 Lomie G. Heard Elementary School
 Charlotte & Jerry Keller Elementary School
 Mar & Zel Lowman
 Earl B. Lundy Elementary School
 J. E. Manch Elementary School
 Joseph M. Neal Elementary School
 Ute Perkins Elementary School
 Stanford Elementary School

NEW MEXICO

ALBUQUERQUE

New Mexico STARBASE La Luz
 Start Date: 2003
 Service Component: Air Force
 Military Location: Kirtland Air Force Base
 Address:
 1401 Maxwell, Bldg. 1900
 Albuquerque, NM 87117
 Tel: (505) 846-8042
 Fax: (505) 846-8932
 Director: Ronda Cole
 Email: ronda.cole@kirtland.af.mil
 Website: prs.afrl.kirtland.af.mil/LaLuz/

Albuquerque

Lowell Elementary School
 North Star Elementary School
 Petroglyph Elementary School

Albuquerque Public Schools

Dolores Gonzales Elementary School
 Emerson Elementary School
 Sandia Base Elementary School
 Seven Bar Elementary School
 Wherry Elementary School

Archdiocese of Santa Fe

Our Lady of the Assumption School

Grants-Cibola County Schools

Mesa View Elementary School

Hope Christian School

Hope Christian Elementary School

Los Lunas Public Schools

Bosque Farms Elementary School
 Peralta Elementary School

Magdalena Municipal Schools

Magdalena Elementary School

Moriarty-Edgewood School District

South Mountain Elementary School

STARBASE 2.0

Start Date: 2012

Service Component: Air Force

Location:

Van Buren Middle School
 700 Louisiana Blvd. SE
 Albuquerque, NM 87108

School POC: Velina Chavez

Tel: (505) 268-3833

Email: Velina.Chavez@aps.edu

2.0 Program Coordinator: Ronda Cole

Tel: (505) 846-8042

Email: ronda.cole@kirtland.af.mil

NORTH CAROLINA

CHARLOTTE**STARBASE Charlotte**

Start Date: 1993

Service Component: Air National Guard

Military Location: ANG 145th AW

Address:

4930 Minuteman Way
 Charlotte, NC 28208

Tel: (704) 398-4819

Fax: (704) 398-4822

Director: Barbara Miller

Email: barbara.miller.ctr@ang.af.mil

Avery County Public Schools

Newland Elementary School

Brunswick County Schools

Jessie Mae Monroe Elementary School

Camden County Public Schools

Camden Intermediate

Charlotte-Mecklenburg Public Schools

Allenbrook Elementary School
 Druid Hills Elementary School
 Hidden Valley Elementary School
 Mountain Island Elementary School
 Long Creek Elementary School
 Reid Park Elementary School
 Devonshire Elementary School

Edenton-Chowan Public Schools

D. F. Walker Elementary School

Lincoln County

Lincoln Charter Elementary School
 Rock Springs Elementary School
 St. James Elementary School

Rocky Mount-Nash Counties Public Schools

Nashville Elementary School

Thomasville City School System

Liberty Drive Elementary School

KURE BEACH

STARBASE Ft. Fisher
 Start Date: 2004
 Service Component: Air National Guard
 Military Location: Ft. Fisher - NC National Guard Training Center
 Address:
 116 Air Force Way
 Kure Beach, NC 28449
 Tel: (910) 257-7333 ext. 5, ext 1
 Director: Barbara Miller
 Email: barbara.miller.ctr@ang.af.mil

Brunswick

Town Creek Elementary School

Camden School System

Camden Intermediate School

Dare Public Schools

Kitty Hawk Elementary

Edenton-Chowan Schools

D. F. Walker Elementary School

Gates County School System

Gatesville Elementary School

Lenoir County Public Schools

Contentnea Savannah Elementary School

New Hanover County Schools

Anderson Elementary School
 Bellamy Elementary School
 Bradley Creek Elementary School
 Carolina Beach Elementary School
 College Park Elementary School
 Forest Hills Elementary School
 Freeman Elementary School
 Gregory School of Science, Mathematics and Technology
 Mary C. Williams Elementary School
 Murrayville Elementary School
 Pine Valley Elementary School
 Sunset Park Elementary
 Winter Park Elementary School
 Codington Elementary School
 Eaton Elementary School

Pender County Schools

Malpass Corner Elementary School

NORTH DAKOTA***MAFB***

STARBASE North Dakota
 Start Date: 2008
 Service Component: Air Force
 Military Location: Minot Air Force Base
 Address:
 101 C St.
 MAFB, ND 58704
 Tel: (701) 727-3334
 Fax: (701) 727-3328
 Director: Lisa Murphy
 Email: lisa.murphy@minot.k12.nd.us
 Website: www.starbasend.org

Bishop Ryan Catholic School District

Bishop Ryan Catholic School

Bowbells Public School District

Bowbells Public School

Glenburn School District

Glenburn Elementary School

Kenmare Public School District

Kenmare Elementary School

Lewis and Clark School District

Berthold Public School
 Plaza School

Max Public School District

Max Public School

Minot Public School District

Bel Air Elementary School
 Bell Elementary School
 Dakota Elementary School
 Edison Elementary School
 Lewis and Clark Elementary School
 Lincoln Elementary School
 Longfellow Elementary School
 McKinley Elementary School
 North Plains Elementary School
 Perkett Elementary School
 Roosevelt Elementary School
 Sunnyside Elementary School
 Washington Elementary School

Nedrose Public School District

Nedrose School

Our Redeemer's Christian School District

Our Redeemer's Christian School

South Prairie School District

South Prairie School

Surrey Public School District

Surrey Public School

United Public School District

Burlington Des-Lacs Elementary School

STARBASE 2.0

Start Date: 2010

Service Component: Air Force

Location:

North Plains Elementary

101 C St.

MAFB, ND 58704

School POC: Wayne Strand

Tel: (701) 727-3320

Email: northplains58704@gmail.com

2.0 Program Coordinator: Lisa Murphy

Tel: (701) 727-3335

Email: lisa.murphy@minot.k12.nd.u

OHIO

WRIGHT-PATTERSON AFB

STARBASE Wright-Patt

Start Date: 2004

Service Component: Air Force

Military Location: Wright-Patterson Air Force Base

Address:

2261 Monahan Way, Bldg. 196

WPAFB, OH 45433

Tel: (937) 938-4859

Fax: (937) 904-8033

Director: Daniel J. Andrews

Email: daniel.andrews.1@us.af.mil

Website: www.edoutreach.wpafb.af.mil

Beavercreek City Schools

Parkwood Elementary School

Dayton Public Schools

Rosa Parks Elementary School

Westwood Elementary School

World of Wonder

Wright Brothers Elementary School

Fairborn City Schools

Fairborn Intermediate School

Huber Heights City Schools

Charles Huber Elementary School

Monticello Elementary School

Rushmore Elementary School

Valley Forge Elementary School

Wright Brothers Elementary School

Jefferson Township Schools

Blairwood Elementary School

Mad River Local Schools

Spinning Hills Middle School

Miamisburg City Schools

Bear Elementary School

Jane Chance Elementary School

Kinder Elementary School

Springfield City Schools

Snyder Park Elementary School

Yellow Springs Exempted Village Schools

Mills Lawn Elementary School

STARBASE 2.0

Start Date: 2010

Service Component: Air Force

Location 1:

Spinning Hills Middle School

Spinning Eastman Rd.

Dayton, OH 45432

School POC: Cory Miller

Tel: (937) 259-6635

Email: cory.miller@madriverschools.org

Location 2:

Mad River Middle School
1801 Harshman Rd.
Dayton, OH 45433

School POC: Lesley Alexander
Tel: (937) 237-4256
Email: Lesley.Alexander@madriverschools.org

2.0 Program Coordinator: Kim Egbert
Tel: (937) 656-8675
Email: kimstarbase@gmail.com

OKLAHOMA***OKLAHOMA CITY***

STARBASE Oklahoma - Oklahoma City
Start Date: 2001
Service Component: Air National Guard
Military Location: Will Rogers Air National Guard Base
Address:
5920 Air Guard Dr.
Oklahoma City, OK 73179
Tel: (918) 833-7757
Fax: (918) 833-7769
Director: Pamela Kirk
Email: pamela.kirk@ang.af.mil
Website: www.starbaseok.org

Arapaho/Butler Public Schools
Arapaho/Butler Elementary School

BF-DC Public Schools
BF-DC Elementary School

Canute Public Schools
Canute Elementary School

Cheyenne Public Schools
Cheyenne Elementary School

Duncan Public Schools
Emerson Elementary School
Horace Mann Elementary School
Mark Twain Elementary School
Woodrow Wilson Elementary Schools

Fletcher Public Schools
Fletcher Elementary School

Hammon Public Schools
Hammon Elementary School

Lawton Public Schools
Crosby Park Elementary School
Geronimo Road Elementary School
Hugh Bish Elementary School
Pat Henry Elementary School
Pioneer Park Elementary School
Sheridan Road Elementary School
Sullivan Village Elementary School
Swinney Elementary School
Washington Elementary School
Wilson Elementary School
Wittier Elementary School
John Adams Elementary School

Leedey Public Schools
Leedey Elementary School

Merritt Public Schools
Merritt Elementary School

Millwood Public Schools
Millwood Arts Academy

Mountain View-Gotebo Public Schools
Mountain View-Gotebo Elementary School

OKC Public Schools
Sequoyah Elementary School

Private School
Lawton Christian School
St. Charles Borromeo Catholic School
St. John Nepomuk Catholic School
Trinity Christian School
Bishop John Carroll Catholic School
Mercy Elementary
St. Mary's Catholic School
St. Philip Neri Catholic School

Sentinel Public Schools
Sentinel Elementary School

Sweetwater Public Schools
Sweetwater Elementary School

Western Heights Public Schools
Bridgestone Elementary School

STARBASE 2.0

Start Date: 2011

Service Component: Army

Location 1:

4700 Mow-Way Rd., Suite 100
Ft. Sill, OK 73503

School POC: Brenda Spencer-Ragland

Tel: (580) 442-3001

Email: Brenda.j.spencer@us.army.mil

Start Date: 2012

Service Component: Air Force

Location 2:

2515 S Post Rd.
Midwest City, OK 73130

School POC: Tami Torres

Tel: (405) 739-1761 ext. 3473

Email: ttorres@mid-del.net

Start Date: 2013

Service: Air National Guard

Location 3:

Canute Elementary School
3rd and Walk St.
Canute, OK 73626

School POC: Josh Woodson

Tel: (580) 472-3922

Email: woodsonj@canute.k12.ok.us

2.0 Program Coordinator: Pamela Kirk

Tel: 918-833-7757

Email: pamela.kirk@ang.af.mil

TULSA**STARBASE Oklahoma - Tulsa**

Start Date: 1993

Service Component: Air National Guard

Military Location: Tulsa Air National Guard

Address:

9131 E Viper St.
Tulsa, OK 74115

Tel: (918) 833-7757

Fax: (918) 833-7769

Director: Pamela Kirk

Email: pamela.kirk@ang.af.mil

Website: www.starbaseok.org

Anderson Public Schools

Anderson Elementary School

Barnsdall Public Schools

Barnsdall Elementary School

Braggs Public Schools

Braggs Elementary School

Catoosa Public Schools

Cherokee Elementary School

Chouteau-Mazie Public Schools

Chouteau Elementary

Ft. Gibson Public Schools

Ft. Gibson Elementary School

Gore Public Schools

Gore Elementary School

Kansas Public Schools

Kansas Elementary School

Keys Public Schools

Keys Elementary School

Kinta Public Schools

Kinta Elementary School

Midway Public Schools

Midway Elementary School

Muskogee Public SchoolsBen Franklin Science Academy
Irving Elementary School
Sadler Elementary School
Tony Goetz Elementary School
Whittier Elementary School**Norwood Public Schools**

Norwood Elementary School

Okay Public Schools

Okay Elementary School

Oktaha Public Schools

Oktaha Elementary School

Osage Public Schools

Osage Elementary School

Private SchoolsAll Saints Catholic School
Rejoice Christian Academy

St. Joseph Catholic School
 St. Pius X Catholic School
 Sts. Peter & Paul Catholic School
 St. Catherine Catholic School

Pryor Public Schools

Jefferson Elementary School
 Roosevelt Elementary

Salina Public Schools

Salina Elementary School

Skelly Public Schools

Skelly Elementary School

Tahlequah Public Schools

Sequoyah Elementary School

Tenkiller Public Schools

Tenkiller Elementary School

Tulsa Bible Church

Tulsa Bible Church Home School Group

Tulsa Public Schools

Celia Clinton Elementary School
 Hamilton Elementary School
 Peary Elementary School
 Springdale Elementary School
 Whitman Elementary School

Verdigris Public Schools

Verdigris Elementary School

Warner Public Schools

Warner Elementary School

Webbers Falls Public Schools

Webbers Falls Elementary School

Wickliffe Public Schools

Wickliffe Elementary School

Woodall Public Schools

Woodall Public School

STARBASE 2.0

Start Date: 2010

Service Component: Air National Guard

Location 1:

Hamilton Elementary School
 2316 N Norwood Place
 Tulsa, OK 74115

School POC: Kristine Wyers

Tel: (918) 746-9440

Email: wyerskr@tulsaschools.org

Start Date: 2011

Location 2:

Springdale Elementary School
 2510 E. Pine St.
 Tulsa, OK 74110

School POC: Tammy Bowman

Tel: (918) 746-9394

Email: bowmanta@tulsaschools.org

2.0 Program Coordinator: Pamela Kirk

Tel: (918) 833-7757

Email: pamela.kirk@ang.af.mil

OREGON

KLAMATH FALLS

STARBASE Kingsley

Start Date: 1993

Service Component: Air National Guard

Military Location: 173FW/Kingsley Field

Address:

302 Bong St., Suite 19
 Klamath Falls, OR 97603

Tel: (541) 885-6472

Director: Marsha S. Beardslee

Email: marsha.beardslee@gmail.com

Klamath Community School District

Sage Community School

Klamath County School District

Bonanza Elementary School
 Chiloquin Elementary School
 Ferguson Elementary School
 Gilchrist School
 Henley Elementary School
 Keno Elementary School
 Malin Elementary School
 Merrill Elementary School

Peterson Elementary School
Shasta Elementary School
Stearns Elementary School

Klamath Falls City Schools

Conger Elementary School
Fairview Elementary School
Mills Elementary School
Pelican Elementary School
Roosevelt Elementary School

STARBASE 2.0

Start Date: 2011
Service Component: Air National Guard
Location:
Kingsley Field
302 Bong St., Suite 19
Klamath Falls, OR 97603
School POC: Lana Ross
Tel: (541) 883-5025
Email: rossla@kcsd.k12.or.us

2.0 Program Coordinator: Marsha S. Beardslee
Tel: (541) 885-6472
Email: marsha.beardslee@gmail.com

PORTLAND

STARBASE Portland

Start Date: 1993
Service Component: Air National Guard
Military Location: Portland Air National Guard Base
Address:
6801 NE Cornfoot Rd.
Portland, OR 97218
Tel: (503) 335-5364
Director: Melinda Lepore
Email: BernardLepore@gmail.com

Canby School District

Eccles Elementary School

Clackamas School District

Cascade Heights Public Charter School

Portland Public School District

Beverly Cleary Elementary School
Bridger Elementary School
Faubion Elementary School
Harrison Park Elementary School
Irvington Elementary School

Laurelhurst Elementary School
Llewellyn Elementary School
Rigler Elementary School
Rosa Parks Elementary School
Roseway Heights Elementary School
Sitton Elementary School
Woodstock Elementary School

Private

Horizon Christian Elementary School

Reynolds School District

Alder Elementary School
Multi-Sensory Learning Academy

PENNSYLVANIA

NORTH VERSAILLES

STARBASE – Atlantis Pittsburgh

Start Date: 2002
Service Component: Navy
Military Location: Navy Operational Support Center -
Pittsburgh
Address:
625 E. Pittsburgh/McKeesport Blvd.
North Versailles, PA 15137
Tel: (412) 673-0801 x135
Fax: (412) 673-1381
Director: Ken C. Mechling, Jr.
Email: starbase.ken.mechlingjr@comcast.net
Website: www.starbasedod.org

California Area

California Area Intermediate Middle School

Diocese of Pittsburgh

St. Bartholomew School
St. Bernadette School
St. Irenaeus School
St. Joseph School

East Allegheny

Logan Middle School

McKeesport Area

Francis McClure Intermediate School

Monessen City

Monessen Elementary Center

Penn Hills

Linton Middle School

PUERTO RICO

CAROLINA

STARBASE Puerto Rico

Start Date: 1995

Service Component: Air National Guard

Military Location: 156th Airlift Wing-Muñiz Air National Guard Base

Address:

200 Jose A. Santana Ave.

Muñiz ANG Base

Carolina, Puerto Rico 00979

Tel: (787) 253-5100 Ext. 2539502

(787) 903-1796

Fax: (787) 253-2513

Director: Idabells Rivera

Email: idabells.matos@gmail.com

Website: www.starbasepr.org

Aguadilla

Escuela Liceo Aguadillano

Bayamón

Escuela Cristóbal Colón

Carolina

Escuela Cruz Salguero Torres

Escuela Dr. Clemente Fernández

Escuela José Severo Quiñones

Comerío

Escuela Inés M. Mendoza

Corozal

Escuela De La Comunidad Antonio Rivera

Escuela Fidel López Colón

Escuela Manuel Bou Galí

Fajardo

Escuela José Ramón Agosto

Luquillo

Boy Scouts Group Troop 4400

Manatí

Escuela Dr. Juan S. Marchand

Mayagüez

Escuela Ramón Rodríguez Díaz

Morovis

Escuela Dr. Pedro Ortiz

San Juan

Escuela República Del Perú

Escuela Villa Granada Elemental

Escuela Villa Granada Elemental

Escuela Villa Granada Intermedia

San Juan/Carolina

Puerto Rico National Guard & Puerto Rico Air National Guard Dependants Group

San Sebastián

Escuela Aibonito Beltrán

Escuela Narciso Rabell Cabrero

San Sebastián

Escuela Aibonito Beltrán

Escuela Narciso Rabell Cabrero

Santa Isabel

Escuela Segunda Unidad Manuel Candanedo Ortiz

Toa Alta

Girl Scouts Group Troop 624

Toa Baja

Academia Espíritu Santo

Puerto Rico Christian School

Trujillo Alto

Escuela El Conquistador

RHODE ISLAND

NEWPORT

STARBASE – Atlantis Newport
 Start Date: 2004
 Service Component: Navy
 Military Location: Naval Station Newport
 Address:
 440 Meyerkord Ave.
 Perry Hall, Rm. 104
 Newport, RI 02841
 Tel: (401) 841-3121
 Fax: (401) 841-4075
 Director: Lori Henault
 Email: lori.henault@navy.mil

Fall River School District
 Atlantis Charter School

Jamestown School District
 Lawn Avenue School

Newport School District
 Thompson Middle School

North Kingstown School District
 Fishing Cove Elementary School
 Forest Park Elementary School
 Hamilton Elementary School
 Stony Lane Elementary School
 Suzanne M. Henseler Quidnessett

Portsmouth School District
 The Pennfield School

Providence Diocese
 The Cluny School

SOUTH CAROLINA

BEAUFORT

STARBASE MCAS Beaufort
 Start Date: 1999
 Service Component: Marine Corps
 Military Location: Marine Corps Air Station
 Address:
 MCAS Beaufort
 Bldg. 660
 Beaufort, SC 29904
 Tel: (843) 524-1320
 Fax: (843) 524-1326
 Director: Robert W. Semmler
 Email: semmlerrw@gmail.com

Beaufort County School District
 Beaufort Elementary School
 Hilton Head Island Elementary School
 Lady's Island Middle School
 Mossy Oaks Elementary School
 Okatie Elementary School
 Port Royal Elementary School
 Robert Smalls Middle School
 St. Helena Elementary School
 Whale Branch Middle School

Colleton County
 Bells Elementary School
 Cottageville Elementary School
 Forest Hills Elementary School
 Northside Elementary School
 Hendersonville Elementary School

DoDEA
 Bolden Elementary School

Hampton County
 Brunson Elementary School
 Hampton Elementary School

Private School
 Beaufort Academy
 Community Bible Church Christian Academy
 Holy Trinity Classical Christian School
 St. Gregory the Great Catholic School
 St. Peters Catholic School
 Thomas Heyward Academy

EASTOVER**STARBASE Swamp Fox**

Start Date: 2001

Service Component: Air National Guard

Military Location: McEntire Joint NGB

Address:

1325 South Carolina Rd.

Stop #39

Eastover, SC 29044

Tel: (803) 647-8126

Fax: (803) 647-8195

Director: John Motley

Email: john.motley.1@ang.af.mil

Website: www.scstarbase.org

District Five of Lexington and Richland Counties

H. E. Corley Elementary School

Irmo Elementary School

Nursery Road Elementary School

Lee County School District

West Lee Elementary School

Lexington County School District Two

B. C. Grammar Elementary School

C. A. Taylor Elementary School

Other

Homeschool Group

Richland County School District One

A.C. Moore Elementary School

Gadsden Elementary School

Hopkins Elementary School

Webber Elementary School

Forest Heights Elementary School

Richland County School District Two

Catawba Trail Elementary School

Roman Catholic Diocese of Charleston

St. John Neumann Catholic School

St. Joseph Catholic School

St. Peters Catholic School

SC/Fort Stewert School District

C. C. Pinckney Elementary School

Sumter School District

F. J. DeLaine Elementary School

High Hills Elementary School

SOUTH DAKOTA***RAPID CITY*****STARBASE NOVA Honor**

Start Date: 2002

Service Component: Air National Guard

Military Location:

South Dakota National Guard Camp Rapid

Address:

2823 West Main St., Bldg. 801

Rapid City, SD 57702

Tel: (605) 737-6083

Fax: (605) 737-6082

Director: Sarah Jensen

Email: sarah@sdstarbase.org

Website: www.sdstarbase.org

Custer School District 16-1

Custer Elementary School

Hermosa School

Eagle Butte School District 20-1

Eagle Butte Upper Elementary School

Faith School District 46-2

Faith School

Hot Springs School District 23-2

Hot Springs Elementary School

Kadoka Area School District 35-2

Kadoka School

Lyman School District 52-4

Lyman County School

McIntosh School District 15-1

McIntosh School

Meade School District 46-1

Piedmont Elementary School

Sturgis Elementary School

Whitewood School

New Underwood School District 51-3

New Underwood School

Non-Public School 07301

St. Joseph's Indian School

Non-Public School 65301

Our Lady of Lourdes Elementary School
Red Cloud Indian School

Shannon County School District 65-1

Batesland Elementary School
Red Shirt Indian School
Wolf Creek Elementary School

Stanley County School District 57.1

Stanley County School

Tribal/BIE School 32301

Pierre Indian Learning Center

Tribal/BIE School 65311

Pine Ridge Indian Elementary School

RAPID CITY

STARBASE Rapid City

Start Date: 2002

Service Component: Air National Guard

Military Location:

South Dakota Army National Guard, Camp Rapid

Address:

2823 West Main St., Bldg. 801
Rapid City, SD 57702

Tel: (605) 737-6083

Fax: (605) 737-6082

Director: Sarah Jensen

Email: sarah@sdstarbase.org

Website: www.sdstarbase.org

Douglas School District 51-1

Vandenberg Elementary School

Rapid City Area Schools 51-4

Black Hawk Elementary School
Canyon Lake Elementary School
General Beadle Elementary
Horace Mann Elementary School
Knollwood Heights Elementary School
Rapid Valley Elementary School
Robbinsdale Elementary School
South Park Elementary School
Valley View Elementary School

Non-Public School 51304

Zion Lutheran Church and School

STARBASE 2.0

Start Date: 2008

Service Component: Air National Guard

Location 1:

Douglas Middle School
401 Tower Rd.
Box Elder, SD 57719

School POC: Tiffany Meyer

Tel: (406) 780-1184

Email: tiffany.meyer@sdstate.edu

Location 2:

North Middle School
1501 North Mable Ave
Rapid City, SC 57701

School POC: Tiffany Meyer

Tel: (406) 780-1184

Email: tiffany.meyer@sdstate.edu

2.0 Program Coordinator: Sarah Jensen

Tel: (605) 484-8684

Email: sarah@sdstarbase.org

SIOUX FALLS

STARBASE NOVA Courage

Start Date: 2008

Service Component: Air/Army National Guard

Military Location: National Guard, Sioux Falls

Address:

801 W National Guard Dr.
Sioux Falls, SD 57104

Tel: (605) 367-4930

Fax: (605) 367-4926

Director: Vonny Revell

Email: vonny@sdstarbase.org

Website: www.sdstarbase.org

Big Stone

Big Stone City School

Browns Valley

Browns Valley Elementary School

Garretson

Garretson Elementary School

Rosebud County

Rosebud Elementary School

Sisseton

Sisseton Westside Elementary School

Todd County

HeDog Elementary School
 Klien Elementary School
 Lakeview Elementary School
 Littleburg Elementary School
 Norris Elementary School
 Okreek Elementary School
 South Elementary School

Wagner

Wagner Elementary School

SIOUX FALLS**STARBASE Sioux Falls**

Start Date: 1994

Service Component: Air/Army National Guard

Military Location: Air/Army National Guard

Address:

801 W National Guard Dr.
 Sioux Falls, SD 57104

Tel: (605) 367-4930

Fax: (605) 367-4926

Director: Vonny Revell

Email: vonny@sdstarbase.org

Website: www.sdstarbase.org

Sioux Falls

Cleveland Elementary School
 Eugene Field Elementary School
 Garfield Elementary School
 Hawthorne Elementary School
 Hayward Elementary School
 Hoarce Mann Elementary School
 Jefferson Elementary School
 Laura B Anderson
 Longfellow Elementary School
 Lowell Elementary School
 Renberg
 Robert Frost Elementary School
 St. Lambert Elementary School
 Terry Redlin Elementary School
 All City Elementary School

TEXAS**AUSTIN****Texas STARBASE Austin**

Start Date: 2012

Service Component: Air National Guard

Military Location: Camp Mabry

Address:

2200 West 35th St., Bldg. # 31
 Austin, TX 78703

Tel: (512) 782-3454

Director: Gail Whittemore-Smith

Email: gail.whittemore@ang.af.mil

Austin Independent School District

Govalle Elementary School
 Linder Elementary School
 McBee Elementary School
 Norman Elementary School
 Odom Elementary School
 Palm Elementary School
 Redeemer Lutheran
 Reilly Elementary School School
 St. Francis School
 T.A. Brown Elementary School

Catholic Diocese of Austin

Cathedral School of St. Mary
 St. Austin Catholic School

Del Valle Independent School District

Creedmoor Elementary School
 Del Valle Elementary School
 Gilbert Elementary School
 Hillcrest Elementary School
 Hornsby-Dunlap Elementary School
 Smith Elementary School

CORPUS CHRISTI**STARBASE – Atlantis Corpus Christi****Start Date: 2006****Service Component: Navy****Military Location: Naval Air Station Corpus Christi****Address:**

11001 D St., Bldg. 60

Corpus Christi, TX 78419

Tel: (361) 961-5318**Fax: (361) 961-3566****Director: Crystal Trujillo****Email: crystal.trujillo@navy.mil****Website: www.netc.navy.mil/community/starbase/corpuschristi/Default.aspx*****Corpus Christi Independent School District***

Crockett Elementary School

Galvan Elementary School

Gibson Elementary School

Woodlawn Elementary School

Yeager Elementary School

Diocese of Corpus Christi

Central Catholic School

St. Patrick Catholic School

St. Pius X Catholic School

Flour Bluff Independent School District

Flour Bluff Intermediate School

HOUSTON**Texas STARBASE Houston****Start Date: 1994****Service Component: Air National Guard****Military Location: Ellington Field****Address:**

14657 Sneider St., Bldg. #1055

Houston, TX 77034

Tel: (281) 929-2034**Fax: (281) 929-2036****Director: Gail Whittemore-Smith****Email: gail.whittemore@ang.af.mil*****Galena Park ISD***

Cloverleaf Elementary School

Havard Elementary School

Jacinto City Elementary School

North Shore Elementary School

Purple Sage Elementary School

Pyburn Elementary School

Sam Houston Elementary School

Shirley J. Williamson Elementary School

Tice Elementary School

Woodland Acres Elementary School

Galveston-Houston Dioceses

St. Mary's Houston

St. Rose of Lima Catholic

Home School

Faith Home School

Gulf Coast Christian Home School Scholars

Houston ISD

Cornelius Elementary School

George L. Sancehez Elementary School

James H. Law Elementary School

Lantrip Elementary School

Leeona Leroy Pugh Elementary School

Pleasantville Elementary School

Valley West Elementary School

Wainwright Elementary School

Woodson Leadership Academy

Humble ISD

Whispering Pines Elementary School

La Marque ISD

Highlands Elementary School

Pasadena ISD

Fisher Elementary School

Williams Elementary School

Earnesteen Milstead Middle School

Bailey Elementary School

Bobby Shaw Middle School

De Zavala Middle School

Dr. Dixie Melillo Middle School

L. F. Smith Elementary School

Morris Middle School

Sheldon ISD

Carroll Elementary School

Garrett Elementary School

Monahan Elementary School

Royalwood Elementary School

Sheldon Elementary School

JOINT BASE SAN ANTONIO – LACKLAND**STARBASE Kelly**

Start Date: 1995

Service Component: Air Force Reserve

Military Location: JBSA - Lackland, TX

Address:

203 Galaxy Rd., Suite 112

JBSA-Lackland, TX 78236

Tel: (210) 925-5397

Fax: (210) 925-3702

Director: Ronald N. Jackson

Email: starbase@clear.net

Archdiocese of San Antonio

Rolling Hills Catholic School

St Anthony Catholic School

Edgewood ISD

Las Palmas Elementary School

Winston Elementary School

San Antonio ISD

Beacon Hill Elementary School

Briscoe Academy

Gates Elementary School

Highland Hills Elementary School

JT Brackenridge Elementary School

Mission Academy

South San Antonio ISD

Benavides Elementary School

Palo Alto Elementary School

Southwest ISD

Elm Creek Elementary School

Sky Harbour Elementary School

UTAH**HILL AFB****STARBASE Hill Screaming Eagles**

Start Date: 2011

Service Component: Air Force

Military Location: Hill Air Force Base

Address:

5731 E Ave., Bldg. 460

Hill AFB, UT 84056

Tel: 801-586-7494

Director: Frances EP Bradshaw

Email: frances.bradshaw@starbasehill.com

Davis

Adelaide Elementary School

Antelope Elementary School

Bluff Ridge Elementary School

Crestview Elementary School

Doxey Elementary School

Eagle Bay Elementary School

Foxboro Elementary School

Fremont Elementary School

Hill Field Elementary School

King Elementary School

Layton Elementary School

Lincoln Elementary School

Meadowbrook Elementary School

Orchard Elementary School

South Clearfield Elementary School

Sunset Elementary School

Syracuse Elementary School

Vae View Elementary School

Washington Elementary School

Whitesides Elementary School

Ogden

Venture Academy

VERMONT

RUTLAND

STARBASE Vermont - Rutland
Start Date: 2001
Service Component: Army National Guard
Military Location: Rutland Armed Forces Reserve Center
Address:
 2143 Post Road
 Rutland, VT 05701
Tel: (802) 786-3820
Fax: (802) 786-3822
Director: Dan Myers
Email: dan@starbasevt.org
Website: www.starbasevt.org

Addison Central Supervisory Union
 Ripton Elementary School
 Salisbury Community School
 Shoreham Elementary School

Addison-Rutland Supervisory Union
 Castleton Elementary School
 Orwell Village School
 Benson Village School

Diocese of Burlington
 Christ the King School
 Rutland Area Christian School

Rutland Central Supervisory Union
 Proctor Elementary School
 West Rutland School

Rutland City School District
 Rutland Intermediate School

Rutland Norhteast Supervisory Union
 Neshobe School
 Barstow Memorial School
 Lothrop School

Rutland South Supervisory Union
 Wallingford Elementary School

Rutland Southwest Supervisory Union
 Poultney Elementary School
 Wells Village School

Rutland-Winsor Supervisory Union
 Mount Holly School

Southwest Vermont Supervisory Union
 Shaftsbury Elementary School

Windham Central Supervisory Union
 Jamaica Village School
 Wardsboro Elementary School
 Windham Elementary School

Windsor Central Supervisory Union
 Killington Elementary School

Windsor Northwest Supervisory Union
 Rochester School
 Stockbridge Central School

Windsor Southwest Supervisory union
 Cavendish Elementary School

SOUTH BURLINGTON

STARBASE Vermont - South Burlington
Start Date: 1994
Service Component: Air National Guard
Military Location: 62 NCO Drive
Address:
 62 NCO Dr., Bldg. 90
 South Burlington, VT 05403
Tel: (802) 660-5201
Fax: (802) 660-5940
Director: Dan Myers
Email: dan@starbasevt.org
Website: www.starbasevt.org

Addison East Supervisory Union
 Lincoln Community School

Addison Northwest Supervisory Union
 Vergennes Elementary School

Burlington School District
 Christ the King School
 Integrated Arts Academy at H.O Wheeler
 J.J. Flynn Elementary

Chittenden County
 Home School Group

Chittenden East Supervisory Union
 Browns River Middle School

Franklin Central Supervisory Union
Saint Albans Town Educational Center

Franklin Northeast Supervisory Union
Bakersfield Elementary School

Franklin Northwest Supervisory Union
Highgate Elementary School

Franklin West Supervisory Union
Bellows Free Academy (Fairfax)

Grand Isle Supervisory Union
Folsom Educational Center
Alburg Community Education Center
Grand Isle School

Lamoille North Supervisory Union
Cambridge Elementary School

South Burlington School District
Orchard Elementary School

Washington Central Supervisory Union
Central Vermont Catholic School

Winooski School District
John F. Kennedy School

VIRGINIA

NORFOLK

STARBASE – Atlantis Norfolk
Start Date: 1995
Service Component: Navy
Military Location: Naval Station Norfolk
Address:
1474 Gilbert St., Bldg N-30, Ste 203
Norfolk, VA 23511
Tel: (757) 445-5909
Fax: (757) 445-2624
Director: Laura Bennett
Email: laura.bennett@navy.mil
Website: www.netc.navy.mil/community/starbase/norfolk/

Norfolk Public Schools
Camp Allen Elementary School
Crossroads School
Fairlawn Elementary School

Granby Elementary School
Poplar Halls Elementary School
Richard Bowling Elementary School
St. Helena Elementary School
Tidewater Park Elementary School
W. H. Taylor Elementary School

Private School
Faith Academy of Excellence

WINCHESTER

Winchester STARBASE Academy
Start Date: 2012
Service Component: Army National Guard
Military Location: Winchester, VA
Address:
181 Pendleton Dr.
Winchester, VA 22602
Tel: (540) 686-4964
Director: Susan Corrigan
Email: starbasewinchester@gmail.com
Website: www.starbasewinchester.webs.com

Catholic Diocese
Sacred Heart Academy

Clarke County
DG Cooley

Frederick County
Orchard View
Redbud Run
Stonewall

Independent
Independent School of Winchester

Massanutten Military Academy
Massanutten Military Academy

Shenandoah County
Signal Knob

Winchester City
Daniel Morgan
John Kerr
Quarles
Virginia Avenue Charlotte Dehart

WASHINGTON

SILVERDALE

STARBASE – Atlantis Silverdale

Start Date: 2001

Service Component: Navy

Military Location:

Trident Training Facility, Naval Base Kitsap-Bangor

Address:

2000 Thresher Ave, D-222

Silverdale, WA 98315

Tel: (360) 315-2671

Fax: (360) 315-2747

Director: Mo Yates

Email: morrell.yates@navy.mil

Website: www.netc.navy.mil/community/starbase/bangor/Default.aspx**Bremerton**

View Ridge Junior High School

Central Kitsap School District

Cottonwood Elementary School

Chimacum

Chimacum Elementary School

Kitsap School District

Brownsville Elementary School

Clear Creek Elementary School

Cougar Valley Elementary School

North Kitsap

Gordon Elementary School

Poulsbo Elementary School

Suquamish Elementary School

Wofle Elementary School

Private

Cross Point

Gateway Christian

Our Lady Star of The Sea

Peace Lutheran

TACOMA

Evergreen STARBASE

Start Date: 2011

Service Component: Air National Guard

Military Location: JBLM

Address:

307 Pitsenbarger Ave

Joint Base Lewis McChord

Tacoma, WA 98438

Tel: (253) 212-3305

Director: Lisa Dowling

Email: lisa.dowling@evergreenstarbase.orgWebsite: www.washingtonguard.org/evergreen_starbase/index.shtml**Bethel School District**

Camas Prairie Elementary School

Kapowsin Elementary School

Roy Elementary School

Centralia School District

Oakview Elementary School

Olympia School District

Garfield Elementary School

Madison Elementary School

Tacoma Public School District

Jennie Reed Elementary School

Manitou Park Elementary School

Other

Chief Leschi School

Private

Cascade Christian School

Concordia Lutheran School

Cornerstone Christian

Hope Lutheran Church and School

WEST VIRGINIA

CHARLESTON

West Virginia STARBASE Academy
 Start Date: 2001
 Service Component: Air National Guard
 Military Location: 130th Airlift Wing
 Address:
 1679 Coonskin Dr.
 Charleston, WV 25311
 Tel: (304) 341-6440
 Fax: (304) 341-6445
 Director: Chris Treadway
 Email: christopher.treadway@ang.af.mil
 Website: www.wvstarbase.org

Kanawha County Schools

Alum Creek Elementary School
 Cedar Grove Community School
 Chesapeake Elementary School
 Clendenin Elementary School
 Dunbar Intermediate School
 Kenna Elementary School
 Malden Elementary School
 Midland Trail Elementary School
 Pinch Elementary School
 Ruthlawn Elementary School
 Sharon Dawes Elementary School
 Sissonville Middle School
 Weimer Elementary School

Private School

Bible Center School
 Saint Francis of Assisi School

STARBASE 2.0

Start Date: 2012
 Service Component: Air National Guard
 Location:
 1679 Coonskin Dr.
 Charleston, WV 25311
 School POC: Henry Graves
 Tel: (304) 348-1918
 Email: hgraves@kcs.kana.k12.wv.us

 2.0 Program Coordinator: Chris Treadway
 Tel: (304) 341-6441
 Email: christopher.treadway@ang.af.mil

MARTINSBURG

STARBASE Martinsburg
 Start Date: 2002
 Service Component: Air National Guard
 Military Location: 167th Airlift Wing
 Address:
 222 Sabre Jet Blvd.
 Bldg. 120 Room G08
 Martinsburg, WV 25405
 Tel: (304) 616-5501
 Fax: (304) 616-5478
 Director: Sherra Triggs
 Email: sherra.triggs@ang.af.mil
 Website: www.starbasemartinsburg.webs.com

Berkeley

Eagle School Intermediate School
 Faith Christian Academy
 Mill Creek Intermediate School
 Mountain Ridge Intermediate School
 Orchard View Intermediate School
 Potomack Intermediate School
 Saint Joseph Parish School
 Tomahawk Intermediate School

Frederick

Sacred Heart Academy

Jefferson

T A Lowery Elementary School
 Wright Denny Intermediate School

STARBASE 2.0

Start Date: 2013
 Service Component: Air National Guard
 Location:
 Martinsburg South Middle School
 150 Bulldog Blvd.
 Martinsburg, WV 25401
 School POC: John E. Berry
 Tel: (304) 267-3545
 Email: jberry@access.k12.wv.us

2.0 Program Coordinator: Ashley Spies
 Tel: (304) 616-5501
 Email: ashley.spies@ang.af.mil

WISCONSIN

MILWAUKEE**STARBASE Wisconsin**

Start Date: 2011

Service Component: Air National Guard

Military Location: US Army Reserve Center

Address:

5130 W Silver Spring Dr., Bldg. 301

Milwaukee, WI 53218

Tel: (414) 535-5786

Director: Dr. Charisse Sekyi

Email: csekyi@starbasewi.org

Website: www.starbasewi.org

Milwaukee Public Schools

53rd St. Elementary School

95th St. School Elementary School

Alcott Elementary School

Brown St. Academy Elementary School

Bruce Elementary School

Cooper Elementary School

Curtin Elementary School

Emerson Elementary School

Engleburg Elementary School

Garland Elementary School

Goodrich Elementary School

Grantosa Elementary School

Gwen T. Jackson Elementary School

Hampton Elementary School

Hayes Bilingual Elementary School

Hi-Mount Elementary School

Kagel Elementary School

Kilbourn Elementary School

Kluge Elementary School

Manitoba Elementary School

Maple Tree Elementary School

Parkview Elementary School

Sherman Elementary School

Spanish Immersion Elementary School

Stuart Elementary School

Thurston Woods Elementary School

Townsend Elementary School

Walt Whitman Elementary School

Westside Academy Elementary School

Milwaukee Public Schools (Charter)

Milwaukee College Prep-38th St.

Milwaukee College Prep-Lloyd St.

Private

Emmaus Lutheran School

Milwaukee College Prep-36th St.

Washington Dubois Christian Academy

WYOMING

CHEYENNE**Wyoming STARBASE Academy**

Start Date: 1994

Service Component: Air National Guard

Military Location: Raper Armory

Address:

5410 Bishop Blvd.

Cheyenne, WY 82009

Tel: (307) 777-8191

Director: Barb Marquer

Email: barbm@starbasewy.org

Website: sites.google.com/a/wyo.gov/wyoming
starbaseacademy/home**Laramie County School District #1**

Afflerbach Elementary School

Alta Vista Elementary School

Arp Elementary School

Bain Elementary School

Buffalo Ridge Elementary School

Cole Elementary School

Dildine Elementary School

Fairview Elementary School

Gilchrist Elementary School

Goins Elementary School

Hebard Elementary School

Henderson Elementary School

Hobbs Elementary School

Miller Elementary School

Pioneer Park Elementary School

Rossman Elementary School

St. Mary's School

Sunrise Elementary School

Burns Elementary School

Carpenter Elementary School

Baggs Elementary School

Laramie County School District #2

Burns Elementary School

Carpenter Elementary School

Pine Bluffs Elementary School

STARBASE 2.0

Start Date: 2012

Service Component: Air National Guard

Location:

Johnson Junior High
1236 West Allison Rd.
Cheyenne, WY 82007

School POC: Kade Skinner

Tel: (307) 771-2640

Email: skinnerk@laramie1.org

2.0 Program Coordinator: Barb Marquer

Tel: (307) 777-8191

Email: barbm@starbasewy.org



For more information contact:

Office of the Assistant Secretary of Defense/Reserve Affairs (OASD/RA)
1500 Defense Pentagon
Washington, DC 20301-1500
Phone: 703.693.8630

www.dodstarbase.org

