

Tomorrow's Innovative Workforce Inspired by DoD STARBASE

Outreach



Collaboration



Participation



Involvement

ANNUAL REPORT
2016

DoD **STARBASE**
A Department of Defense Youth Program

“Thank you for bringing wonder and excitement to all the kids! You all have created great memories and long lasting impressions that, hopefully spark the lifelong fire toward science, technology, engineering and mathematics (STEM) in their lives. Thank you.”

– GERARD MCDONALD, PARENT OF STUDENT AT SAINT ANTHONY DE PADUA ATTENDING
STARBASE INDIANA - SOUTH BEND



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"I would like to personally thank DoD STARBASE for allowing me to volunteer my time to assist them in such a wonderful and educational program. I have witnessed firsthand what a positive and rewarding program DoD STARBASE is for the children who attend and the volunteers. The program affords children the opportunity to learn important social, educational and life skills/tools that will stay with them for the rest of their lives. So many children today are left without healthy social and educational interaction. This program is crucial to the children who attend—I have seen them blossom in the program and learn so much in the short time teachers and volunteers spend with them."

— ELIZABETH ANNE OBERMILLER,
SMSGT USAF 138 FW (US),
STARBASE OKLAHOMA - TULSA

VISION AND MISSION STATEMENTS OF DoD STARBASE

Vision Statement

To be the premier Department of Defense youth outreach program for raising the interest in learning and improving the knowledge and skills of our nation's at risk youth, so that we may develop a highly educated and skilled American workforce who can meet the advanced technological requirements of the Department of Defense.

Mission Statement

To expose our nation's youth to the technological environments and positive civilian and military role models found on Active, Guard, and Reserve military bases and installations, nurture a winning network of collaborators, and build mutual loyalty within our communities, by providing 25 hours of exemplary hands-on instruction and activities that meet or exceed the National Standards.



DoD STARBASE Curriculum

Physics and Chemistry

- A. Motion and Force
- B. Fluid Mechanics
- C. Building Blocks of Matter

Energy

- A. Energy Fundamentals

Technology

- A. Current and Emerging Technologies
- B. Applying Technology

Engineering

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

Mathematics Operations and Applications

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

Science, Technology, Engineering and Mathematics (STEM) Careers

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



"My daughter was very excited to share about all she learned while attending DoD STARBASE. It was an engaging, educational, and highly-memorable part of her fifth grade year!"

— ELIZABETH SIZEMORE, PARENT OF STUDENT AT SHAW ELEMENTARY SCHOOL, ATTENDING STARBASE WRIGHT-PATT

DoD STARBASE AT A GLANCE



61	Number of DoD STARBASE locations in 32 states and one territory
50	Number of DoD STARBASE 2.0 Outreach programs in 15 states
1,027,492	Number of students since 1993
74,709	Number of students served in 2016
\$22,783,000	Program budget
\$338,468	Median operating cost per location

DoD STARBASE GRADUATES: **Where Are They Now?**

Former DoD STARBASE Students Speak Out

With more than 20 years of the DoD STARBASE program in the history books, it's only natural to wonder what the impact has been on the more than one million student participants. These three DoD STARBASE student graduates were highlighted in previous DoD STARBASE Annual Reports and have updated us on where they have gone with their careers since attending DoD STARBASE so many years ago. DoD STARBASE definitely can and does make a life-long difference in America's future.



"DoD STARBASE is an outstanding opportunity to reach out to local youth and demonstrate how science and technology are integrated in our day to day lives."

— RICHARD MCGREGGOR, PFC (AIRMAN), STARBASE NELLIS

DOD STARBASE GRADUATES: WHERE ARE THEY NOW? (CONT.)

A Letter from LTJG Westin Marele Giles, U.S. Navy

Greetings DoD STARBASE!

This is LTJG Westin Marele Giles. While I am several years removed from having attended the DoD STARBASE Program, I am forever grateful for the opportunity I had in 2003 to attend the Navy's "first" DoD STARBASE Atlantis Academy in Pensacola, Florida which inspired my interest in Naval Science. Since graduating from Florida A&M University and being Commissioned into the United States Navy in December 2013, I am currently executing my duties and responsibilities as a Naval Officer in the greatest Navy in the world.

After completing the Basic Division Officer Course in April 2014, I began a two-year forward deployment aboard the USS SHILOH in Yokosuka, Japan. During this deployment, I served as the Gunnery Officer and later as the Electrical Officer. I participated in multiple patrols and Ports of Call in the Seventh Fleet spanning across seven countries from Singapore to Guam. While the SHILOH was in dry-dock, I had the opportunity to serve aboard the USS FITZGERALD that allowed me to complete my required studies and experiences without interruption. While there, I successfully completed all of the requirements and earned my designation as a Surface Warfare Officer. I also received a promotion to Lieutenant Junior Grade. Overall, I learned a lot about our Navy and our mission's impact.

Each day is a learning experience that I welcome in my commitment to become the best Naval Officer I can be. In my nearly three years in the Navy, I have had the privilege to participate in joint operations with foreign navies and have encountered people

DoD STARBASE 2010 featured DoD STARBASE Graduate Westin Giles with Admiral Roughhead during his Naval commissioning ceremony in 2009.



from all walks of life. In addition to the talented men and women I have had the honor to serve with, I was fortunate enough to meet the Secretary of the Navy and Chief of Naval Operations, two of the most senior leaders of this great Navy, during their visits to Yokosuka. It has been a privilege to learn something from them all.

In June 2016, I completed my deployment aboard the USS SHILOH and left Japan. I learned a lot about U.S. Navy Operations and had experiences that serve as the foundation to my development as a Naval Officer. My new assignment is to report as the Auxiliaries Officer on the USS RALPH JOHNSON, named after Vietnam-era Marine and Medal of Honor recipient Ralph Johnson. Once commissioned, the USS RALPH JOHNSON will be the 30th active-duty Arleigh Burke-class missile destroyer in the fleet. As a member of the Pre-Commissioning Unit, I am receiving training in preparation for the 2017 commissioning of the USS RALPH JOHNSON. I am honored to have been selected for this assignment and my growth and development continues. In preparation for my second Division Officer tour, I recently graduated from the Advanced Division Officer Course and the AUXO/ELECTRO Course held at the Surface Warfare Officer School in Newport, Rhode Island. I am looking forward to continuing my journey aboard the USS RALPH JOHNSON in its future homeport at Naval Station Everett, Washington.

In my life's educational experiences, I always see the DoD STARBASE program as a significant plank in my foundation. It is my hope that future fifth graders have the same opportunity that I had to attend a DoD STARBASE program.



LTJG Westin Marele Giles meets Secretary of the Navy, Ray Mabus aboard the USS SHILOH in Yokosuka, Japan

“In my life's educational experiences, I always see the DoD STARBASE program as a significant plank in my foundation.”

– WESTIN GILES

DOD STARBASE GRADUATES: WHERE ARE THEY NOW? (CONT.)



Scott Lee was one of the featured DoD STARBASE graduates in our 2005 Annual Report at the start of his career with the Coast Guard

A Letter from AET1 Scott Lee, U.S. Coast Guard

Hello DoD STARBASE!

Where am I now? When we last spoke in 2005, I was a Third Class Petty Officer, two years into a project to bring the newest Coast Guard plane, the HC-130J, into operation. Today, I am a seasoned First Class Petty Officer, two years into a similar project to bring our newest plane, the HC-27J into operation.

Since 2005, we did get the new search equipment for the HC-130J, and we got the planes set up at the Air Station in Elizabeth City, North Carolina. I qualified as a Mission System Operator (MSO) and learned to use the new search equipment to save lives. In fact, if you do a search on a boat named "Gloria A Dios" you can read about a man I saved in 2010. The Navy Carrier Eisenhower helped too. It made national news, and the video I took using the plane's camera made it on TV and is still on the internet.

As the MSO on that flight, I was the one responsible for finding the boat and its one crew member. I was able to triangulate his position using our direction finding radios. Once we got in range of the boat, I contacted him on his hand held radio and asked him to launch a flare. The flare came up through the clouds right in front of our plane. The

instructors at DoD STARBASE were the first ones to teach me about triangulation, radios and survival equipment. I specifically remember your life support personnel during a lecture telling us, "Listen up, this could save a life one day."

Over the past 14 years, I have taken our Coast Guard planes to many air shows and given tours to many classes from our local schools. I can now relate to your military volunteers and the joy and fear they must have had having tens to hundreds of students set loose on the plane. I remember back then, when I was on a tour myself, pushing quite a few buttons while the pilots weren't looking and trying desperately to find an ejection seat handle.

In 2010, I moved to Miami, Florida and helped setup another of our new planes, the HC-144. Most people have never seen or heard of the C-27J or the HC-144. They are both smaller, two engine versions of the C-130. While in Miami I was also a MSO and used our search equipment to aid in maritime law enforcement missions. In 2014, I moved back to North Carolina and started on the C-27J project that I am working on now. I spent most of 2014 and 2015 in Arizona at the 309th Aerospace Maintenance and Regeneration Group (AMARG) "Bone Yard" getting our planes ready to fly again. I spent most of last summer in California setting up Coast Guard Air Station Sacramento with four of the HC-27Js.

I would like to say all of that was easy and went according to plan, but this is military aviation so...thankfully, someone at DoD STARBASE back when I was in 5th grade, taught me about team building, leadership and problem solving, not to mention Science, Technology, Engineering and Math. Much like handing an 11 year-old a bucket of LEGOs and asking them to create a

viable moon base, this job requires a lot of creative thinking. I'm currently an Avionics and Electrical Technician in charge of two dozen personnel who are tasked with maintaining and flying a plane that is completely new to everyone.

What I learned back in 5th grade at DoD STARBASE stands out as foundation for the experience I use daily. The amount of times I've needed to convince five people to sit down and work together or had the need to convert from metric to standard, gallons to pounds, nautical miles to statute mile, or just needed to navigate across an ocean while calculating the amount of gas we will need to get back home, are too many to count. These are all concepts I learned in 5th grade at DoD STARBASE. I really do love what I do. It's a challenging hands-on job where I can do anything I set my mind to and it all started with you. Thanks!



First Class Petty Officer, Scott Lee is currently serving as an Avionics/ Electrical Technician in the U.S. Coast Guard.

“What I learned back in 5th grade at DoD STARBASE stands out as foundation for the experience I use daily.”

– SCOTT LEE

DOD STARBASE GRADUATES: WHERE ARE THEY NOW? (CONT.)

Update from **Evie Tompkins, Safety Engineer, Kennedy Space Center**

In 2006, Evie Tompkins said that her rocket from the DoD STARBASE summer camp she had attended at Forbes Air National Guard Base years before in Topeka, Kansas had been kept as a memento of her first rocket launch. Over the past ten years, her dreams, and rockets, got much bigger.

In 2008, Tompkins started working at NASA's Kennedy Space Center in Florida. It had been her long-time dream to work for NASA in one capacity or another, so she was thrilled to have the opportunity to work as a Safety Engineer on the Space Shuttle program as a NASA contractor. It was a bittersweet time as the Shuttle program wound down and ended in 2011, but she enjoyed being part of that history. "I felt so blessed and privileged to be a part of something I've always loved and which made such immense impacts and changes in our world," said Tompkins.

Today, she finds herself in another part of history. Tompkins is working on the design and testing of equipment to be used during launch of the Space Launch System, which will be NASA's next vehicle. The Space Launch System will take astronauts on missions to multiple deep-space destinations. Her job as a Safety Engineer at Kennedy Space Center's Launch Equipment Test Facility involves her with the many umbilical's and launch accessories for the new rocket as they are being developed and tested.

Though her aviation-related beginnings have evolved into a career in aeronautics, Tompkins continues to maintain her pilot and flight instructor certifications and still enjoys flying when she can. Her father, with whom she shared a passion for flight, attended the DoD STARBASE camp with her as a volunteer leader/teacher many years ago, and was also impacted by the

Evie Tompkins was showcased in the DoD STARBASE 2006 Annual Report as a featured graduate.



experience. Tompkins said, "Dad has been a High School Special Education teacher for more than 25 years and is retiring this year. He told me that even his experience at DoD STARBASE had an impact on how he has taught science to his students all these years. After attending, he began having them build and launch their own rockets and does that activity every year. It is always one of their biggest highlights of the school year."

Reflecting on DoD STARBASE today, Tompkins said, "Without a doubt, my experience at DoD STARBASE was a catalyst into my fascination with science and the world of physics. That fascination carried over into my love of aviation and space exploration, which eventually brought me to work on those very things which inspired me throughout my childhood and adolescence. For that influence that DoD STARBASE had on my interests, course of study, and career, I am very grateful. It's a path I have truly enjoyed and am proud of."



Evie Tompkins pictured in front of Space Shuttle Discovery during its last rollover from the Orbiter Processing Facility to the Vehicle Assembly Building at Kennedy Space Center before its final launch.

"My experience at DoD STARBASE was a catalyst into my fascination with science and the world of physics."

– EVIE TOMPKINS



Emily Arnold, age 10

A Letter from Dr. Emily Arnold, Assistant Professor Aerospace Engineering Department, University of Kansas

When I am asked how I decided on Aerospace Engineering as a career, I point to three prominent experiences I had growing up. The first was attending DoD STARBASE as a 4th grader at McConnell Air Force Base in Wichita, Kansas. The second was watching John Glenn blast off into space when I was in 6th grade, and the final thing was the amazing math teacher I had when I was in high school.

Twenty years later, I still look back at my time at DoD STARBASE as a profound moment that helped put me on the path I am on today. I can still feel the excitement I had as a kid when I found out I was going to attend DoD STARBASE. In my mind, going to DoD STARBASE for a day would have been preferred over a day at Disneyland.

I grew up in Hillsboro, Kansas, a small rural town. Most professions I had been exposed to were related to agriculture. However, as far as I can remember, I always had some interest in aerospace. For me, you could say attending DoD STARBASE “scratched an itch” I had as a young girl, and it gave me an opportunity to explore a career field to which I wouldn’t otherwise have had much real exposure.

I obviously wasn’t planning my career at 10 years of age, but DoD STARBASE was an experience that kept me interested in aerospace. Since my days at DoD STARBASE, I have received my Bachelors of Science and Doctorate degrees in Aerospace Engineering from the University of Kansas. After receiving my PhD, I joined the MITRE Corporation where I worked on the Air Force’s Battlefield Airborne Communication Node (BACN) E-11A program.

“I still look back at my time at DoD STARBASE as a profound moment that helped put me on the path I am on today.”

– DR. EMILY ARNOLD



STARBASE Kansas alumni, Dr. Emily Arnold (center), helps prepare the Meridian UAS (Unmanned Aerial System) for takeoff during a 2011 deployment to Antarctica. The Meridian was designed and built by the University of Kansas for cryospheric research.

I currently serve as Assistant Professor in the Aerospace Engineering Department at the University of Kansas. I am the first female faculty member in the department's near 75-year history. My research interests include multifunctional structures, airborne platform sensor integration, remote sensing, and Unmanned Aerial Systems (UAS). I am both an Amelia Earhart Fellow and a NASA Earth and Space Science Fellow. As a PhD student, I had the opportunity to travel to Antarctica and play a role at the Center for Remote Sensing of Ice Sheets (CReSIS) in developing NASA's DC-8 and P-3 polar flying laboratories. Now back at the University of Kansas, I am continuing my collaboration with CReSIS in developing the next generation of polar remote sensing platforms and sensors.

DoD STARBASE is an important program as it exposes kids to careers they may not have otherwise experienced. I'm very lucky to have been a part of it, and I'm very happy to see it still going strong today.



Dr. Emily Arnold

AN ISSUE OF NATIONAL IMPORTANCE AND NATIONAL SECURITY

Supporting DoD Through Outreach

The U.S military, American defense and homeland security industries face serious challenges in filling some of the best and most critical technical jobs in our country. We are not producing enough graduates trained in science, technology, engineering and mathematics (STEM) who qualify for security clearances. The problem presents a serious risk for our national security over the next decade as Baby Boomers retire without an employable talent pool or pipeline to replace them or sustain a strong all volunteer military.

DoD STARBASE is a premiere educational outreach program sponsored by the Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs. At DoD STARBASE, students participate in challenging “hands-on, minds-on” activities in STEM. DoD STARBASE excites students about science and math, introduces them to the technological foundations of national security systems, and demonstrates the military’s ability to work with approximately 2000 schools in over 400 school districts across the nation to assist in addressing this important national issue. Students and their respective teachers interact with military personnel as well as industrial professionals, exploring careers and observing STEM applications in the “real world.” The program provides

students with 25 hours of stimulating experiences at National Guard, Marine, Air Force Reserve, Army and Air Force bases across the nation. DoD STARBASE exposes our nation’s youth to the technological environments and positive civilian and military role models found on military bases and installations, nurturing a winning network of collaborators and building strong community relations.

In keeping with the Department of Defense STEM FY2016 - FY2020 Strategic Plan, the DoD STARBASE program directly supports the plan’s vision, mission and goals. It serves as a foundational educational outreach awareness and workforce development program that highlights STEM awareness as a core component. It is one of the department’s primary tools as it continues to contribute to the ongoing, renewed national effort intended to close the serious achievement gap with competing nations and perpetuate our long-term security and prosperity.

In addition to the dedicated staff at each DoD STARBASE Academy, the program receives outstanding support from surrounding communities. This support consists of educational and STEM professionals from industry,



“During a time when youth might otherwise be ‘coasting along’ without direction, they were interested and challenged through a non-traditional environment of positive learning.”

— CURT GRAVES, PARENT OF STUDENT AT SACAJAWEA ELEMENTARY SCHOOL
ATTENDING STARBASE GREAT FALLS



institutions of higher learning, DoD civilians and military members who volunteer to help inspire students to explore and learn more about science, technology, engineering and math.

Many of the students attending a DoD STARBASE program have not been exposed to the various opportunities STEM fields and military services have to offer. Since its inception in 1993, DoD STARBASE continues to provide a proven curriculum and outstanding STEM experiences for students

and teachers. It is an outstanding outreach program that strengthens the relationships between the military, the community (including industrial partners) and the school districts, as well as raising the interest of students traditionally underrepresented in STEM education programs and pursuing STEM careers. DoD STARBASE has the potential to influence, thereby increasing the quantity and quality of future STEM professionals interested in supporting the Department of Defense and our national security strategy.



A Letter from General John E. Hyten, Commander of U.S. Strategic Command (USSTRATCOM)

As a youth, I was fortunate enough to grow up in Huntsville, Alabama where my dad worked on the Saturn V. In 5th grade, because I was good in math and science, I got to meet Wernher Von Braun. These and other opportunities provided career focus and shaped me into the person I am today.

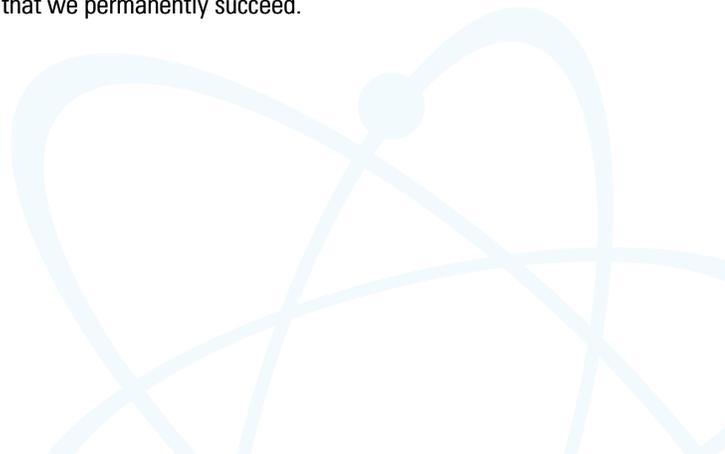
The DoD STARBASE Academy, an outstanding program that provides elementary students the opportunity to learn about science, technology, engineering and math (STEM) using a curriculum specially designed to immerse them in hands-on experiences and teaching, could have the same effect on our young students. Carl Sagan, a famous astronomer, said it best, "I am often amazed at how much more capability and enthusiasm for science there is among elementary school youngsters than among college students."

Developing a desire to learn about space, science and math at early ages will broaden understanding for future generations. Whether uncovering math mysteries, examining hair and DNA, Newton's Laws of Motion, building models of molecules, covering chemistry, Bernoulli's Principle, or conducting a geocaching activity, DoD STARBASE Academy students learn the value of design thinking and team building. The program also builds confidence with technology through problem solving. I experienced firsthand the benefits DoD STARBASE Academy has on students during my March 2016 visit to the academy where we discussed space launch, thrust and lift with the students. Seeing the quality of instruction and the eagerness of the students to learn gave me confidence they will succeed as they move forward in their education.

The Department of Defense and U.S. Strategic Command are continually looking for young, eager STEM professionals to lead our workforce into the next generation and offer a variety of STEM scholarships, internships, and other programs such as DoD STARBASE to advance education to the future leaders of our Nation. By investing in today's youth, we create a better tomorrow.

At U.S. Strategic Command, peace is our profession. To keep peace, we must be ready for global conflict that extends into any domain. We do that by building on the tremendous legacy of those who have come before us and by investing in the future. We have a responsibility to our youth to inspire and cultivate innovative and strategic thinkers. DoD STARBASE is an opportunity that will continue to challenge students to reach new heights. We will all reap the benefits of this program because, as American businessman Harvey S. Firestone said, "It is only as we develop others that we permanently succeed."

John E. Hyten, General, USAF
Commander, U.S. Strategic Command



"It is such a pleasure to see fourth and fifth grade children tour our facilities and see them learn about our F-16s and talk to our pilots. The questions they ask are so clever and engaging, and it's exciting to see the next generation taking on the STEM classes with such enthusiasm. DoD STARBASE is such a wonderful program with talented teachers, and I'm just grateful to have a small part in it as a member of the 149th Fighter Wing's Public Affairs team."

— MINDY BLOEM, STAFF SERGEANT, STARBASE KELLY





“At DoD STARBASE I learned that I am a natural engineer, creator, designer and scientist. DoD STARBASE helped me learn a lot about myself and DoD STARBASE found the STEM in me!”

– WHISPER SHADOW, STUDENT AT ECHO PARK ELEMENTARY ATTENDING STARBASE MINNESOTA

A Letter from Major General Robbie L. Asher, The Adjutant General of Oklahoma

Our Oklahoma National Guard relies on science, technology, engineering and mathematics (STEM) for careers both on the ground and in the air. Success is achieved through the technical expertise and proficiency of our Soldiers and Airmen. This path begins by engaging and inspiring our youth in STEM education.

As The Adjutant General for Oklahoma, I have had the tremendous opportunity to experience first-hand a Department of Defense (DoD) educational program for 5th-8th graders in our state called DoD STARBASE Oklahoma. Since 1993, Oklahoma's DoD STARBASE program has provided unique opportunities to explore through STEM, an exciting, challenging and critical-thinking set of activities. DoD STARBASE strengthens our students' knowledge, builds their confidence and stimulates excitement by focusing on STEM using a hands-on approach.

I am pleased to share this important partnership between DoD STARBASE Oklahoma, the Oklahoma National Guard, and the school and business communities. We currently have seven DoD STARBASE classrooms throughout the state providing hands-on, minds-on classes for fifth grade students. In addition, nine DoD STARBASE 2.0 after-school programs are provided at designated schools for 6th-8th grade students. Three of those programs are under the Native American Initiative directly supporting our Native American communities. Creativity, curiosity and imagination in a highly technical environment are encouraged in all programs. Career Days hosted on military facilities bring a unique perspective for the students on the value of STEM skills in a military environment.

The Oklahoma National Guard and I are extremely proud of the quality of instruction, the devotion and dedication of the instructional staff, and the constant connection of classroom activities to STEM-related careers. Each of us should remain involved in developing critical thinkers who will succeed in our ever-changing world. I fully support the continuation of the DoD STARBASE Oklahoma program and the exceptional educational opportunities it brings to the students of our great state!



Robbie L. Asher
Major General, OKARNG
The Adjutant General



"The DoD STARBASE program is something that is needed in today's world. We need more students who not only understand the STEM world but can actually function comfortably in the STEM world."

— CAPT. CASEY MONTGOMERY, STARBASE TOPEKA



DoD STARBASE COLLABORATIONS, CREATING COMMUNITY PARTNERS

Port of Portland Supports DoD STARBASE Experience for Portland Students

Thanks to support from the Port of Portland's Aviation Noise Department, students from schools near flight paths for Portland International Airport have been provided transportation that allows them to participate in the DoD STARBASE program in Portland, Oregon.

DoD STARBASE Director Denise Kortez said that this funding, in many cases, has been the deciding factor for classes who would otherwise not be able to afford coming to the DoD STARBASE program at all. "STARBASE Portland is surrounded by at-risk school districts. We do not have the capacity to serve them all, so the priority has been to invite the schools with the highest overall need," said Kortez. "Those invited were thrilled to attend DoD STARBASE, aware of the positive impact it can afford their students on so many levels, but they just couldn't raise the funds for bus transportation. We were at a loss as to how to help them get here."

A happenstance meeting between the Port's Noise Program Manager and the Portland DoD STARBASE Director in 2014

introduced the Port to the DoD STARBASE program. A subsequent visit to see the program in action and to observe first hand, the impact it had on area students led the Port's manager, Phil Stenstrom, to make a proposal to the Port, with the support of the PDX Citizen Noise Advisory Committee to sponsor transportation to DoD STARBASE for at-risk schools close-in to PDX.

Stenstrom has championed this transportation aid for the past three school years providing buses for 13 classes in School Year 2014-15, 15 classes in School Year 2015-16 and 17 classes in School Year 2016-17, impacting over 1,200 students who had no hope of attending DoD STARBASE because their schools could not afford transportation to send them. The financial contribution from the Port of Portland has been approximately \$6,000 each school year. The Port pays the funds directly to the transportation departments for each school district. Many of these students reside in a demographic area where a \$5 per student a week contribution to cover bus transportation would mean not having milk in their refrigerator.

More than 1,200 Portland, Oregon students like these from Vernon Elementary School, were able to attend DoD STARBASE thanks to transportation provided by the Port of Portland Aviation Noise Department.





Students from Vernon Elementary School proudly show their DoD STARBASE diplomas in a “Thank You” photo created for the Port of Portland Aviation Noise Department who sponsored bus transportation so they could participate in the Portland, Oregon DoD STARBASE program.

A first year teacher from Scott Elementary school said, “My fifth-grade students were extremely disappointed that they were not able to attend DoD STARBASE because my school could not afford the bus transportation to get us there and back. When we were invited this year, I worked with our school transportation to make sure that we could fund the bus. Even with keeping the cost down, the parents were struggling with the funds. Then I received the AWESOME news that the Port of Portland had stepped forward and was willing to absorb this cost for our school. This was a huge gift to our school, community and students. This opportunity will go on to enrich the lives of our students and their families for years to come. Opening the students’ eyes to possibilities that they never dreamed were possible will have a lasting effect on them and their families. Once again, I would like

to thank the Port of Portland for making this experience possible for all the 5th graders at Scott K-8. This experience has given them the opportunity to be on the same footing as students from more affluent families and have a base to attach future learning.”

Partnerships like these illustrate the value our communities and their leaders see in the DoD STARBASE program. A visit to the DoD STARBASE classroom quickly showed the impact this program had on area at-risk students. A little creative thinking resulted in a way that the Port of Portland could provide support while carrying out their own mission. A principal of another participating school said, “YAHOO! This is an amazing support in getting our kids to DoD STARBASE! Thanks Port of Portland!”

DoD STARBASE COLLABORATIONS, CREATING COMMUNITY PARTNERS (CONT.)



A Letter from Phil Stenstrom, Aviation Noise Program Manager, Port of Portland, Oregon

The Port of Portland owns and operates three airports in Oregon, the largest of which is Portland International Airport, or PDX. As part of our commitment to community livability, PDX has supported a proactive approach to aviation noise management for more than 30 years and has been recognized nationally and globally for our leadership in this field.

Every year, we participate in multiple neighborhood and industry outreach events in the surrounding communities of Oregon and Southwest Washington, helping citizens better understand aviation noise within the context of the airport, flight operations, local noise abatement procedures and the role of the national airspace system.

The Port also convenes a Citizen's Noise Advisory Committee of volunteers who work on aviation noise issues related to PDX. CNAC members are appointed by city and county jurisdictions from across the Greater Portland and Vancouver region, and they bring diverse perspectives, geographies and life experiences that inform our noise program priorities and activities.

Because PDX is home to the Oregon Air National Guard's 142nd Fighter Wing, we also work closely with their leadership and operations teams on noise issues. With support over the years from inspiring and visionary leaders such as Col. Jeff Hwang, Col. Mike Bieniewicz, and Col. Paul Fitzgerald, we have developed a strong partnership that results in a more effective noise program for PDX neighbors and deeper community networks for OANG.

These factors came together fortuitously in 2014 during a guided base tour for CNAC. While waiting for a CNAC member, I learned about the DoD STARBASE STEM program from Maj. Melinda Lepore, our tour host and acting DoD STARBASE Director. I learned about the amazing program outcomes and school participation that many readers are well aware of, but I also heard about the funding challenges that prevent some schools from attending, sometimes only due to the bus transportation cost.

The nexus was clear—if the Noise Program could support the school bus costs for DoD STARBASE classes from schools close to PDX flight paths, it would enhance our outreach program, complement our community livability goals, support our OANG partners, and most importantly, allow access to great STEM education that these kids might not otherwise get.

With the support of Port leadership and the encouragement of CNAC, we started receiving and paying bus invoices shortly after our initial meeting. I'm pleased to report that we started out funding 30 bus trips and added two new schools this year, putting us on target for about 50 trips annually. I'm tremendously appreciative for the help of STARBASE Oregon Director Denise Kortess, and I'm proud of our role in connecting the children of our community to science and technology education.

A handwritten signature in black ink, appearing to read "Phil Stenstrom".

Phil Stenstrom, Noise Program Manager



DoD STARBASE COLLABORATIONS, CREATING COMMUNITY PARTNERS (CONT.)

Military Collaborations Facilitate a State-Wide DoD STARBASE Initiative in Oklahoma

In 1993, nobody in the State of Oklahoma had ever heard of the DoD STARBASE program. Today, STARBASE Oklahoma includes seven 5th grade DoD STARBASE Academies on military installations across the state, and nine after-school DoD STARBASE 2.0 clubs, making it one of the largest DoD STARBASE programs in the country. Much of this can be attributed to the many military affiliated collaborators over the years that have helped grow the program into a motivational science, technology, engineering and mathematics network for students across Oklahoma.

It all started in Tulsa, in 1993. DoD STARBASE was new and the Oklahoma National Guard wanted to be part of it. In September of that year, the Governor, the Adjutant General of the Oklahoma National Guard and the National Guard Bureau officially provided funds to open a DoD STARBASE in Tulsa. The 138th Fighter

Wing at Tulsa Air National Guard (TANG) Base and Oklahoma Military Department converted a base facility into a classroom and volunteers donated supplies, time and talent. Guard members with teaching backgrounds were employed to take the lead roles and were soon joined by Civil Air Patrol volunteers. Those 20 students in the first DoD STARBASE class had been supported by more than 100 volunteers from almost every section on base including munitions, maintenance, operations and logistics. This was the first of many military collaborations that have allowed STARBASE Oklahoma to continue to grow and prosper over almost a quarter of a century. Today the TANG supports STARBASE Oklahoma with home offices for their state headquarters, two dedicated classrooms, summer camp programming and three after-school programs. TANG Career Days for the Oklahoma DoD STARBASE students provide learning stations

Temperature change that occurs during chemical reactions are measured and documented by students at STARBASE Oklahoma.



DoD STARBASE COLLABORATIONS, CREATING COMMUNITY PARTNERS, (CONT.)

where military volunteers share information about their careers and the background education requirements.

Collaborations continued and spread the DoD STARBASE program into Central Oklahoma. In May 1998, Oklahoma's Adjutant General, announced plans to establish a second DoD STARBASE site. The new program was to be operated by the 137th Airlift Wing at the Will Rogers Air National Guard (WRANG) Base in Oklahoma City. Once the program was funded, the WRANG DoD STARBASE program opened for students in January 2001. To meet increasing demand for DoD STARBASE in Central Oklahoma, an additional DoD STARBASE classroom was opened in 2011 at nearby Tinker Air Force Base (AFB) with support from the Defense Logistics Agency, 72nd Air Base Wing and 72nd Force Support Squadron. The classroom was located at the Tinker AFB Youth Center. Staff from the DoD STARBASE program at Will Rogers rotated in as instructors.

When the WRANG received a new mission, a partnership was formed with Tinker AFB to meld the two programs into one STARBASE Oklahoma program and house them both at the Tinker AFB Youth Center. The unprecedented arrangement made maximum use of the new Youth Center facility, which would otherwise be empty during the day. Under the partnership, the classrooms would serve STARBASE Oklahoma students during the school day and serve Youth Center students before and after school hours. This collaboration produced not only two DoD STARBASE classrooms, but also three after-school DoD STARBASE 2.0 programs, a DoD STARBASE summer camp and a weekly "Got Science" program provided by DoD STARBASE instructors for the Tinker Youth Center students. Oklahoma City Career Days are provided for the DoD STARBASE students at Tinker following the model

established in Tulsa. An additional collaboration with the Tinker AFB STEM Education Outreach office has provided engineering mentors for the after-school programs.

In 2003, STARBASE Oklahoma received federal funding to establish a Native American Initiative (NAI) in the state. A classroom was opened at Camp Gruber near Braggs in October of that year. Six weeks later, classes were started at Pryor's Whitaker Education and Training Campus operated by the Oklahoma National Guard. The third NAI DoD STARBASE site was opened at the Anadarko Armory in western Oklahoma six weeks later. Within weeks of announcing the NAI program, all three classrooms filled their allotted class schedules for the remainder of the year. Today, STARBASE Oklahoma has three NAI collaborations active in Tulsa, Woodall and Ft. Sill and they have had a significant impact on students. This recently included the opportunity for Woodall DoD STARBASE 2.0 students to participate in the 2016 White House Science Fair.

The STARBASE Oklahoma program expanded westward in 2006 when they joined with Oklahoma's Spaceport to open



Students work together to design a restraint system to protect their pilot "Eggbert" at STARBASE Oklahoma-Burns Flat.



At one of the DoD STARBASE Oklahoma STEM Career Days, students get up close and personal with a F-16 engine and learn how it is maintained by military specialists.

a classroom in Burns Flat through a collaboration with the Oklahoma Space Industry Development Authority (OSIDA). The two groups were connected when a former 138th FW commander and OSIDA board member realized the similarities in their education missions and contacted DoD STARBASE Oklahoma in an effort to bring the program to the unserved western Oklahoma location. The collaboration has since expanded to include the Western Technology Center (WTC) as a partner for after-school programs. The WTC hosts a “STEM Stars Night” every year that honors the outstanding DoD STARBASE Oklahoma students who have attended class in Burns Flat. Career Day exposure is provided for Burns Flat DoD STARBASE students through still another collaboration with nearby Altus AFB.

In 2008, the westward expansion of the DoD STARBASE Oklahoma program continued with a collaboration at Ft. Sill in Southwest Oklahoma. The expansion came as a result of the Tulsa 138th Fighter Wing’s affiliation with Ft. Sill and Fires Center for Excellence. Military leaders at Ft. Sill built upon the experiences of the TANG unit to open their own DoD STARBASE program which was announced at a special

dinner on the same day that Ft. Sill signed a Community Partnership with the City of Lawton. Word spread quickly and within a week, every class opening for the new DoD STARBASE site was filled. Again, a creative use of space partnered DoD STARBASE with the Ft. Sill Family and Morale, Welfare and Recreation (MWR) unit which offered classroom space at the Ft. Sill Youth Center. Today, Ft. Sill hosts two DoD STARBASE classrooms at their School Age Center, as well as summer programming and two after-school programs. Career Days include stops at the Ft. Sill Fire Department, Rocket Club, Reynolds Hospital, Artillery Museum, Air Defense Museum and Air Field.

With this statewide network of dedicated military collaborators, the Oklahoma DoD STARBASE program now provides almost 4,400 5th through 12th grade students with motivational STEM curriculum and career pathways each year. The dedication of the Oklahoma military members and units has strengthened to allow what was once a one-site DoD STARBASE program to evolve into a cornerstone of collaboration that now serves students in all regions of Oklahoma.

“My experience with the DoD STARBASE program has been an outstanding one. I enjoy seeing children who may or may not have an interest in STEM fields working together for a common goal. The team work skills and knowledge they gain during the program are absolutely priceless. DoD STARBASE has given me confidence that our country is in great hands with these future generations.”

— CHRISTOPHER L. DAVIS, SRA USAF ACC 552 TRS/RA

Oklahoma DoD STARBASE 2.0 Students Take Robot All The Way To The White House

Four students from Woodall Public Schools in Tahlequah, Oklahoma got the experience of a lifetime in April 2016 when they were invited to participate in the 2016 White House Science Fair in Washington, DC. The DoD STARBASE Woodall Cybercats Robotics Team, comprised of eighth-grader Benjamin Woolen, seventh-graders Ty Brant and Anthony Maldonado, sixth-grader Taylor Wingo, and their mentor, Dr. Geary Crofford, joined more than 100 other students who showcased their skills at the White House. They were recognized by President Obama for their hard work, knowledge, team building skills, as well as their passion for solving real-world problems using science, technology, engineering and math (STEM) which has greatly honored their school and the Cherokee Nation.

Dr. Crofford, a science teacher at Woodall Public Schools and a DoD STARBASE 2.0 STEM mentor has inspired leadership, excitement, curiosity and innovation in his students as well as his colleagues. His optimism and hard work continue to encourage all of us to work together for a brighter future.

“Operation Commander”
Ty Brant documented
the DoD STARBASE
team’s experience in this
traditional mission report.

Mission: OPERATION WHITE HOUSE SCIENCE FAIR

Mission Number: 2016041014

Mission Location: Washington, DC

Mission Commander: Dr. G. Crofford, Woodall Public Schools, Tahlequah, OK

Operation Commander: Ty Brant

Mission TEAM: Anthony Maldonado, Taylor Wingo, Benjamin Woolen,
Ms. Crofford Brant

Mission Details: In the DoD STARBASE Cybercats afterschool STEM program, our team from Woodall, OK worked on robots and solved real world problems with and without robots. In April 2016, the Cybercats Robotics team received an invitation to the White House Science Fair in Washington, DC to show President Obama our VEX and LEGO robots and discuss our various research projects. The team visited the Pentagon and spent two days at the White House setting up the exhibit, meeting the President and hearing him speak. We were interviewed by international television stations and even met Bill Nye, “the Science Guy” along with Dan Savage, from “Mythbusters”.

After Action Report (AAR):

The Woodall Robotics team learned the importance of teamwork and how to work together to solve real world problems. We continue to go to DoD STARBASE 2.0 to learn more about robots, teamwork, and the necessary skills to be successful in STEM-based careers. The team will also mentor the younger robotics team members to prepare for our leadership roles when we graduate from Woodall.

MISSION COMPLETE

**Signing off --the DoD STARBASE Woodall Cybercats
Written by Operation Commander, Ty Brant**

DoD STARBASE 2.0 students from Woodall, Oklahoma present their STEM robotics project at the 2016 White House Science Fair in Washington D.C.



"I didn't care about science before DoD STARBASE. I really liked using the computers and robots. I didn't know about chemistry before I came, but I really liked the experiments we did in chemistry. Now I want to learn more about chemistry because I like the reactions, mixing stuff together and watching it change. I am curious about why things change."

— ASHLYN CHANCE, STUDENT AT HILL FIELD ELEMENTARY ATTENDING STARBASE HILL SCREAMING EAGLES



STARBASE Wisconsin and Milwaukee Public Schools receive the Partnership Award at the 2016 STEMMY Awards in Milwaukee, Wisconsin in October 2016. They were recognized for their academic outreach providing a hands-on program in the area of Science, Technology, Engineering and Math (STEM). Pictured are BG Ebben, John Puttre, Lisa Martin, Kim Haas (Director - Charter Communications Central Region), JP Cadorn (Reporter - Time Warner Sports Channel and Awards Emcee).

STARBASE Wisconsin Receives 2016 STEMMY Award

STARBASE Wisconsin was one of the big winners at the 2016 STEMMY Awards ceremony held during the 13th annual sySTEMnow conference, sponsored by STEM Forward of Milwaukee. STEM Forward is Southeastern Wisconsin's leading technical organization providing and/or promoting educational outreach programs emphasizing Science, Technology, Engineering and Math (STEM). More than 200 business, K-12, higher education and government representatives attended the one day conference.

STARBASE Wisconsin took home the "Partnership in STEM Programming" award also known as a "STEMMY," for their partnership with Milwaukee Public Schools (MPS). The "Partnership Award" recognizes the business, governmental agency, association, foundation or other organization whose educational outreach efforts, in partnership with individual students and local schools demonstrate a unique approach and unparalleled commitment to promoting STEM awareness and improving the STEM competency of K-12 students. While at DoD STARBASE, fifth grade Milwaukee students from public, choice and charter schools spend 25 hours exploring the world of the sciences through hands-on activities and experiments. They also learn about computer-aided design and robotics and have the unique opportunity to interact with military and civilian professionals with careers in STEM fields.

Accepting the award was retired Wisconsin Air National Guard Colonel John Puttre, who is the Director of STARBASE Wisconsin, and MPS Lead Science Teacher, Lisa Martin. Both have been involved in the DoD STARBASE partnership since the Milwaukee program opened its doors in 2012. Puttre provided program oversight as part of his former role with the Wisconsin Air National Guard before taking over as Director in 2015. Martin functioned as a liaison between the MPS teachers and DoD STARBASE to get the program off the ground by recruiting and scheduling classrooms to attend the five-day program.

"The outstanding partnership between the STARBASE Wisconsin staff and the MPS science coordinator provides students with an exceptional hands-on STEM experience," said Puttre. "Together we can make a significant difference in the lives of our Milwaukee area students by introducing them to STEM and the knowledge Wisconsin businesses support our initiatives in STEM."

As a Wisconsin Air National Guard-sponsored program, Puttre is a natural fit as the STARBASE Wisconsin Director. Having recently retired after a 33-year career in the Wisconsin Air National Guard, Puttre has an unmatched passion for instructing kids in the STEM fields.

“The most rewarding part is watching students smile and actively engage in the hands-on lessons as they realize with their newly gained knowledge they are exploring STEM and immediately applying it to an experiment or in class project,” Puttre said regarding his work with the kids. “In just 25 hours, we have the opportunity to change the lives of our students forever and we take that opportunity seriously.”

Martin, who initially had to actively recruit MPS participants found that, after five years, recruiting classrooms to attend STARBASE Milwaukee is no longer an issue and the waiting list is growing every day. “I have a waiting list of 50 classes from 30 schools wanting to get a spot in DoD STARBASE, and it just keeps growing,” said Martin. She attributes the success of the partnership between MPS and STARBASE Wisconsin to the participating MPS teachers and a quality educational opportunity. She says news of the program and its benefits to MPS students has spread by word-of-mouth and that teachers trust their fellow teachers.

Brigadier General Gary Ebben, Wisconsin’s Deputy Adjutant General for Air, spoke highly of the programs receipt of the Partnership Award. “It is great to see recognition of the tremendous partnership that has developed between the Milwaukee Public School system and our DoD STARBASE program,” Ebben said. “This partnership enables the DoD STARBASE program to provide an important STEM learning opportunity for thousands of students in the Milwaukee

area. We are also very proud of our outstanding DoD STARBASE instructors who make it all happen.”

Wisconsin’s Adjutant General, Major General Donald Dunbar, was very proud to hear of STARBASE Wisconsin’s accomplishment. He was key player in getting the funding to set up for the STARBASE Wisconsin academy at the Army Reserve Training Center in Milwaukee. “I couldn’t be more impressed with the STARBASE Wisconsin program,” Dunbar said. “It reflects the great leadership we have in the Wisconsin Air National Guard and ensures we will have intelligent young men and women to lead us in the future.”

Also in attendance at the STEMMY Awards, was Shawanda Blackmon, one of the first STARBASE Wisconsin graduates, now a 10th-grader at Milwaukee’s Riverside High School. Blackmon, who is interested in pursuing the path to become a pediatric nurse, attributes her time at DoD STARBASE with sparking an interest in science. “It made science fun to learn,” she said. “I didn’t really have an interest in science before attending DoD STARBASE.”

STARBASE Wisconsin is currently reaching out to the Native American community schools and the home-school community and has already scheduled classes with a Menominee tribal school. Puttre is hopeful they will be able to hire two additional instructors this year, enabling them to double their capacity.

“I cannot express enough the impact that DoD STARBASE has had on our schools. DoD STARBASE has given our students, many who come from high-poverty, minority households, the chance to participate in high-quality STEM education experiences that they will not soon forget. We are hopeful that by exposing them to STEM experiences and careers at this pivotal age in educational development, it will allow them to broaden their minds towards a possible future in STEM, as well as provide a solid foundation for future STEM learning.”

— LISA MARTIN, MILWAUKEE PUBLIC SCHOOLS, SCIENCE TEACHER LEADER



“DoD STARBASE does something that few other educational programs in the country can do—it takes kids from every walk of life, every part of the city, and it gets them excited to learn. It’s absolutely breathtaking to see 5th grade kids who five weeks earlier thought STEM subjects were boring or worse yet, beyond their understanding, transformed into young scientists, raising their hands as fast as they can during the graduation ceremony to talk about robotics, nanotechnology, molecular structure, 3D printing and more—all with the background of how much fun they had at DoD STARBASE.”

– BRIGADIER GEN HAUSER, COMMANDER OF THE INDIANA AIR NATIONAL GUARD



A Letter from Major General Courtney P. Carr, The Adjutant General of Indiana

As leaders, we are charged to inspire others to achieve greatness while also finding effective solutions to the challenges of today and tomorrow. The partnership between DoD STARBASE and the Indiana National Guard is one of the most exciting, effective solutions that not only lessens today's STEM gap, but sparks desire in the next generation of kids to become great thinkers and life-long learners.

I've seen first-hand the dynamic learning environment created by DoD STARBASE at all three Indiana locations, including through my own son Evan going through the program in 2015. But the true value in DoD STARBASE is the transformation that takes place within each child. To watch during Week 1 when disinterested, and often disheartened kids, afraid of math, or insecure in their own capability walk in the door; to the difference in Week 5, when they leave confident not only in their new knowledge, but the self-assurance that no academic concept or challenge is too great for them to master. Put simply, DoD STARBASE inspires children of all educational backgrounds to be excited about Science, Technology, Engineering and Math.

Thus far, more than 7,000 Kids have graduated from the DoD STARBASE program in Indiana, including four after-school programs initiated to reach even more kids. And due to overwhelming success, two of the three locations have opened second classrooms, with the entire program completely full for the academic year.

It is with this first-hand experience and the knowledge that Indiana is just one piece of this nation-wide solution, that I offer my complete endorsement and support of DoD STARBASE. I encourage every effort be made to not only continue, but expand this amazing program.

Sincerely,



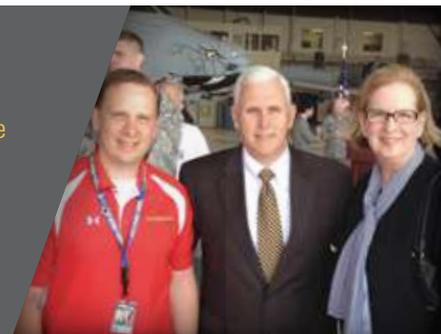
Courtney P. Carr

Major General, The Adjutant General of Indiana



"I visited our DoD STARBASE in Fort Wayne, Indiana, and I am extremely excited that this facility will now be available to young people for generations here at the South Bend Army."

— MIKE PENCE, GOVERNOR OF THE STATE OF INDIANA





Celebrating 100 years of Excellence in Indianapolis 1915-2015

The Rolls-Royce Heritage Trust, Allison Branch, Inc. [An Indiana Not-for-Profit and IRS 501 c3 Educational Museum] has been proud to work with the STARBASE Indiana - Indianapolis team, both staff and students, as we jointly ran Science Technology Engineering Math tours and classes in the **James A. Allison** Exhibition center this year. Our two organizations have similar goals when it comes to exciting the youth of Indiana with potential STEM type careers and hence the collaboration of our teams was a natural.

I would most highly like to commend the STARBASE Indiana - Indianapolis team for their tireless efforts to work with our companies training team and Exhibition staff so that the students are quickly processed in through security and are good representatives of their school while inside our classroom and business facilities.

This year is our 100th year in Indianapolis and so helping these young future engineers and scientists understand a bit of history as we celebrate our centenary is an important positive for our Museum and our company.

Sincerely,

D. B. Newill
 President
 Rolls-Royce Heritage Trust, Allison Branch, Inc.
 Street – 450 South Meridian St.
 Mail – P.O. Box 420 0-17
 Indianapolis, IN 46241
 USA (317) 230-6516 Office
HeritageIndy@rolls-royce.com

A Letter from Major General John F. Nichols, The Adjutant General of Texas

We are proud of the strong partnership between the National Guard and the DoD STARBASE program here in Texas and the impact it has had on our Texas community. Since its inception in 1994, the Texas program has served more than 25,000 students, many of whom come to us from underserved communities and families, providing 25 hours of rigorous cross-curricular science, technology, engineering and math based instruction to each. Students who attend the Texas STARBASE programs, located in Houston and in Austin, average an almost 25 percent increase between their pre-test on the first day and the post-test on the fifth and final day of instruction.

Our Texas Soldiers and Airmen enjoy visiting with students during their DoD STARBASE experience. In every class we host, Texas Guardsmen work with DoD STARBASE instructors to help mentor the next generation of Texans and teach them about military service and the importance of their work in the community. This direct investment in supporting the next generation of strong, ethical leaders, allows our Service Members to practice training, mentoring and guiding our greatest future asset. DoD STARBASE serves hundreds of students every month with engaging hands-on, minds-on instruction that energizes and ignites a passion in each student who visits. The added value of our DoD STARBASE program is almost immeasurable, both in terms of the relationships participating students build with our Guardsmen and the partnerships with the school districts and the communities we serve.

The teachers who visit DoD STARBASE report that their students all leave the program as more confident learners, and all have a greater appreciation for the ways that our military supports their community, the state and the nation. Evidence-based evaluations of Texas STARBASE students show significant improvements in students' understanding, interest and ability in math, science and engineering which we know leads to an increased enthusiasm in pursuing further STEM education.

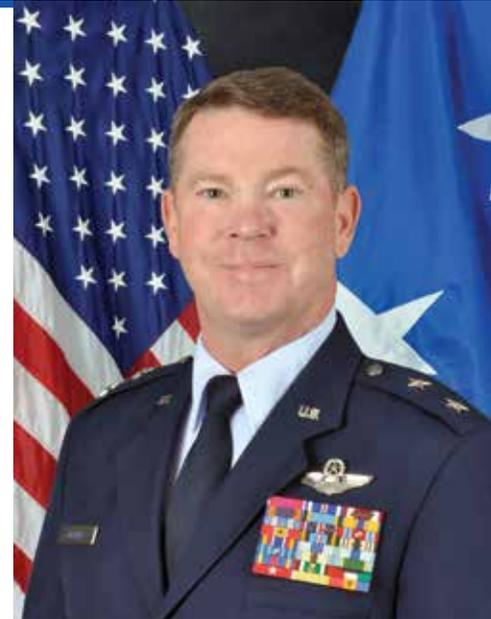
I could not have greater confidence or more pride in the outstanding job our Texas STARBASE programs do in serving the community and mentoring the future leaders of our great state and nation. DoD STARBASE truly exemplifies the outstanding success that can be uncovered with exceptional collaboration between the Texas National Guard, local communities and participating schools. The Texas National Guard will continue to support this great program, and we look forward to the future of our own Texas STARBASE programs and our partner programs across the country.

Sincerely,



John F. Nichols

Major General, The Adjutant General of Texas





A Letter from Colonel Stephanie Wilson, Commander, 72nd Air Base Wing

If you're not familiar with Tinker Air Force Base's relationship with DoD STARBASE, then I am excited to tell you about it. DoD STARBASE is an initiative to develop STEM knowledge, skills and interest in youth. DoD STARBASE uses hands-on learning and encourages not only memorization, but problem solving and teamwork. Not only does this program benefit youth in general, but this program has the potential (and goal) to equip our youth for futures in DoD STEM careers.

The pilot classroom at Tinker Air Force Base was established in the spring of 2011. This partnership has now blossomed into two classrooms, three after school programs, summer camp programming and a weekly "Got Science" program for the Tinker Youth Center students. Career Days for the students at Tinker include learning stations at the Youth Center where military volunteers share their careers with students and talk about the preparation required for those careers. The partnership with Tinker has also included ongoing enthusiastic support from the Air Force Association Gerrity Chapter, the FAA, and Rose State College.

It is my desire to keep this partnership between DoD STARBASE and Tinker Air Force Base strong and thriving. We need to raise future leaders for our defense, especially those trained in STEM fields. Further, we also need to care for our service members and communities; one way we do that is by reaching out to families and youth. I am confident that this collaboration is worthwhile, and I look forward to seeing its future and impact.

Stephanie P. Wilson, Colonel, USAF
Commander, 72nd Air Base Wing



A Letter from Colonel Samuel Curtis, Fort Sill Garrison Commander

As part of our ongoing commitment to Soldiers and Families, we have long enjoyed a partnership with DoD STARBASE Oklahoma. In fact, we opened our first classroom on Fort Sill in Fiscal Year 2009.

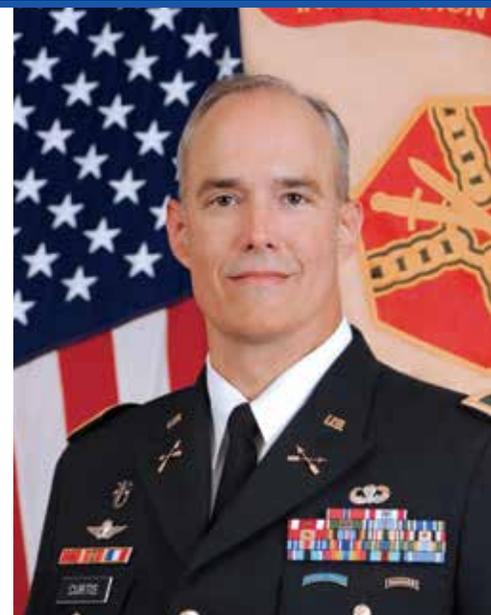
The intent to offer DoD STARBASE under our Family and Morale, Welfare and Recreation Program (F&MWR) through a Memorandum of Understanding (MOU) between our installation F&MWR Program, local schools, and DoD STARBASE Oklahoma has exceeded our expectation.

In the past, the program was offered through our Lawton Public Schools. However, with the new mandate to offer DoD STARBASE on military installations, Lawton Public Schools was no longer an option as a host site. Notwithstanding, school officials throughout the district were anxious to continue supporting DoD STARBASE and our children and was thrilled with the possibility of bringing the program to Fort Sill. Through this fantastic partnership, we have been able to enhance the learning experience for thousands of young minds. We often hear from educators and parents that DoD STARBASE is a favorite for students.

Installation point of contact is Brenda J. Spencer-Ragland, Director, Family and Morale, Welfare and Recreation, DSN 639-3001, or 580-442-3001.



Samuel W. Curtis
COL, SF
Commanding



"I enjoy talking to our future engineers at STARBASE ROBINS.
This is our future military workforce."

— JAMIE COOK, CHIEF WORKFORCE DEVELOPMENT, STARBASE ROBINS

"It has been my great privilege to assist the DoD STARBASE program here at the Portland Air Base. The DoD STARBASE program is an invaluable resource to the regional school systems. It provides priceless opportunities for children to gain critical exposure to science, math, engineering, and technology in a tangible way. For many of them, it is a singular opportunity in their early education, where they are able see practical applications in these subjects through direct contact with state of the art aircraft, robotics, computer aided drafting, and much more. Seeing the widened eyes and expressions of amazement on the faces of these youth, it is evident how these experiences open to them paths of future possibility and offer hope for the technologically driven future of our communities. It is a well planned and executed program that I wish could be expanded to more children. I am proud to play a small role in this endeavor and eagerly contribute in every way I can."

— TSGT. MATTHEW SMITH, 142ND FIGHTER WING, INSPECTION SHOP STRUCTURAL MAINTENANCE
STARBASE PORTLAND



Assessment



ASSESSMENT
2016



2016 ASSESSMENT

Executive Summary

The Department of Defense (DoD) sponsored STARBASE program provides science, technology, engineering and math (STEM) experiences to American youth at roughly five dozen military installations across the United States and Puerto Rico. Each year the design, conduct and effectiveness of the DoD STARBASE program is evaluated in several ways, including: structured interviews, questionnaires, program visits, and conversations with program participants. The program also is evaluated annually in terms of measuring basic STEM knowledge gained from program participation and improvements in student attitudes toward STEM subjects in the contexts of school, the military, and career opportunities. Assessments, interviews, and/or questionnaires were received from 1,445 students, 2,296 teachers, and all DoD STARBASE directors. A brief overview of the assessment highlights some of the key findings of the analysis.

Highlights

DoD STARBASE PROGRAM

- DoD STARBASE programs are located at a variety of military installations including: Air Force (8 locations), Air Force Reserve (4 locations), Army (1 location), National Guard (47 locations), and Marine Corps (1 location) sites.
- The DoD STARBASE program conducted 2,894 classes serving 1,217 schools in 403 school districts across the United States and Puerto Rico during FY 2016. Of the schools participating in the program, 75 percent were Title 1 eligible schools.
- The majority of the DoD STARBASE locations (88 percent) serve school districts within a 50-mile radius of their program site.
- More than 69,000 students attended the five-day program in FY 2016. The majority of DoD STARBASE students (88 percent) are 5th graders.
- Males outnumber female students 51 percent to 49 percent respectively.
- The average instructor to student ratio for FY 2016 was 1:15.
- The average class size for FY 2016 was 24 students.
- In FY 2016, the median operating cost per location was \$338,468.

DoD STARBASE STAFFING

- Contractor affiliations made up the majority (52 percent) of the DoD STARBASE employment relationships followed by state and federal affiliations which are at 47 percent and 1 percent, respectively.
- Of the 61 DoD STARBASE locations, 13 operate with the DoDI prescribed manning model of four staff members of director, a deputy director/instructor, an instructor, and an office manager/administrative assistant.
- The majority (80 percent) of the DoD STARBASE workforce are full-time employees. Part-time DoD STARBASE positions included: DoD STARBASE 2.0 coordinators, teaching assistants, tech assistants, substitute instructors and modified deputy director/office manager.

- DoD STARBASE instructors tend to be full-time (93 percent), seasonal (44 percent) employees.
- There was a 14 percent increase in the number of employees from FY 2015 resulting in 41 percent of all DoD STARBASE staff having 2-4 years of DoD STARBASE experience.
 - DoD STARBASE instructors (48 percent) have between 2-4 years of DoD STARBASE experience. Directors and deputy directors tend to have 2-7 years of DoD STARBASE experience at 55 percent and 53 percent respectively. Office managers (66 percent) have the least amount of DoD STARBASE experience at 1-4 years.
- There were 65 staff departures in FY 2016. The majority of departures (28) were at the instructor level.
 - Directors reported the most common reasons that staff members who left the DoD STARBASE program gave were because of personal reasons (20 percent), moving (17 percent) and a better opportunity at another academic institution (15 percent). Of the 65 departures, 13 remained unfilled at the end of FY 2016.

DoD STARBASE PROGRAM VOLUNTEERS AND OUTREACH

- DoD STARBASE locations documented participation of 9,321 volunteers who contributed a total of 99,643 hours, worth an estimated \$1,981,320.00.
- Many DoD STARBASE locations (63 percent) reported they have relationships with nearby teacher colleges or training programs where student teachers may obtain practicum hours at DoD STARBASE. At the DoD STARBASE locations that offer teacher training, 70 percent of the teachers may use this training towards their certification requirements.
- 67 percent of DoD STARBASE locations report that they have relationships with other outreach programs in their area to include: STEM Forward, FIRST Robotics, Project Lead the Way, Civil Air Patrol, Girl Scouts and Boy Scouts.
- In FY 2016, 24 DoD STARBASE locations in 15 states reported coordinating a total of 50 DoD STARBASE 2.0 programs and 63 - 2.0 clubs.
- The greatest numbers of 2.0 programs (32 programs and 38 clubs) were sponsored by the National Guard where the majority of the DoD STARBASE programs are also located.
- The average student retention rate within the 2.0 program was 24 percent. Of the students who did not complete the program, 37 percent were females and 63 percent were males. Directors reported several reasons why students discontinued the program. Relocations, time conflicts, and lack of interest in the chosen curriculum are cited as the main reasons why students drop from the program.
- Former DoD STARBASE students made up 45 percent of the DoD STARBASE 2.0 program participants.
- The 2.0 program participants included 33 percent females and 67 percent males.
- The students are mostly 6th and 7th graders (51 percent and 29 percent, respectively) although some are from other grades.
- Mentors from a variety of professions participated in the DoD STARBASE program and include: military, non-military, DoD professionals, industry professionals and college students. Ten programs reported that they did not use mentors.
- Most mentors are military (27 percent) or staff members (23 percent) for the school hosting the 2.0 program.
- The DoD STARBASE 2.0 programs operate through a combination of federal and private funds. Of the 24 DoD STARBASE locations coordinating a 2.0 program, 48 percent receive funding from both sources and 52 percent operate using only their federal DoD STARBASE funds.

EXECUTIVE SUMMARY (CONT.)

STUDENT ASSESSMENT

- 1,445 students were included in the study (2,890 matching assessments pre- to post-program), an increase of 15.2 percent over the previous year's matching assessments (2,508).
- Most respondents were in the 5th grade (93 percent) and between 10-11 years old (94 percent).
- Approximately equal proportions of the respondents were girls (49 percent) and boys (50 percent); 1 percent was unknown.
- Eighty-one percent of the attitudinal items improved from pre- to post-program, and 65 percent of the changes were statistically significant. Some of the largest shifts occurred in attitudes about STEM, the military, and future careers.
- Performance on knowledge items increased significantly (25 percent) from pre- to post-program.
- Physics showed the largest curriculum area improvement (average increase of 47 percent in correct answers).
- Chemistry also showed strong gains, with a 37 percent improvement.
- Math scores improved substantially, with a 22 percent gain.
- GENDER: Although boys' attitude scores were more positive than girls' on the pre-program assessment, the gap was reduced by 33 percent in the post-program assessment and was no longer statistically significant. Boys and girls did not significantly differ on 23 of the 35 post-program items measuring favorable attitudes toward STEM and the DoD STARBASE program, with boys more favorable on nine items and girls more favorable on three. Similarly, boys' knowledge scores were 6 percent higher than girls at the pre-program assessment, but the gap was cut in half, to just a 3 percent difference by the post-program.
- AGE: Older students tended to express more positive views about their teachers, and students in higher grades tended to express more favorable views about military bases and math. Yet older students also tended to express some skepticism about DoD STARBASE helping them in school and showed somewhat less awareness of STEM jobs. Students in higher grades also tended to express relatively lower interest in engineering and science and less desire to pursue those fields as a career. Because the age and grade relations are small, however, it would be unwise to draw strong conclusions. They may underscore the importance of early exposure to STEM concepts and careers.
- MILITARY ATTITUDES: Those entering the program with less favorable attitudes toward the military had lower program knowledge scores, lower knowledge gain scores, and less favorable overall attitudes for both the pre- and post-program than those entering the program with more favorable attitudes toward the military.
- KNOWLEDGE AND EXPERIENCE: Students with prior knowledge of, and experience with, DoD STARBASE responded more favorably to more attitudinal items than those with no prior knowledge or experience.
- PERFORMANCE: Students identified as high performers scored higher on the pre- and post-program Knowledge Assessment as well as on pre- and post-program attitude survey, compared to their lower performing counterparts. The largest gap on the Knowledge Assessment is where:
 - high performers improved by 6.5 points from pre- to post-program assessment, while
 - low performers improved by 1.8 points pre- to post-program.

TEACHER ASSESSMENT

- 2,296 teachers, from 61 academy locations responded to the survey. This represents an increase of 11 percent in the number of academies and a 37.6 percent increase in the number of teachers responding compared to last year.
- Teachers with more than one year of DoD STARBASE experience reported meaningful changes in students following DoD STARBASE participation. These changes included: better school attendance, better performance on standardized state assessments and improved cooperative learning in the classroom.
- 99 percent (2,273) of the teachers indicated they will recommend DoD STARBASE to other teachers, principals, or school educators.
- 88 percent (2,019) of the teachers reported that they are more aware of career opportunities (both uniformed and non-uniformed civilian) within the Department of Defense because of their participation in the DoD STARBASE program.
- After participating in the DoD STARBASE program, there was a 26 percent greater number of teachers who would recommend the DoD or the military as a career option to students.
- Teachers reporting higher levels of support (e.g., resources provided by DoD STARBASE) responded more favorably to the attitudinal items as compared to those indicating having less support.
- The majority of teachers (83 percent) did not major or minor in a STEM-related discipline but only 3 percent of these teachers reported less confidence in teaching STEM-related topics compared to teachers with a STEM-related major or minor.

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 Overview
- Program Oversight
- Fiscal Analysis
- Assessment Results
- Considerations
- Appendices



“The students are very engaged in all of the hands-on activities provided to them. They absolutely love working on the CAD programs. A lot of the content covered while we are at DoD STARBASE applies to content we will be or have covered in the classroom. It is good for the students to have these experiences so we can reference them when we are working on those skills in the classroom.”

– TERRI HEINKEL, EDUCATOR AT SHAW ELEMENTARY SCHOOL ATTENDING STARBASE WRIGHT-PATT

DoD STARBASE Program Overview

The Participants

DoD STARBASE programs operate under the auspices of the Department of Defense (DoD) through the office of the Assistant Secretary of Defense (OASD) for Manpower and Reserve Affairs (M&RA). A Congressional Appropriation to the DoD funds the operation of DoD STARBASE. Synergy between the local military base, schools, and surrounding communities enhance and strengthen the program.

During FY 2016, the DoD STARBASE program conducted 2,894 classes serving 1,217 schools, in 403 school districts, across the United States and Puerto Rico. More than 69,000 students attended the five-day program in FY 2016. All statistics have increased from FY 2015 with a 12 percent increase in the number of students served, a 9 percent increase in the number of schools, a 10 percent increase in classes, and a 10 percent increase in the number of districts participating in a DoD STARBASE program.

During the summer months many DoD STARBASE locations also offer a variety of supplemental programs to area youth in grades K-12. The number of locations offering supplemental programs decreased by 37 percent from FY 2015 with 19 DoD STARBASE locations offering some type of supplemental program. Supplemental programs provided in FY 2016 include: aerospace education, robotics instruction and engineering instruction. The number of students served by supplemental programs decreased from 3,863 in FY 2015 to 3,610 youths in FY 2016 (a 7 percent decline). More than 50 percent of the students participating in supplemental programs are in the 5th and 6th grade.

THE MILITARY

The military hosts and supports DoD STARBASE programs. Programs are located at various military installations¹ including: Air Force (8 locations), Air Force Reserve (4 locations), Army (1 location), National Guard (47 locations), and Marine Corps (1 location).

The majority of the DoD STARBASE locations (88 percent) serve school districts within a 50-mile radius of the programs' duty station.² Locations that extend beyond a 50-mile radius generally have made special accommodations to reach more students such as those in the Native American outreach programs in South Dakota or the sparsely populated area surrounding Kingsley Field in Oregon. The demand for DoD STARBASE is so great that students travel from all over the island of Puerto Rico to participate in the program located in San Juan. 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 (M&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 commander who may view this program as a venue for 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.

¹ Most of the STARBASE 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. Bayou State STARBASE in Rosedale, Louisiana is currently located at the original Iberville High School because there is not a military installation within 50 miles of a population of Title I students. STARBASE Oklahoma – Burns Flat, STARBASE NOVA Courage and STARBASE NOVA Honor are outreach units that serve Native Americans in Oklahoma and South Dakota. STARBASE Connecticut – Waterbury is currently located at Naugatuck Community College because space became limited at the Waterbury Armory.

² STARBASE Ft. Fisher, STARBASE Charlotte, STARBASE Kingsley, STARBASE New Mexico, STARBASE NOVA Honor, STARBASE Puerto Rico, and STARBASE NOVA Courage serve students beyond 50 miles of their host facility.

Military volunteers inspire students and community engagement in STEM education. They may serve as guest lecturers to explain the use of STEM in different careers and/or act as base tour guides highlighting the application of STEM concepts in their missions and giving students access to military facilities and operations. Military volunteers share unique, informative, and highly varied experiences with the students which provide an exciting, stimulating environment to enhance their STEM experience.

Students may discuss how chemical fires are extinguished, learn how the injured are transported, and explore the cockpit of an F-18 or the interior of a C-130. The only constant is the excitement the student experiences in the presence of a military volunteer. As volunteers, these hard-working, highly disciplined men and women command respect and honor in their presence and serve as a very powerful force to inspire students to set goals for their own lives. Participating classroom teachers are also inspired and encouraged by the involvement of military volunteers in the DoD STARBASE program.

THE SCHOOL DISTRICT

Students from local school districts surrounding the host military installation participate in the DoD STARBASE program. DoD STARBASE locations may schedule schools to attend the 25-hour program over five consecutive days or on a weekly basis over five consecutive weeks. About half (52 percent) of the DoD STARBASE locations use the weekly schedule and 39 percent of the locations use a consecutive day schedule.³ In FY 2016, 403 school districts participated in the DoD STARBASE program which is an increase of 10 percent over FY 2015. Participants include schools from Title 1 eligible, public, private, urban, and rural districts (see Table 1).

Table 1: DoD STARBASE 2016 Participating School Demographics⁴

School Type	Number of Schools	Percentage of Total Schools
Title 1 Eligible	907	75
Public	1,026	84
Private	132	11
Urban	919	76
Rural	292	24
Total Schools	1,217	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.

³ The remaining 9 percent use a combination of the weekly and consecutive day schedule.

⁴ Numbers shown are for five-day programs and do not include other programs. Some schools may be counted in more than one category. 105 schools were not classified as Public or Private.

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.

The Program Elements of DoD STARBASE

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/M&RA.

DoD STARBASE STUDENTS

Grade Level

The DoD STARBASE program is authorized to serve students in kindergarten through 12th grade. 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 5th grade level. Some locations (24) reported serving students in other grade levels in addition to the 5th grade,⁵ but most DoD STARBASE students are 5th graders (88 percent). Table 2 shows the number of students at each grade level. The total number of students served in FY 2016 was 69,400. This is a 12 percent increase over FY 2015.

Table 2: Grade Level of FY 2016 DoD STARBASE Students

Grade Level	Number of Students
Kindergarten through 3rd Grade	8
4th Grade	3,547
5th Grade	61,295
6th Grade	4,195
7th Grade and Above	355
Total Number of Students	69,400

⁵ The locations serving grades other than the 5th grade are: Bayou State STARBASE, Pelican State STARBASE, STARBASE Charlotte, STARBASE Connecticut - Windsor Locks, STARBASE Fort Harrison, STARBASE Hill Screaming Eagles, STARBASE Minnesota, STARBASE Oklahoma - Oklahoma City, STARBASE Hawaii, STARBASE Kansas City, STARBASE Manhattan, STARBASE Oklahoma - Tulsa, STARBASE One, STARBASE Salina, STARBASE Topeka, STARBASE Vermont - Rutland, STARBASE Vermont - South Burlington, STARBASE Wichita, Winchester STARBASE Academy, STARBASE Savannah, STARBASE Alpena, STARBASE Peterson, STARBASE Kingsley and STARBASE Puerto Rico.

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 FY 2016 program year was 1:11, making the average class size for the FY 2016 program year 24 students. Three locations reported averages below 20 students.⁶ The highest reported average class size was 35 students by STARBASE Los Alamitos.

Classroom size has decreased in public schools across the country and many DoD STARBASE locations have increased their efforts to service more students by opening additional DoD STARBASE classrooms so that classes may operate simultaneously. Additional DoD STARBASE classrooms allow schools to send more students who are then assigned a DoD STARBASE class. Depending on the number of students arriving from the school, the resulting “DoD STARBASE class” may contain students originating from multiple classrooms. In FY 2016, 38 DoD STARBASE locations, about 64 percent, operated simultaneous classes ranging from two simultaneous classes to as many as six. On average, DoD STARBASE locations operate two simultaneous classes. The ability to operate simultaneous classes is dependent upon available space and personnel.

Gender Composition

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



“I was a parent chaperone all five days at STARBASE Battle Creek. The learning opportunities and experiences the students had was second to none. I am looking forward to having our two sons participate in the next few years.”

— JENNIFER SINCLAIR, PARENT CHAPERONE, DELTON KELLOGG SCHOOLS ATTENDING STARBASE BATTLE CREEK

⁶ STARBASE MCAS Beaufort, STARBASE NOVA Courage, and STARBASE Minnesota reported averages of less than twenty students.

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, as well as reporting relationships. 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. Contractor affiliations make up 52 percent of the employment relationships, followed by state and federal affiliations which are at 47 percent and 1 percent, respectively.

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 61 DoD STARBASE locations, 13 operate with the four typical staff members of director, a deputy director/instructor, an instructor, and an office manager/administrative assistant. Many locations have made adjustments to the prototype staffing model. The most common changes in the staffing model are additions to instructional and classroom support staff in an effort to serve more students. Some locations restructure the administrative position to include instruction. Other DoD STARBASE 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. In FY 2016 other instructional support DoD STARBASE positions included: DoD STARBASE 2.0 coordinators, teaching assistants, tech assistants, substitute instructors and modified deputy director/office manager. If a location does not meet the DoDI prescribed manning model, the director must submit a written request for a waiver to OASD/M&RA.

Of the 61 DoD STARBASE locations in FY 2016, 44 operated with more than four staff members with most locations having on average two additional staff. Table 3 describes the FY 2016 staffing profile for full-time and part-time personnel. Full time is defined as an employee working more than 125 days per year.

Table 3: FY 2016 Staffing Profile

Position	Number of Staff	Full-Time	Part-Time
Director	55	55	0
Deputy-Director/Instructor	52	51	1
Instructor	59	55	4
Office Manager	43	33	10
Instructional Support	122	71	51
Total	331	265	66

Table 3 also shows there are fewer staff directors than DoD STARBASE locations. Some directors manage more than one location, some DoD STARBASE locations are new and have not hired a director yet, and other DoD STARBASE locations are in the process of replacing directors who have left the program.⁷

DoD STARBASE instructors tend to be full-time (93 percent), seasonal (44 percent) employees. Seasonal is defined as an employee working nine months or less during the fiscal year.⁸ Seasonal employment limits the number and type of outreach activities a DoD STARBASE program may offer and may also prevent a program location from obtaining Level II status.

Staff Changes and Departures

There was a 14 percent increase in the number of employees from FY 2015 resulting in 41 percent of all DoD STARBASE staff having 2-4 years of DoD STARBASE experience. DoD STARBASE instructors (48 percent) are the bulk of this experience group. Directors and Deputy Directors tend to have 2-7 years of DoD STARBASE experience at 55 percent and 53 percent respectively. Office managers (66 percent) have the least amount of DoD STARBASE experience at 1-4 years. New staff members are typically trained on-the-job. Prior to teaching at DoD STARBASE, new instructors may observe experienced instructors, who often serve as their mentors. Instructors also attend regional workshops for delivery of computer aided design (CAD) software and updates to the DoD STARBASE curriculum.

There were 65 staff departures in FY 2016. The majority (28 departures) were at the instructor level. Teaching assistants were the next highest with 14 departures followed by Office Managers at 12 departures. The overall turnover rate in FY 2016 was 23 percent, which is up from last fiscal year's turnover rate of 21 percent. A few (3) of these staff were terminated while others elected to leave the DoD STARBASE program. Directors reported the most common reasons that staff members who left the DoD STARBASE program gave was because of personal reasons (20 percent), moving (17 percent) and a better opportunity at another academic institution (15 percent).⁹ A few of these positions (13 vacancies) remained unfilled at the end of FY 2016.

Volunteers

Volunteers are an essential participant group in the DoD STARBASE program. They serve as presenters, board members, advisors, tour guides, instructor aids, and perform 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 9,321 volunteers who contributed a total of 99,643 hours, worth an estimated \$2,897,086.44¹⁰ contribution, to the program during FY 2016 (see Table 4). As part of the objectives outlined under the *Inspire* goal 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. After parents, military personnel account for the greatest amount of volunteers, followed by teachers. Teachers participate in the DoD STARBASE program along with their students. Teachers provide instructional support to the DoD STARBASE classroom and gain valuable classroom techniques that

⁷ Directors in Connecticut, North Carolina, Indiana, Oklahoma, Oregon, South Dakota, and Vermont operate multiple STARBASE locations.

⁸ Directors did not report in this category for 64 employees.

⁹ Other reasons reported for leaving: Chose to work for a school district near home (2 percent), College Graduation (2 percent), Moved away for Employment Opportunity (2 percent), Further Education (2 percent), Pregnancy/additional children (2 percent), Stay at home dad with new baby (2 percent), Non Academic Career Change (3 percent), STARBASE funding uncertainty (3 percent), Retired (5 percent), Terminated (5 percent), Reason Unknown (22 percent).

¹⁰ The value of volunteer time presented here is the average wage of non-management, non-agricultural workers by state found at: https://www.independentsector.org/volunteer_time.

can be applied to activity based education. It is estimated that teachers provide a volunteer value of \$1,561,973 to the program in FY 2016. The amount of time donated by this field of experts (over 38,000 hours) is a testament to the schools commitment and support of the DoD STARBASE program.

Table 4: FY 2016 Volunteer Participation

	Volunteers	Hours	Value
Military	2,296	11,907	\$266,691
Teachers	1,924	38,577	\$1,561,973
Parents	4,268	42,363	\$915,767
Other ¹¹	833	6,796	\$152,655
Total	9,321	99,643	\$2,897,086.44

Outreach

Many DoD STARBASE locations provide resources and training to local teachers. Of the 61 locations, 23 locations provided some kind of training to local teachers in FY 2016. Many DoD STARBASE locations (63 percent) reported they have relationships with nearby teacher colleges or training programs where student teachers may obtain practicum hours at DoD STARBASE. At the DoD STARBASE locations that offer teacher training, 70 percent of the teachers may use this training towards their certification requirements.

Students may attend DoD STARBASE at the 5th grade level, as well as participate in other outreach programs that are available in their area at other grade levels. OASD/M&RA encourages DoD STARBASE locations to connect with other local outreach programs to create a STEM pipeline for students. Directors from 41 of the 61 DoD STARBASE locations report that they have relationships with other outreach programs in their area to include: FIRST LEGO League, Civil Air Patrol, Girl Scouts and Boy Scouts. In addition, the DoD STARBASE location may coordinate a DoD STARBASE 2.0 program at the middle school level.

DoD STARBASE 2.0 Program

2.0 PROGRAM ELEMENTS

DoD STARBASE 2.0 is a STEM-based afterschool mentoring program that is based at a collaborating school system.¹² 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 FY 2016, 2.0 programs were organized by 24 DoD STARBASE locations in 15 states and reported coordination of 50 DoD STARBASE 2.0 programs.¹³ Throughout FY 2016, directors of the 24 locations were interviewed during site visitations and surveyed to obtain data on program requirements, participants, curriculum, staff, and funding to help determine the overall operational status of the DoD STARBASE 2.0 program.

¹¹ Other volunteers include STEM groups, firefighters, board members, etc.

¹² In FY 2016, DoD STARBASE 2.0 programs were offered in California, Connecticut, Georgia, Indiana, Kansas, Louisiana, Maine, Michigan, Minnesota, New Mexico, Ohio, Oklahoma, Oregon, Virginia, and West Virginia.

¹³ A 2.0 program is defined by the location where 2.0 meetings take place. A 2.0 program location may operate a number of 2.0 clubs.

PROGRAM REQUIREMENTS

DoD STARBASE 2.0 maintains a unique school-based afterschool program that targets at-risk 6th to 8th graders. The program takes place in partnering schools that have expressed the desire for additional DoD STARBASE program resources. As with other school-based afterschool 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. The basic guidelines are:

- DoD STARBASE 2.0 meetings are held at a school
- There is ample space for meetings
- Meetings are held after school hours
- Parking is provided for mentors
- A nutritional snack is provided for the students
- The students are in 6th, 7th and/or 8th grades

PARTICIPANTS

In FY 2016, school districts and schools partnered with DoD STARBASE at 50 locations to operate 63 - 2.0 clubs. DoD STARBASE 2.0 programs are sponsored by the Air Force, Air Force Reserve, Army and National Guard (see Table 5). The greatest numbers of programs (32 programs) are sponsored by the National Guard which also hosts the majority of the DoD STARBASE programs (44 DoD STARBASE locations).

Table 5: FY 2016 DoD STARBASE 2.0 Programs and Clubs by Military Affiliation

Service Arm	Number of 2.0 Programs	Number of 2.0 Clubs
Air Force	3	3
Air Force Reserve	14	21
Army	1	1
National Guard	32	38
Marine Corp	0	0
Total	50	63

Many of the FY 2016 DoD STARBASE 2.0 students were former DoD STARBASE students (45 percent) and most were males (67 percent). The average student attendance at club meetings was 15 students. In FY 2016, the DoD STARBASE 2.0 program began with 793 student participants and finished with 639 students. The retention rate is 81 percent. Of the students who did not complete the program, 37 percent were females and 63 percent were males. Directors reported several reasons why students discontinued the program. Relocation, time conflicts, and lack of interest in the chosen curriculum were cited as the main reasons why students drop from the program.

The students are mostly 6th and 7th graders (51 percent and 29 percent, respectively) although some are from other grades (see Table 6).

Table 6: Grade Level of Participating Students

Grade Level	Percentage of Students
4th Grade	1
5th Grade	0
6th Grade	51
7th Grade	29
8th Grade	19
9th Grade	0
10th Grade	0
11th Grade	0
12th Grade	0

2.0 CURRICULUM

Over the course of three to five months, DoD STARBASE 2.0 students work with a STEM mentor on a team project at their school during club meetings. 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. Some programs culminate the program with some sort of related competition such as FIRST LEGO League competitions¹⁴ and Team America Rocketry Challenge.¹⁵

STAFF

STEM Mentor Coordinator

DoD STARBASE 2.0 is primarily a volunteer program. The participation of volunteer STEM mentors and volunteer classroom teachers are all coordinated by a designated DoD STARBASE STEM Mentor Coordinator. This is typically a part-time position and many programs choose to hire the STEM Mentor Coordinator in-house with their existing DoD STARBASE director,

¹⁴FIRST LEGO League is a global competition where elementary and middle-school students build LEGO-based robots to complete tasks on a thematic playing surface.

¹⁵The Team America Rocketry Challenge (TARC) is an annual American model rocketry competition for students in grades 7 to 12 where students design, build and launch a rocket with specific characteristics.

deputy director, program instructor, or office manager taking on the additional responsibilities. If hiring in-house is not possible, candidates are recruited from the partnering school or community. The duties of the STEM Mentor Coordinator play an invaluable role in the success of DoD STARBASE 2.0. 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

STEM Mentors

Mentors provide a vital role in the success of the participants and the program, providing a role model of a successful STEM professional. Serial engagements with professionals in STEM careers allow students to network with someone experienced in the field and envision pathways for themselves to pursue those careers. Additionally, mentoring can be a powerful experience for STEM professionals, building work skills and connecting them to their community.

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/background check
- Volunteer approximately six hours per month through the school year

Of the 257 mentors who participated in the In FY 2016 programs, all completed 2.0 training and a background check.¹⁶ The mentors were male (56 percent) and female (44 percent). Mentors from a variety of STEM professions participated in the program and include military, non-military, DoD professionals, industry professionals and college students (see Table 7). Working with a mentor, participating students are exposed to the lifelong benefits of higher education and a career in a STEM-related field. They may also receive guidance about educational and career options.

Table 7: Mentor Types

Type	Percentage of Mentors
Military	27
Non-Military, DoD, Professionals	14
Industry Professionals	3
College Students	5
STARBASE Staff Members	16
Host School Staff Members	23
Other ¹⁷	11

¹⁶Ten programs reported that they did not use mentors.

¹⁷Other types of mentors include: High school students, parents and police officers.

Funding

The DoD STARBASE 2.0 programs operate through a combination of federal and private funds. Of the 24 DoD STARBASE locations coordinating a 2.0 program, about half receive funding from both sources and half operate solely using their federal DoD STARBASE funds.

“I came as a chaperone with my child, and it was a great experience for not only my daughter but for me as well. I learned a lot about STEM that I knew nothing about. I think DoD STARBASE is an excellent program to help motivate kids in learning more about STEM and the careers available for them. Every state should have this program available. Thank you for all that you do.”

– NICOLE POORMAN, PARENT OF STUDENT AT BELLE CHASSE ACADEMY ATTENDING STARBASE JACKSON BARRACKS



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 to "Inspire;" and two Priority Investment Areas within the Federal STEM Education 5-Year Strategic Plan: "Increase and Sustain Youth" and "Public Engagement and Better Serve Groups Historically Underrepresented in STEM Fields." 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 36 learning objectives are clearly outlined for each of the curriculum's 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.

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 instructors establish their teaching criteria, they will use the parent lesson plan and then choose one of the approved appendices to complete the lesson. This allows DoD STARBASE instructors to differentiate their 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 with a 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 36 objectives. 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 are verified and validated during visitations by the evaluation team.

Program Oversight

COMPLIANCE

The Office of the Assistant Secretary of Defense (OASD) for Manpower and Reserve Affairs (M&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 of them, 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 and adjusted each year based on OASD/M&RA guidelines. 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/M&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/M&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.

PERFORMANCE LEVEL DESCRIPTIONS

Level I: The Basic/Fully Operating Location

Level I criteria includes all DoDI requirements and operating guidelines stipulated by OASD/M&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/M&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. High priority activities 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/M&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, 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 1025.7 are conducted at least once every three years for each DoD STARBASE location. The FY 2016 visitations focused on DoD STARBASE 2.0 participation and execution as well as one new director orientation, and four compliance visits. 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/M&RA program manager upon completion of the visitation. OASD/M&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/M&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; 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 a written request for modification to OASD/M&RA for exceptions or revisions on DoDI 1025.7 requirements; and incomplete implementation of the core curriculum. As previously indicated, given the number and scope of activities, the number of incidents is small, 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.

“As a parent of a child with a medical limiting condition, DoD STARBASE allowed my son to have exposure to the military and learn about many opportunities that are still available to him in the future. These programs teach our children how to become independent and free thinkers, and to grow so much on their own.”

— GREG HAWLEY, PARENT OF STUDENT ATTENDING PEACH STATE STARBASE

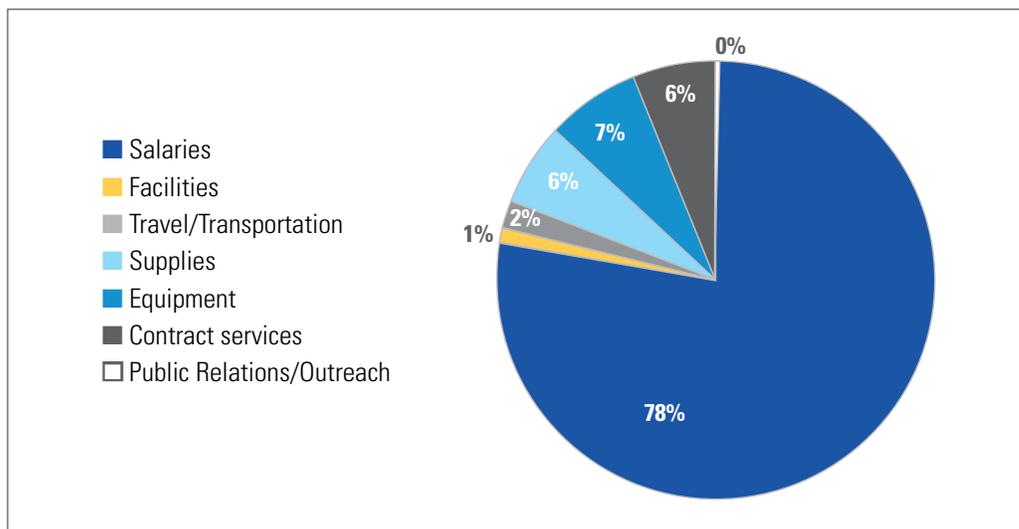
Fiscal Analysis

A congressional appropriation to the Department of Defense (DoD) funds the operation of DoD STARBASE. The Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs (M&RA) oversees the program and distributes funding. In FY 2016, the total program budget was \$25,000,000. OASD/M&RA allocated \$22,783,000 to program operations. The remainder of the appropriation was used for assessment activities, staff development and training programs, and overall program design and development activities.

In FY 2016, the median operating cost per location was \$338,468. This is a 1.3 percent decrease from FY 2015. Several factors contribute to the cost variances, including geographic location, outreach programs, and salary scales. OASD/M&RA annually reviews each location's budget to maintain an equitable distribution of funds.

Operational costs differ among DoD STARBASE locations. Overall expenditures of DoD STARBASE funds allocated to each program site are shown in Figure 1. Staff costs range from 46 percent to 98 percent of the location's budget which, on average, account for 78 percent of the site budget followed by equipment (7 percent), supplies (6 percent), and contract services (5 percent).

Figure 1: FY 2016 Expenditure of DoD Funds



In addition to DoD funds, 25 of the 61 locations obtained funding from non-DoD sources. The total raised from non-DoD funding for FY 2016 was \$528,269.00. The average raised by locations that secured additional funding through state allocations, grants, and donations was \$8,953.71. The total monies received from these sources were \$25,000.00, \$61,737.00, and \$141,007.00, respectively. A total of \$596,161 (86.00 percent) of supplemental funding was expended in FY 2016. Academies use supplemental funding for staff salaries (91.89 percent); program/curriculum development (2.73 percent); facilities/furnishings (4.92 percent); transportation/travel (7.17 percent); supplies (24.38 percent); equipment (10.92 percent); contract services (8.45 percent); public relations/outreach (7.76 percent); and other expenditures (2.66 percent).

Student Assessment

OVERVIEW

The Department of Defense (DoD) sponsored STARBASE program provides science, technology, engineering and math (STEM) experiences to American youth at roughly five dozen military installations across the United States. Each year, the efficacy of DoD STARBASE in achieving its mission is evaluated in several ways, including measuring basic STEM knowledge gained from program participation. The program is also evaluated annually in terms of improvements in student attitudes toward STEM subjects in the contexts of school, the military, and career opportunities.

This evidence-based evaluation process starts with students completing the DoD STARBASE Student Assessment Questionnaire before beginning the DoD STARBASE program. Students then complete the same assessment again, once the program is completed. The key pre- to post-program assessment areas include:

- Attitudes toward STEM topics
- Attitudes toward STEM careers, both military and non-military
- Attitudes toward the military (e.g., military personnel, military locations)
- Knowledge items assessing STEM conceptual understanding

The Student Assessment Questionnaire is modified somewhat each year to adapt to changes in the DoD STARBASE program as well as to reflect the evolving direction of student engagement with STEM learning opportunities and career interests. Each item is evaluated based on prior year assessment results by subject matter experts in either the DoD STARBASE program curriculum or testing and measurement techniques. This year's DoD STARBASE Student Assessment uses a set of 18 knowledge items (17 correct/incorrect knowledge items, and one listing-based knowledge item) and 35 attitudinal items. Pilot items and historical items are maintained in an item database for possible use in future administrations and to allow year-to-year comparison.

INSTRUMENT DESIGN

The core curriculum content underwent significant changes in 2010 and is updated regularly with new learning exercises and experiences for the students. In response, the DoD STARBASE Student Assessment is updated annually to:

- Continually align the assessment with the DoD STARBASE learning objectives and DoD sponsor objectives
- Gather data on pilot items that can be utilized in future assessments
- Minimize the risk of teaching to the assessment

As in previous years, the assessment for this year consists of two separate instruments combined into one questionnaire. The first instrument is an 18-item multiple-choice assessment of STEM knowledge that is focused on the core DoD STARBASE curriculum. The second instrument is a 35-item survey measuring various aspects of students' attitudes and opinions about STEM and DoD STARBASE that impact areas such as academic success and future career goals.

- Knowledge Assessment – 17 multiple-choice items and one nomination item were included in the Knowledge Assessment. All of the knowledge items have been used previously.
 - The 17 multiple-choice items were used for most of the evaluations of knowledge gains, due to the different scoring pattern of the nomination item.

- Attitudinal Survey – 35 attitudinal items (31 administered both pre- and post-program; four administered post-program only) were included in the survey:
 - 33 items were retained from 2015 with only slight wording changes.
 - Item order was modified in 2016 to make it easier for students to follow the response option formatting.

Data collected from students using the Knowledge Assessment and the Attitudinal Survey appear in this report as item results and category results based on groups of items. There are also overall scores which are presented as a mean score (i.e., group average score) and also as a percent score (i.e., percent correct for Knowledge Assessment; percent favorable for attitude survey). Item results, category results, and overall results are typically compared and contrasted between different groups of students or between different time periods to test for statistically significant differences that may reveal important information about the student participants, the impact of DoD STARBASE participation in a given year, or trends that can be seen across years.

STUDY LOGISTICS

The DoD STARBASE Student Assessment was administered between January and June of 2016. The Student Assessment was administered twice to the same participating class of students (pre- and post-program) at each participating academy to gauge program impact. The assessments were shipped 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.
- Completed questionnaires were returned to General Dynamics Information Technology (General Dynamics IT) for processing using scan form technology.

"A few weeks ago, we began the DoD STARBASE program. I truly believe it has been a good experience for me and my classmates. DoD STARBASE brings challenging activities and experiments that help us understand the topics and work on our teamwork skills. Here in DoD STARBASE, I have seen my friends participate together in ways I've never seen before. DoD STARBASE has been an amazing experience."

– ALINA GRACIA, STUDENT AT WALKS/WEBS ACADEMY AT MAYAGUEZ PR,
ATTENDING STARBASE PUERTO RICO



STUDENT DEMOGRAPHIC INFORMATION

The student survey was administered during the first half of 2016, with a total of 3,314 (1,668 pre-program and 1,646 post-program) surveys returned to General Dynamics IT for processing. Responses were received from 60 of the 61 DoD STARBASE locations¹⁸ (98 percent academy response 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 2,890 surveys (1,445 matching cases for pre- and post-program assessments). All of the 1,445 matching cases had no more than three missing items for the pre-questionnaire and no more than three missing items for the post-questionnaire. These 1,445 cases are referenced throughout this report.

The frequency and percent of DoD STARBASE students who reported belonging to the various demographic categories are presented in Table 8 and Table 9. As in previous years, the DoD STARBASE student population is fairly evenly split between boys and girls (50.4 percent and 48.9 percent, respectively). Most of the students were in the 5th grade (92.6 percent) and between 10-11 years old (93.9 percent).

Table 8: Demographic Profile of Student Sample

Item	Response	Frequency	Percent
Age	9	10	0.7
	10	589	40.8
	11	768	53.1
	12	73	5.1
	13	5	0.3
	Unknown/No answer	0	0.0
Grade	4	27	1.9
	5	1338	92.6
	6	78	5.4
	Unknown/No answer	2	0.2
Gender	Boy	729	50.4
	Girl	707	48.9
	Unknown/No answer	9	0.6

Note: Percentages may not total to 100 percent within categories due to rounding.

DoD STARBASE academies are hosted by military installations across the nation, with 51 percent of student assessments coming from the South (24 percent) and Southeast (27 percent) combined. Another 44 percent came from the Midwest (32 percent) and the West (12 percent). A small number of students were served in the East (4 percent).

¹⁸ STARBASE Indiana – South Bend did not participate in the student assessment because it is a new academy and didn't start seeing students until March 2016.

Forty-nine percent of DoD STARBASE programs (721 students) brought students in one day per week versus the students coming to the program every day within a one week time span (39 percent of academies including 556 students). Four of the DoD STARBASE academies reported being aware of testing accommodations, indicating that the program is accessible to students that may need special accommodations during the program sessions.

Table 9: Demographic Profile of Academy Sample

Item	Response	Academy Frequency	Student Frequency	Student Percent
Region	East	5	61	4.2
	Midwest	18	458	31.7
	South	14	344	23.8
	Southeast	12	385	26.6
	West	11	197	12.5
Class Schedule	Consecutive	23	556	38.5
	One per week	29	721	49.9
	Other schedule	7	168	11.7
	Unknown/No answer	23	556	38.5
Accommodations	Not aware of testing accommodation	55	1268	87.8
	Aware of testing accommodation	4	177	12.2

Students' previous exposure to the military and the DoD STARBASE program is presented in Table 10. Familiarity with the military and with 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 (66.6 percent), had heard about DoD STARBASE (62.5 percent), or had met military people before coming to the DoD STARBASE program (65.0 percent), but roughly a third of participants had no previous contact with the DoD STARBASE program or military personnel before their participation, indicating that the program is successful in reaching out to the general community.

Table 10: Students' Prior Experience with Military and DoD STARBASE

Item	Response	Frequency	Percent
I have met military people before coming to DoD STARBASE	No	500	34.6
	Yes	939	65.0
	Unknown/No answer	6	0.4
I heard about DoD STARBASE before I knew I was coming here	No	536	37.1
	Yes	903	62.5
	Unknown/No answer	6	0.4
I know someone that went through DoD STARBASE before me	No	477	33.0
	Yes	963	66.6
	Unknown/No answer	5	0.3

Students' Attitudinal Responses

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 7-point Likert scale with a range of responses from one (Strongly Disagree) through seven (Strongly Agree).

For the students responding to both the pre- and post-program attitude questionnaire, many of their pre-program responses started out positive and increased in favorability post-program. This suggests that these students entered the program with generally positive attitudes that were reinforced throughout the program.

PRE/POST ATTITUDINAL SURVEY MEANS

To provide a five-year comparison, the DoD STARBASE pre- and post-program Attitudinal Survey total mean scores beginning in 2012 are shown in Table 11. Total mean scores are a composite averaged score of all the items on the survey with a possible range from one (least favorable) to seven (most favorable). The pre-program means include the 31 core survey items. The post-program means include the 31 core survey items as well as the four post-program items. Appendix A provides explanations of the statistical techniques used to analyze group differences and relationships throughout this report.

As in the previous years, there was a significant increase in post-program mean scores as compared to pre-program mean scores, indicating that immediately following the program, students responded more favorably. The total mean scores for the pre- and post-program are fairly typical compared to recent years. Additional details are provided in Table 11, including the total mean attitudinal scores as well as the score shift from pre- to post-program starting in 2012. It should be noted that of the 35 attitude items, 17 were verbatim from prior years, 16 had slight wording modifications compared to 2015, and two were new. A larger number of changes and new items were made in 2014. As a consequence, some dissimilarity in the overall mean from 2014 as compared to the 2015 and 2016 overall means was expected.

Table 11: Pre/Post Attitudinal Survey Means and Standard Deviations (2012 - 2016)

Survey	2012 Mean*	2013 Mean*	2014 Mean*	2015 Mean*	2016 Mean*
Pre-Program	5.69	5.82	5.78	5.18	5.56
Post-Program	5.89	5.97	5.91	5.59	5.77
Survey	Std. Dev.				
Pre-Program	0.71	0.61	0.63	0.86	0.77
Post-Program	0.69	0.66	0.67	0.86	0.76

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

Table 12 rank-orders the items based on post-program means from most favorable to least favorable. Eighty-one percent of the items show some degree of increase in favorability from pre- to post-program means. The 20 bolded items (65 percent of the 31 items assessed at both pre-test and post-test) show a statistically significant increase in favorability from pre-program to post-program attitudes. The top item displayed what is called a "ceiling effect"; it was so positive at the pre-test (6.44 out of 7 or 92.0 percent of the maximum possible score) that there was little room for an increase. Attaining nearly as high a score at the post-test (6.42 or 91.7 percent of the maximum), however, demonstrated the value of the DoD STARBASE program. (This item was reversed scored so that more disagreement translates to a higher mean value.)

Table 12: Pre/Post Rankings and Mean Scores of Student Attitudinal Responses

Pre-Program N=1,445		Attitudinal Item	Post-Program N=1,445	
Mean	Rank		Mean	Rank
6.44	1	I do not think DoD STARBASE will help me do better in school. (Reversed Scored)	6.42	1
6.26	3	I will enjoy/have enjoyed coming to a military location.	6.42*	2
Post only		At DoD STARBASE, I learned a lot of things that I can use.	6.38	3
6.33	2	I like figuring out how to use technology (computers, tablets, smart phones, etc.)	6.34	4
6.22	4	I like technology.	6.32*	5
6.22	5	People who work for the military do lots of different things.	6.29*	6
Post only		DoD STARBASE Instructors made learning about STEM (Science, Technology, Engineering, and Math) topics fun.	6.27	7
Post only		DoD STARBASE is boring. (Reversed Scored)	6.25	8
5.77	12	Most people use STEM (Science, Technology, Engineering, and Math) skills every day.	6.17*	9
5.96	8	Scientists work on things that will make life better.	6.09*	10
Post only		I will tell others about my DoD STARBASE experience.	6.06	11
5.97	7	Military bases are exciting.	6.06*	12
5.77	11	People who work for the military use technology in their jobs.	6.04*	13
5.50	17	Engineers help solve challenging problems.	6.00*	14
6.01	6	I want to learn more about technology.	5.98	15
5.90	9	I think learning about STEM (Science, Technology, Engineering, and Math) topics will help me in my daily life.	5.96	16
5.26	24	I am aware of some STEM (Science, Technology, Engineering, and Math) jobs.	5.92*	17
5.53	16	I enjoy learning about STEM (Science, Technology, Engineering, and Math) topics.	5.83*	18
5.87	10	I would like to learn more about science.	5.81	19
5.48	18	STEM (Science, Technology, Engineering, and Math) jobs are exciting.	5.77*	20
5.70	13	I like science.	5.74	21
5.21	25	I like engineering.	5.64*	22
5.38	21	I want to learn more about engineering.	5.60*	23
5.55	15	I must do well in math to get the kind of job I want.	5.59	24
5.35	22	A military base is a good place to work.	5.57*	25
5.41	20	I am good at math.	5.54*	26
5.47	19	I would like to learn more about math.	5.47	27
5.55	14	My teacher is excited about science.	5.46*	28
5.17	27	I am good at science.	5.44*	29
4.96	29	Learning about science is easy for me.	5.27*	30
5.19	26	My teacher thinks technology is important.	5.27*	31
5.29	23	I like math.	5.26	32
4.97	28	When I finish school, I would like to get a job where I could use STEM (Science, Technology, Engineering, and Math).	5.23*	33
4.46	31	I am interested in being a scientist or engineer.	4.71*	34
4.60	30	I would join a science club at my school if it was offered.	4.54	35

* Bold items show statistically significant changes.

SHIFTS IN STUDENTS' ATTITUDES

Table 13 provides the top ten significant pre- to post-program attitudinal shifts for the 2016 program. As expected, the attitudinal items demonstrated a positive shift from pre-program mean responses to post-program mean responses. In particular, there was a 9.5 percent increase from pre- to post-program mean response in awareness of STEM careers. There also was a substantial change of 5.7 percent on awareness of the use of STEM skills in daily life, indicating that the DoD STARBASE program is achieving one of its primary goals. Further indicating that the DoD STARBASE program is achieving its goals, students also responded with greater positivity toward learning, science, math, engineering and technology after attending DoD STARBASE.

Table 13: The Top 10 Ranking of Attitudinal Item Shifts from Pre- to Post-Program in 2016

Attitudinal Item	Mean Percent Positive Shift Pre- to Post-Program
I am aware of some STEM (Science, Technology, Engineering, and Math) jobs.	9.51%
Engineers help solve challenging problems.	7.20%
I like engineering.	6.17%
Most people use STEM (Science, Technology, Engineering, and Math) skills every day.	5.72%
Learning about science is easy for me.	4.44%
I enjoy learning about STEM (Science, Technology, Engineering, and Math) topics.	4.26%
STEM (Science, Technology, Engineering, and Math) jobs are exciting.	4.07%
I am good at science.	3.87%
People who work for the military use technology in their jobs.	3.86%
When I finish school, I would like to get a job where I could use STEM (Science, Technology, Engineering, and Math).	3.70%

MATH AND SCIENCE ATTITUDINAL RATINGS

Similar to previous years, students' mean attitudes in Table 14 on science and math are more positive post- as compared to pre-program. Specifically, students show significant shifts in their self-perceptions about being good at math and science post-program. This suggests that the exposure to STEM concepts taught within the program curriculum gives them more confidence in their math and science abilities. At the same time there was little change in students' liking for either subject after attending DoD STARBASE.

Table 14: Math and Science Attitudinal Item Mean Scores (2016)

Math and Science Attitudinal Items	Pre-Program Mean	Post-Program Mean	Gap Score*
I am good at science.	5.17	5.44	+0.27* (5.22%)
I am good at math.	5.41	5.54	+0.13* (2.40%)
I like science.	5.70	5.74	+0.04 (0.70%)
I like math.	5.29	5.26	-0.02 (-0.56%)

MILITARY-RELATED ATTITUDES

Comparisons Based on Prior Experience with Military Personnel

Prior experience with military locations and personnel was related to the pre- and post-program attitudinal patterns of the students. Prior experience was determined by affirmative responses to the demographic item “I have met military people before coming to DoD STARBASE.” As expected, those with prior military exposure had significantly more positive attitudes, both before the program (5.62 vs. 5.45, $F(1,1437) = 16.41, p < .001$) and after completion (5.82 vs. 5.70, $F(1,1437) = 7.49, p < .006$). This difference was evident on 12 items, presented in Table 15, including greater appreciation for science, engineering, military bases and STEM. There were two items in which those with prior experience with the military were more positive on the post-test only (“My teacher thinks technology is important.” and “Scientists work on things that will make life better.”), suggesting that such experience enhances the capacity to derive benefit from the DoD STARBASE program.

There were six items on which participants with prior exposure to the military had more favorable attitudes only on the pre-program assessment. These results suggest that participants with low exposure to the military caught up and had comparably favorable attitudes at the conclusion of the program. As Table 15 shows, these items include: liking technology, liking science, interest in being a scientist or engineer, seeing STEM jobs as exciting, appreciation of the teacher’s excitement about science, and enjoyment of coming to a military location. These outcomes testify to the impact of the DoD STARBASE program on attitudes even for those without prior experience with the military.

Table 15: Significant Differences in Attitudinal Items Based on Prior Military Contact

Attitudes That Are More Positive with Prior Military Contact
I am good at science. (Pre & Post)
Learning about science is easy for me. (Pre & Post)
Military bases are exciting. (Pre & Post)
I want to learn more about technology. (Pre & Post)
A military base is a good place to work. (Pre & Post)
I like engineering. (Pre & Post)
I want to learn more about engineering. (Pre & Post)
I like math. (Pre & Post)
I am aware of some STEM (Science, Technology, Engineering, and Math) jobs. (Pre & Post)
Most people use STEM (Science, Technology, Engineering, and Math) skills every day. (Pre & Post)
People who work for the military do lots of different things. (Pre & Post)
People who work for the military use technology in their jobs. (Pre & Post)
My teacher thinks technology is important. (Post only)
Scientists work on things that will make life better. (Post only)
I like technology. (Pre only)
My teacher is excited about science. (Pre only)
I like science. (Pre only)
I am interested in being a scientist or engineer. (Pre only)
STEM (Science, Technology, Engineering, and Math) jobs are exciting. (Pre only)
I will enjoy coming to a military location. (Pre only)

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

SHIFTS IN MILITARY-RELATED ATTITUDES

Table 16 shows the four items in the Attitudinal Survey related to perceptions surrounding the military. The item, “I have enjoyed coming to a military location,” received a post-program mean of 6.42 out of a possible 7.00, indicating a very positive rating. Positive post-DoD STARBASE ratings also were observed for the items “People who work for the military do lots of different things” (mean = 6.29) and “People who work for the military use technology in their jobs” (mean = 6.04). Although the item “A military base is a good place to work” (mean = 5.57) was ranked lower than other items, it was still substantially above the 3.5 midpoint of the scale, and increased significantly as a function of participation in the DoD STARBASE program (change +.22). In general, it appears that students’ attitudes about the military are positively influenced by their DoD STARBASE experiences.

Table 16: Pre- to Post Attitudinal Shifts on Military-Related Items

Military Attitudinal Items	2016
	Shift
I will enjoy/have enjoyed coming to a military location.	+ .16* (2.55%)
People who work for the military do lots of different things.	+ .07* (1.13%)
A military base is a good place to work.	+ .22* (4.11%)
People who work for the military use technology in their jobs.*	+ .27 (3.86%)

* New item 2015

COMPARISON OF HIGH VS. LOW MILITARY ATTITUDE

Overall military attitudes were calculated based on a composite of the four items identified above. Students with a sum total of 27 or 28 (out of a possible 28) on those four items in the post-program assessment were categorized as having high military attitudes (n=491). Students with a sum total of 19 or less on those four items were categorized as having low military attitudes (n=178).

Table 17 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, broadly described (e.g., “When I finish school, I would like to get a job where I could use STEM,” “STEM jobs are exciting”);
- More interest in science (“I would like to learn more about science,” “Scientists work on things that will make life better,” “I would join a science club at my school if it was offered”);
- More interest in technology (“I want to learn more about technology.” “I like figuring out how to use technology gear [computers, tablets, smart phones, etc.]”);
- More interest in engineering (“I want to learn more about engineering,” “Engineers help solve challenging problems.”);
- More interest in mathematics (“I must do well in math to get the kind of job I want,” “I would like to learn more about math”);
- Greater appreciation for the DoD STARBASE program (“At DoD STARBASE, I learned a lot of things that I can use,” “DoD STARBASE Instructors made learning about STEM topics fun).

In short, students with more receptive attitudes toward the military appear to also be more highly motivated in regard to STEM learning and applications presented in that context. All of the gap differences between students with high or low military attitude scores are statistically significant.

Table 17: Statistically Significant Post-Program Gap Scores Based on Low and High Military Attitudes

Attitude Item	Low Military Attitude (n = 178)	High Military Attitude (n = 491)	+ Gap
Post-Program Attitudes (mean total) Composite Score	4.83	6.26	1.43
A military base is a good place to work.	3.54	6.80	3.26
Military bases are exciting.	3.84	6.94	3.10
I have enjoyed coming to a military location.	4.62	6.97	2.35
People who work for the military do lots of different things.	5.03	6.92	1.90
I enjoy learning about STEM (Science, Technology, Engineering, and Math) topics.	4.62	6.39	1.77
I want to learn more about engineering.	4.41	6.18	1.77
STEM (Science, Technology, Engineering, and Math) jobs are exciting.	4.63	6.34	1.71
I like engineering.	4.49	6.19	1.70
I will tell others about my DoD STARBASE experience.	4.90	6.52	1.61
I would join a science club at my school if it was offered.	3.53	5.12	1.59
I am interested in being a scientist or engineer.	3.80	5.32	1.53
DoD STARBASE Instructors made learning about STEM (Science, Technology, Engineering, and Math) topics fun.	5.17	6.68	1.51
When I finish school, I would like to get a job where I could use STEM (Science, Technology, Engineering, and Math).	4.26	5.72	1.46*
People who work for the military use technology in their jobs.	5.12	6.58	1.46*
At DoD STARBASE, I learned a lot of things that I can use.	5.37	6.77	1.40*
I think learning about STEM (Science, Technology, Engineering, and Math) topics will help me in my daily life.	5.06	6.40	1.34*
I would like to learn more about science.	4.91	6.24	1.33*
DoD STARBASE is boring. (Reversed Scored)	5.20	6.62	1.42*
I like science.	4.90	6.18	1.28*
My teacher is excited about science.	4.72	5.95	1.23*
My teacher thinks technology is important.	4.53	5.75	1.22*
Engineers help solve challenging problems.	5.22	6.42	1.20*
I do not think DoD STARBASE will help me do better in school. (Reversed Scored)	5.41	6.61	1.19*
I like math.	4.53	5.67	1.14*
I want to learn more about technology.	5.25	6.38	1.13*
I am aware of some STEM (Science, Technology, Engineering, and Math) jobs.	5.25	6.30	1.05*
Learning about science is easy for me.	4.57	5.61	1.04*
Most people use STEM (Science, Technology, Engineering, and Math) skills every day.	5.57	6.58	1.01*

Continued on next page

Table 17: Statistically Significant Post-Program Gap Scores Based on Low and High Military Attitudes, (cont.)

Attitude Item	Low Military Attitude (n = 178)	High Military Attitude (n = 491)	+ Gap
Scientists work on things that will make life better.	5.44	6.44	1.01*
I would like to learn more about math.	4.86	5.86	1.00*
I am good at science.	4.80	5.77	0.98*
I am good at math.	4.90	5.78	0.88*
I must do well in math to get the kind of job I want.	5.04	5.91	0.87*
I like figuring out how to use technology (computers, tablets, smart phones, etc.).	5.76	6.56	0.79*
I like technology.	5.80	6.55	0.74*

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

** Statistically significant difference.*

GENDER COMPARISONS AND ATTITUDINAL DIFFERENCES

The following two tables provide the Attitudinal Survey mean total scores, as well as the item-level detail comparing the responses for both boys and girls.

Table 18 shows the overall gender differences in responses for both the pre- and post-program responses. Although the attitude scores for the boys were slightly higher than girls at the pre-program assessment (5.61 vs. 5.52, $F(1, 1434) = 5.68, p < .02$), the gap had been reduced by a third at the post-program assessment and was no longer statistically significant (5.81 vs. 5.76, $F(1, 1434) = 1.99, p < .16$).

Boys and girls did not significantly differ on 23 of the 35 post-program items measuring favorable attitudes about STEM and the DoD STARBASE program. Boys displayed more positive attitudes toward STARBASE and STEM than girls on nine items as shown by Table 19. These include three items related to engineering (e.g. "I want to learn more about engineering."), three items related to technology (e.g. "I like figuring out how to use technology (computers, tablets, smart phones, etc.)"), one item focused on math ("I am good at math."), and one item focused on military bases ("Military bases are exciting."). Girls expressed more positive attitudes than boys on three items, including spreading the word about the DoD STARBASE program ("I will tell others about my DoD STARBASE experience."), commending the enthusiasm of their school classroom teacher ("My teacher is excited about science.") and recognizing the widespread impact of STEM ("Most people use STEM (Science, Technology, Engineering, and Math) skills every day."). These outcomes suggest that both genders are deriving useful life lessons from the DoD STARBASE program.

Boys seem to show more interest in hands-on STEM involvement while girls seem more attuned to social aspects of STEM experiences, at least with respect to these particular items that reflect significant differences in attitudes between them. To put the findings in perspective, these represent one third of the 35 Attitudinal Survey items; there were not significant differences on the other 23 items. Both gender groups are also above the scale mid-point values, on average. Even so, there may still be an opportunity to draw girls into more active engagement with STEM learning activities in the DoD STARBASE curriculum through promoting and encouraging girls in hands-on participation and taking the lead on group tasks.

Table 18: Gender Differences on Pre/Post Attitude Survey Mean Total Scores

	Sample Size	Pre-Program Mean	Post-Program Mean	Performance Gap Score
Boys	729	5.61	5.81	+0.20
Girls	707	5.52	5.76	+0.24

Table 19: Gender Gap Score Differences in Post-Program Attitude Survey Mean Item Scores

Attitude Item	Girls' Mean	Boys' Mean	B-G Difference
Boys More Favorable than Girls			
I am interested in being a scientist or engineer.	4.40	5.02	0.62*
I want to learn more about technology.	5.76	6.19	0.44*
I like engineering.	5.43	5.85	0.42*
I want to learn more about engineering.	5.41	5.80	0.39*
I like technology.	6.17	6.44	0.27*
People who work for the military use technology in their jobs.	5.92	6.16	0.24*
I am good at math.	5.43	5.64	0.21*
Military bases are exciting.	5.98	6.16	0.18*
I like figuring out how to use technology (computers, tablets, smart phones, etc.).	6.26	6.43	0.17*
Girls More Favorable than Boys			
I will tell others about my DoD STARBASE experience.	6.25	5.89	-0.36*
My teacher is excited about science.	5.59	5.33	-0.26*
Most people use STEM (Science, Technology, Engineering, and Math) skills every day.	6.23	6.10	-0.13*

* Statistically significant difference



"It is a distinct honor and privilege to have the opportunity to positively impact the lives of so many kids. They are the future of our nation and it is very important for me to do what I can to motivate and encourage them. DoD STARBASE tours are a wonderful opportunity to pique their interest and get them excited about service to our nation."

— CW2 NATHANEAL HERRERA, TEXAS STARBASE - HOUSTON

GENDER DIFFERENCES BASED ON PRIOR EXPERIENCE WITH MILITARY PERSONNEL

Gender differences in attitudes were examined in terms of differential experience with military personnel (Table 20). The positive impact of prior exposure to the military did not interact with gender on pre-program attitudes ($F(1, 1426) = .004, p = .95$) or post-program attitudes ($F(1, 1426) = .001, p = .98$). That is, although boys had more favorable attitudes than girls, and those with prior exposure to the military were more favorable than those who did not have prior exposure to the military, the impact of one variable, such as gender, did not influence the impact of the other variable, exposure to the military.

Table 20: Prior Experience with the Military and 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	5.50	5.74	5.66	5.85	+.11
Girls	5.41	5.70	5.58	5.80	+.10

COMPARISONS BASED ON PRIOR KNOWLEDGE OF DoD STARBASE

Knowledge of the program was measured by responses to the item: "I heard about DoD STARBASE before I knew I was coming here." Those familiar with DoD STARBASE showed a marginal trend toward responding more favorably to the pre-test Attitudinal Survey items (5.59 vs. 5.28, $F(1,1437) = 2.70, p = 0.10$) and the post-program assessment (5.81 vs. 5.74, $F(1,1437) = 2.77, p = 0.10$) (Table 21). This result suggests that those who heard about the program started and finished the program with slightly more positive attitudes.

Inspection of the individual Attitudinal Survey items reveals that those who had heard about DoD STARBASE had more favorable attitudes about military bases both before and after the program. That group was also more inclined, in the post-program survey, to see the DoD STARBASE program as exciting rather than boring, and more likely to tell others. Most interesting was the finding that four attitude items were different only at the pre-program assessment, indicating that participation in the DoD STARBASE program eliminated the differences between those with prior knowledge of DoD STARBASE and those lacking such knowledge on items dealing with STEM, engineering and technology.

Table 21: Significant Differences on Attitudinal Survey Items Based on Prior Knowledge of DoD STARBASE

Pre- and Post-Program	Pre-Program Only	Pre-Program Only
I will enjoy/have enjoyed coming to a military location.	When I finish school, I would like to get a job where I could use STEM (Science, Technology, Engineering, and Math).	I will tell others about my DoD STARBASE experience. (Asked only post-program)
People who work for the military do lots of different things.	I am aware of some STEM (Science, Technology, Engineering, and Math) jobs.	A military base is a good place to work.
Military bases are exciting.	Engineers help solve challenging problems.	DoD STARBASE is boring. (Asked only post-program, reversed scored)
	I like figuring out how to use technology (computers, tablets, smart phones, etc.).	People who work for the military use technology in their jobs.

IMPACT OF STUDENT AGE AND GRADE ON REPORTED ATTITUDES

Table 22 presents the statistically significant correlations between a student's age and grade in school with Attitudinal Survey items. Although the student's age and grade variables are correlated ($r = .36$, $p < .0001$), grade seems to be a more reliable and consistent predictor of student attitudes. That is, grade correlated with nine attitudes, compared to only four for age, as shown in Table 22. This is reasonable, because students participate with their classmates by grade level, and not by age. The magnitudes of the relationships are all small, and thus explain only a slight portion of the differences among students' attitudes toward STEM and DoD STARBASE. The observed statistical significance is due mostly to the large sample size, which increases the power and sensitivity of the analysis to detect trends that may have limited practical importance. This may especially be the case considering the narrow range of observed values and substantial percentages of one or two values (i.e., 94 percent of students are 10 or 11 years old, and 93 percent are in Grade 5).

The four observed positive relationships suggest that, at least to some extent, older students (e.g., 12-13) and those in a higher grade (e.g., Grades 5-6) may serve as role models to younger students in lower grades for a positive view of teachers, military bases and mathematics. Extending a trend noted in 2014-15, however, students at higher grade levels were also less likely to express an interest in engineering or STEM. This suggests that the DoD STARBASE program may have somewhat greater impact on participants in the lower grade levels (e.g., Grades 4-5). For example, older students displayed more pessimism about DoD STARBASE helping them in school during the pre-program assessment ($r = -.082$, $p < .05$), and though the correlation declined it was still significant at the post-program assessment ($r = -.077$, $p < .05$). Yet the DoD STARBASE program had an impact even on older students.

At the pre-program assessment, there was a significant negative correlation between age and wanting to learn more about technology ($r = -.067$, $p < .05$) and with enjoying learning about STEM (Science, Technology, Engineering, and Math) topics ($r = -.053$, $p < .05$). Both relationships were reduced to non-significance at the post-program assessment ($r = -.037$, $p = .16$; $r = -.008$, $p = .75$, respectively).

Table 22: Relationships of Student Age and Grade with Post-Program Attitudinal Responses

Attitude Item	Correlation	
	Age	Grade
My teacher thinks technology is important.	.092**	.041
My teacher is excited about science.	.081**	.054*
People who work for the military do lots of different things.	.051	.098**
I like math.	.036	.063*
I do not think DoD STARBASE will help me do better in school. (Reversed Scored)	-.077**	-.049
I am aware of some STEM (Science, Technology, Engineering, and Math) jobs.	-.071**	-.058*
I like engineering.	-.029	-.097**
I want to learn more about engineering.	-.017	-.078**
Most people use STEM (Science, Technology, Engineering, and Math) skills every day.	-.041	-.069**
I am interested in being a scientist or engineer.	-.010	-.065*
When I finish school, I would like to get a job where I could use STEM (Science, Technology, Engineering, and Math).	-.037	-.058

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).
NOTE: Positive values indicate increasing favorability with older age and higher grade, vice versa for negative values.

COMPARISONS BASED ON CLASS SCHEDULE

Academies were compared based on class schedule (Table 23). Class schedule was categorized as meeting:

- On consecutive days (23 locations and 556 students).
- Once per week (29 locations and 721 students).

On the attitudinal scores, there was no difference on the pre-test ($F(2,1442)= 0.19, p = .83$), but there were significant differences on the post-test ($F(2,1442)= 4.83, p = .008$). Students who attended on consecutive days showed more attitude gain (+0.29) than those who attended once per week (+0.19).

A reasonable conclusion from these results is that students gain more benefit in the understanding of, and attitudes about, STEM-related concepts and career options from consecutive day attendance at DoD STARBASE over a one week period. It is also noteworthy that positive gains in student attitudes are evident under both class schedule conditions.

Table 23: Class Schedule Pre-Program and Post-Program Attitudinal Scores

	Attitudinal Scores		
	Pre-Program	Post-Program	Gap
Consecutive	5.57	5.86	0.29
Once per week	5.56	5.75	0.19

* Pre-Program attitudes did not differ, but Post-Program attitudes were significantly different across class schedule

EMPIRICAL CONFIRMATION ATTITUDE DIMENSIONS

To further help understand the impact of the DoD STARBASE program on student attitudes, the 35 attitude items were initially grouped into six dimensions on the basis of a *priori* rational conceptualizations during the design phase of the assessment. These six dimensions were empirically refined by follow up statistical confirmation in 2015 using principal components analysis (PCA), a standard data reduction method, with student response data. In a PCA analysis, items are correlated with statistically derived factors or dimensions that provide the simplest description of the patterns of covariance of the data. As a result of this empirical confirmation, seven factors were derived in 2015 (one of which was used only on the post-test); the definitions are provided below.

The results obtained in 2015 were overwhelmingly replicated in 2016. The specific items and the results of the PCA analysis for both 2015 and 2016 are presented in the Appendix B. The loadings of those attitude items used in both years were calculated for the seven factors, separately for the 2015 and 2016 data.¹⁹ Then, the paired sets of factor loadings were correlated. The correlations between the seven comparable 2015 and 2016 factors averaged $r = .92, p < .0001$, indicating high structural consistency (see Appendix B).

¹⁹ Three items used in 2015 were not used in 2016 ("I would take engineering classes if offered;" "I would like a job in a science-related area;" "I would take classes on technology if available."). As a consequence, there were 33 items used in both 2015 and 2016. In 2016, two new attitude items were added ("My teacher is excited about science;" "My teacher thinks technology is important."). The new items loaded on the Military Setting Endorsement factor. To maximize continuity with the prior results, those items were not included in the 2016 Military Setting Endorsement total.

Also, similar to the outcomes in 2015, each of the seven dimensions in 2016 is reliable, based on Cronbach's α , a statistical index of measurement consistency and coherence:

- STEM Concept Awareness – Recognition of the value of technology in everyday life. (3 items, $\alpha = .743$)
- Future Planning – Expression of interest in future careers and taking relevant classes, especially in STEM. (6 items, $\alpha = .863$)
- Science Confidence – Appreciation for science and a positive view of one's capacity for learning science. (5 items, $\alpha = .838$)
- Math Confidence – Enjoyment of math and belief in personal ability to do well in mathematics. (4 items, $\alpha = .810$)
- STEM Behavior & Motivation – Identification with the importance of STEM and the roles of engineers and scientists in solving problems and improving life. (5 items, $\alpha = .717$)
- Military Setting Endorsement – Positive impressions about enjoying military facilities and the diversity of work activities done by people on military bases. (5 items, $\alpha = .662$)
- STARBASE Program Evaluation – Positive rating of the impact of the DoD STARBASE program on learning and enthusiasm to convey that to others. (5 items, $\alpha = .788$)

Contrast analyses were performed between 2016 pre-program and post-program Attitude scores on the six pre- and post-program dimensions (the seventh dimension was only post-program; Table 24). As with the trends observed for the individual attitude items presented in Table 11, there were increases in favorable attitudes on the dimension scores from pre-program to post-program. Four differences were statistically significant on STEM Behavior and Motivation, Future Planning, Military Setting Endorsement, and Science Confidence. The lack of change on STEM Concept Awareness can be attributed to a ceiling effect. The pre-program score of 6.18 on a 7-point scale is already 88.28 percent positive and the post-program score of 6.21 is a commendable 88.71 percent favorable. The outcomes using the Attitude dimensions further substantiates the impressions suggested by the analyses of the individual items; namely, that the DoD STARBASE program continues to succeed in its intended mission to have a positive, beneficial impact on: 1) participating students' attitudes toward STEM learning activities, and 2) their awareness of how important STEM is to many different career opportunities in both civilian and military organizations.

Table 24: Pre-Program and Post-Program Attitudinal Dimension Scores

Attitude Dimension	Pre-Program	Post-program	+ Gap
STEM Concept Awareness	6.18	6.21	0.03
Future Planning	5.17	5.46	0.29***
Science Confidence	5.25	5.36	0.11***
Math Confidence	5.42	5.46	0.04
STEM Behavior & Motivation	5.68	6.02	0.34***
Military Setting Endorsement	5.91	6.08	0.17***
DoD STARBASE Program Evaluation		6.24	

*** Difference is significant at the 0.001 level (2-tailed).

Analyses assessing gender differences were also conducted on post-program Attitude Dimension scores (Table 25). At the end of the DoD STARBASE program, boys' Attitude Dimension scores exceeded girls' scores on STEM Awareness and Future Planning. Perhaps more noteworthy is the finding that girls were not significantly different from boys on Science Confidence, Math Confidence, or STEM Behavior and Motivation. Girls were actually more favorable than boys on the DoD STARBASE Program Evaluation dimension.

Table 25: Gender Gap Score Differences in Post-Program Attitude Dimension Scores

Attitude Dimension	Girls' Mean	Boys' Mean	B-G Difference
STEM Concept Awareness	6.06	6.35	0.29***
Future Planning	5.34	5.59	0.25***
Science Confidence	5.36	5.36	0.00
Math Confidence	5.40	5.54	0.14+
STEM Behavior & Motivation	6.06	5.99	-0.06
Military Setting Endorsement	6.05	6.11	0.06
DoD STARBASE Program Evaluation	6.32	6.18	-0.16*

*** Difference is significant at the 0.001 level (2-tailed). * Difference is significant at the 0.05 level (2-tailed). +Difference is a just trend at the 0.07 level, due to high variability within groups.

DRIVERS OF STUDENT ATTITUDE

The subsections of the Table 26 (on page 76) provide a list of non-overlapping statistical predictors for specific target student attitudes. The predictors, or drivers, are rank-ordered by relative impact of the driver attitude on the target attitude. This indicates that if the conditions in each list are present (that is, more favorable attitude is expressed), it is very likely the target attitude also will be present.

The Adjusted R^2 values indicate the cumulative amount of the variance, or variability, across students in their attitudes about DoD STARBASE and STEM-related topics that the drivers explain. That is, these attitude items predict student feelings about particular aspects of the DoD STARBASE program with an increasing degree of efficiency. Each of the individual predictors is also statistically significant in its own right. Thus, they provide a condensed model toward understanding what makes students more enthusiastic about the program and about STEM. Many consider these lists to be prioritized action items for improving the target attitude.

"Thank you so much for letting us come to DoD STARBASE. I love the way you guys did so many learning STEM activities. I also liked the way you gave us an appreciation to learn things I never knew or thought that I never knew."

— MANGO, STUDENT AT WEST MIDDLE SCHOOL ATTENDING STARBASE CONNECTICUT - WINDSOR LOCKS



CONSIDERATIONS BASED ON DRIVERS

There are repeating drivers that appear to have a broad impact on the target attitudes. Two main drivers affected four of the six target attitudes:

- I do not think DoD STARBASE will help me do better in school. (Reversed Scored)
- Military bases are exciting.

Two other drivers each impacted three target attitudes:

- I will tell others about my DoD STARBASE experience.
- I would join a science club at my school if it was offered.

Thirteen additional drivers affected two target attitudes:

- A military base is a good place to work.
- DoD STARBASE Instructors made learning about STEM (Science, Technology, Engineering, and Math) topics fun.
- DoD STARBASE is boring. (Reversed Scored)
- I am good at math.
- I have enjoyed coming to a military location.
- I like engineering.
- I like math.
- I think learning about STEM (Science, Technology, Engineering, and Math) topics will help me in my daily life.
- I want to learn more about engineering.
- Most people use STEM (Science, Technology, Engineering, and Math) skills every day.
- People who work for the military use technology in their jobs.
- People who work for the military do lots of different things.
- Scientists work on things that will make life better.

These outcomes suggest that DoD STARBASE instructors should continue to stress the value of science, should continue to make learning fun, and should continue to emphasize the positive qualities of military bases. Other drivers of student attitudes, such as liking science, and wanting to learn more about engineering and technology, are important predictors, but may follow from the more potent predictors. To the extent that academies are able to create a stimulating, rewarding and supportive learning environment, positive student attitudes can be enhanced and reinforced, which may pay continuing dividends after DoD STARBASE attendance. These desirable outcomes include:

- Word of mouth endorsement,
- Further pursuit of learning about technology,
- STEM career motivation, and
- Support for the military, including possible enlistment.

Table 26: 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.	DoD STARBASE Instructors made learning about STEM (Science, Technology, Engineering, and Math) topics fun.	.276
	I think learning about STEM (Science, Technology, Engineering, and Math) topics will help me in my daily life.	.340
	I do not think DoD STARBASE will help me do better in school. (Reversed Scored)	.377
	I will tell others about my DoD STARBASE experience.	.396
	Military bases are exciting.	.406
	Scientists work on things that will make life better.	.412
	DoD STARBASE is boring. (Reversed Scored)	.419
	I like math.	.422
	I am good at math.	.425
People who work for the military do lots of different things.	.427	
I will tell others about my DoD STARBASE experience.	DoD STARBASE Instructors made learning about STEM (Science, Technology, Engineering, and Math) topics fun.	.458
	At DoD STARBASE, I learned a lot of things that I can use.	.516
	I have enjoyed coming to a military location.	.543
	I do not think DoD STARBASE will help me do better in school. (Reversed Scored)	.558
	My teacher is excited about science.	.568
	I would join a science club at my school if it was offered.	.574
	People who work for the military do lots of different things.	.581
	DoD STARBASE is boring. (Reversed Scored)	.585
	Scientists work on things that will make life better.	.589
	Military bases are exciting.	.592
	I think learning about STEM (Science, Technology, Engineering, and Math) topics will help me in my daily life.	.595
Engineers help solve challenging problems.	.597	
I want to learn more about technology.	I like technology.	.403
	I want to learn more about engineering.	.506
	I like figuring out how to use technology (computers, tablets, smart phones, etc.).	.547
	I like science.	.558
	Military bases are exciting.	.567
	I am good at math.	.574

Continued on next page

Table 26: Drivers of Key Target Attitudes (Post-Program Responses), (cont.)

Target Attitude	Drivers of Target Attitude	Adjusted R Square
I am interested in being a scientist or engineer.	I like engineering.	.314
	I would join a science club at my school if it was offered.	.430
	When I finish school, I would like to get a job where I could use STEM (Science, Technology, Engineering, and Math).	.488
	I want to learn more about engineering.	.494
	I do not think DoD STARBASE will help me do better in school. (Reversed Scored)	.496
	I like math.	.499
	I am good at science.	.501
Military bases are exciting.	A military base is a good place to work.	.258
	I have enjoyed coming to a military location.	.362
	I want to learn more about technology.	.388
	I do not think DoD STARBASE will help me do better in school. (Reversed Scored)	.397
	People who work for the military use technology in their jobs.	.402
	Most people use STEM (Science, Technology, Engineering, and Math) skills every day.	.406
	Engineers help solve challenging problems.	.409
	I will tell others about my DoD STARBASE experience.	.412
	I like figuring out how to use technology (computers, tablets, smart phones, etc.).	.414
Military people do lots of different things.	People who work for the military use technology in their jobs.	.210
	A military base is a good place to work.	.269
	Most people use STEM (Science, Technology, Engineering, and Math) skills every day.	.292
	I will tell others about my DoD STARBASE experience.	.302
	Engineers help solve challenging problems.	.308
	I like engineering.	.316
	Military bases are exciting.	.320
	I would join a science club at my school if it was offered.	.323
I enjoy learning about STEM (Science, Technology, Engineering, and Math) topics.	.326	

Student Knowledge and Skills

The 18 items of the Knowledge Assessment were categorized according to the DoD STARBASE curriculum area that they most closely measure in order to calculate scale scores. The following table (Table 27) breaks down the Knowledge Assessment items into the specific curriculum areas that are measured. Only the item stems are presented here.

Table 27: Scored and Pilot Knowledge Items by Curriculum Area

Chemistry Science (E3.1.1.2)	
Item #	
1	Sodium and chloride bond to form salt (NaCl). What does this bonded substance represent?
5	Which pie chart represents the correct composition of air?
10	Which of the following is an example of physical change?
14	Which of the following states of matter have the least amount of kinetic energy?
Engineering (E3.1.1.4)	
Item #	
2	By constructing a 3D scale model of a car, a person can learn all of the following EXCEPT...
3	Why are prototypes a key part of the engineering design process?
11	When using computer design software to build a model, the first step is to...
Mathematics Operations & Applications (E3.1.1.5)	
Item #	
4	Which of the following is typically measured in nanometers?
9	In the graph above, find the letter that is at the coordinates (3,-2). Is it A, B, C, or D?
12	Of the following, which tool would be appropriate to measure the volume of a glass of milk?
15	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.
Physics (E3.1.1.1)	
Item #	
6	Two boats are floating 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?
13	What scientific law makes it important to wear a seat belt?
Technology (E3.1.1.3)	
Item #	
7	You are working on a new invention to melt snow and ice on walkways. You have 4 different products you need to evaluate but have a limited budget and time frame. Based on the limited information which product would you choose further review?
8	Which of the following would be a good reason to use latitude and longitude coordinates?
17	You start out at the star (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 five kilometers to the East. Where does your friend live?
STEM Awareness	
Item #	
16	STEM (Science, Technology, Engineering, and Math) jobs can involve which of the following?
18	Who uses STEM concepts in their job? (Select all that apply)

INCREASES IN KNOWLEDGE ITEMS BY CURRICULUM AREA

Table 28 shows the pre- and post-program assessment mean score by curriculum area. All categories (e.g., Chemistry, Physics) showed significant improvement post-program as compared to responses prior to participation in DoD STARBASE. The largest improvement was seen in Physics (+46.71 percent). The smallest post-program increases were in STEM Awareness (+7.61 percent), which was already high (therefore susceptible to a ceiling effect), and in Technology and Engineering, which nonetheless saw substantial improvement (+15.43 percent and +15.85 percent respectively).

Table 28: Pre/Post Knowledge Scores by Curriculum Area

Curriculum Area	# of Items	Pre-Program Percent Score	Post-Program Percent Score*	Gap
Knowledge Item Total	18	43.77	68.98	25.22*
Chemistry	4	36.32	73.11	36.79*
Engineering	3	48.81	64.66	15.85*
Math	4	49.48	71.21	21.73*
Physics	2	22.04	68.75	46.71*
Technology	3	45.35	60.78	15.43*
STEM Awareness	2	73.91	81.52	7.61*

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

PRE/POST KNOWLEDGE SCORES

Table 29 compares the pre- and post-program mean scores, percent correct, and gap differences for the Knowledge Assessment since 2012. In 2011 and in 2015, the content of the Knowledge Assessment was updated based on curriculum changes throughout the DoD STARBASE program to align with STEM National Standards. The assessment began measuring new concepts that were more challenging to the students, resulting in lower scores overall. The content changes enacted in 2011 were carried through to 2016, including the replacement of simple knowledge items with problem-solving application items. For example, instead of asking students to recall specific facts regarding the learning activity, the 2012-2016 assessments presented students with situations where they must apply the facts learned in order to answer the question. As a consequence, the 2012-2016 pre-test scores are consistently below 50 percent correct.

In 2013 and 2014, both the pre-program mean and the post-program mean were lower than in previous years, which may reflect the decrease in number of items scored beginning in 2013 and/or the academic preparation of the students coming to the DoD STARBASE program. The gap score declined in 2015 and 2016 due to the further reduction in the number of items to 17. Nonetheless, the program continues to create a demonstrable increase in student knowledge as indicated by the post-program average number of correct responses, which is comparable to prior years and has consistently resulted in post-test mean scores that show most questions are answered correctly (i.e. 69 percent correct in 2016). Table 30 is extended in Appendix C by presenting comparable information on an item-by-item basis.

Table 29: Pre/Post Knowledge Assessment Mean Total Scores and Percent Correct (2012 – 2016)

Year	2012	2013	2014	2015	2016
# of Items	30	25	27	17*	17*
Pre-Program Score	14.88 (49.6%)	12.18 (48.7%)	12.42 (46.0%)	7.62 (44.8%)	7.44 (43.8%)
Post-Program Score	21.45 (71.5%)	17.37 (69.5%)	17.56 (65.0%)	12.88 (78.1%)	11.73 (69.0%)
Gap	+6.57 (21.9%)	+5.19 (20.8%)	+5.14 (19%)	+4.47 (26.3%)	+4.29 (25.2%)

KNOWLEDGE ASSESSMENT SCORES AS A FUNCTION OF MILITARY ATTITUDES

Performance on the Knowledge Assessment was examined as a function of high and low military attitudes (see Table 17). Table 30 shows that those with high military attitude and those with low military attitude scores did not significantly differ in their pre-program mean knowledge ($F(1,668) = 0.24, p = .63$). In the post-program assessment, by contrast, those with high military attitudes displayed a stronger performance than those with low military attitudes ($F(1,668) = 6.06, p < .01$). Both the low and high military attitude groups had significant gains in knowledge scores pre- to post- program ($F(1,667) = 956.16, p < .0001$), but the high military attitude score group showed significantly greater improvement (+4.53 vs. +3.74, $F(1,667) = 8.68, p = .003$). This finding suggests that students who are more favorably disposed toward the military context of the program tend to be more highly engaged with learning about STEM principles and concepts in an applied military setting.

Table 30: Pre/Post Knowledge Assessment Mean Scores for High and Low Military Attitude Students

Military Attitude	Sample Size	Pre-Program Mean	Std. Deviation	Post-Program Mean*	Std. Deviation
High Military Attitude	445	7.26	2.60	11.79*	2.94
Low Military Attitude	145	7.38	3.00	11.12*	3.57

* Significant increase in post-program means.

GENDER DIFFERENCES ON KNOWLEDGE ASSESSMENT

Table 31 presents the pre- and post-program scores and gap differences between scores based on gender. Similar to several prior years, the pre-program knowledge score was significantly higher for boys than for girls. Although boys' knowledge scores were 6 percent higher than girls at the pre-program assessment (7.66 vs. 7.20, $F(1, 1434) = 10.46, p < .001$), the gap had been cut in half, to just a 3 percent difference by the post-program assessment (11.91 vs. 11.53; $F(1, 1434) = 5.28, p < .01$). The knowledge increase from pre- to post-program is significant for both boys and girls.

Table 31: Pre/Post Knowledge Assessment Mean Scores by Gender

	Sample Size	Pre-Program Score	Post-Program Score	Performance Gap Score
Boys	729	7.66	11.91	+4.25*
Girls	707	7.20	11.53	+4.33*

*Significant difference between pre-program score and post-program scores.

The differences in gap scores between girls and boys from 2012 to 2016 range from the smallest absolute difference of .07 in 2014 to the largest absolute difference of .37 in 2012 (Table 32). Girls obtained larger gap scores than boys across the years. In 2016, the girls obtained a gap score difference of .08, which indicates that both genders improved to the same degrees as a function of the DoD STARBASE program.

Table 32: Gender Gap Score Differences (2012-2016) on Knowledge Assessment (Pre-program vs. Post-program)

Gender	2012	2013	2014	2015	2016
# of Items	30	25	27	17	17
Boys	+6.39	+5.31	+5.10	+4.31	+4.25
Girls	+6.76	+5.09	+5.17	+4.64	+4.33
Difference	+.37	-.22	+.07	+.33	+.08

PRIOR EXPERIENCES WITH THE MILITARY AND GENDER ON KNOWLEDGE ASSESSMENT

There was a significant direct effect of prior exposure to the military on pre-program knowledge scores ($F(1, 1426) = 14.38$, $p < .0001$), a direct effect of gender ($F(1, 1426) = 7.32$, $p < .007$), but no interaction between gender and exposure ($F(1, 1248) = 2.51$, $p < .11$) on pre-program knowledge scores. Similarly, there was a significant direct effect of both prior exposure to the military on post-program knowledge scores ($F(1, 1426) = 9.10$, $p < .003$) and gender on post-program knowledge scores ($F(1, 1426) = 4.05$, $p < .04$), but no interaction between gender and prior exposure ($F(1, 1248) = 0.28$, $p = .60$). Thus, these patterns of results suggest that individual differences in prior exposure to the military and male gender both influenced knowledge scores, but the positive effects were independent rather than building on each other. Put another way, both boys and girls with prior exposure to the military had an advantage in STEM knowledge at the outset, but the DoD STARBASE program did not significantly increase this difference.

Table 33: Prior Experience with the Military and Knowledge Differences by Gender

	No Prior Experience with Military		Prior Experience with Military		Difference Between Pre-Program Means	Difference Between Post-Program Means
	Pre-Program	Post-Program	Pre-Program	Post-Program		
	Mean	Mean	Mean	Mean		
Boys	7.25	11.62	7.86	12.04	+.61	+0.42
Girls	6.89	11.18	7.41	11.79	+.52	+0.61

COMPARISONS BASED ON CLASS SCHEDULE

Comparisons between knowledge scores as a function of consecutive day versus once per week class schedule are presented in Table 34. Students attending on consecutive days exhibited higher pre-program knowledge scores than those who attended once per week, but less than those who attended on some other schedule ($F(2,1442) = 18.12, p < .001$). Yet, students who attended on consecutive days also demonstrated the highest knowledge gain (improvement of 4.41), followed by those who attended once per week (+4.22, $F(2,1442) = 18.42, p = .001$).

Table 34: Class Schedule Pre-Program and Post-Program Knowledge Scores

	Knowledge Scores*		
	Pre-Program	Post- Program	Gap
Consecutive	7.83	12.24	4.41
Once per week	7.02	11.24	4.22

RELATION OF ATTITUDE COMPONENTS TO KNOWLEDGE SCORES

Pearson correlations between the seven attitude dimensions and STEM Total Knowledge scores were calculated. The seven Attitude dimensions are moderately correlated with each other, as would be expected, yet are distinct enough to reflect clear aspects of student attitudes toward STEM, career, the military and DoD STARBASE. Correlations are presented between the Pre-Program Attitudes and both Pre-Program and Post-Program Knowledge, and between Post-Program Attitudes and Post-Program Knowledge. Among the Pre-Program Attitudes, STEM Behavior & Motivation ($r = .21, p < .0001$) and Future Planning ($r = .18, p < .0001$) are the strongest predictors of Post-Program Knowledge scores.

Table 35: Relationships of Pre-Program and Post-Program Attitudinal Dimension Scores with Post-Program Knowledge Scores

Attitude Dimension	Pre-Program Attitude with Pre-Program Knowledge	Pre-Program Attitude with Post-Program Knowledge	Post-Program Attitude with Post-Program Knowledge
STEM Concept Awareness	.11**	.13**	.14**
Future Planning	.16**	.18**	.17**
Science Confidence	.17**	.19**	.16**
Math Confidence	.11**	.12**	.10**
STEM Behavior and Motivation	.19**	.21**	.23**
Military Setting Endorsement	.04	.02	.05
STARBASE Program Evaluation			.08**

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

Additional correlations were conducted to examine the relation between the pre-program Attitude dimensions and specific post-program knowledge scores by curriculum area. Likely because of its high reliability and precision, the Total Attitude score tended to a stronger predictor of the specific knowledge area scores than any of the individual Attitude dimensions, with the exception of STEM Behavior-Motivation, which also tended to be a strong predictor (Table 36). That said, it was notable that Pre-Program Science Confidence was a significant predictor of Post-Program scores on Chemistry, Engineering and Physics ($r = .16; .12; .07$, respectively), Pre-Program Math Confidence was a significant predictor of Post-Program Math scores ($r = .14$) and Pre-Program Future Planning was a significant predictor of Post-Program Technology scores ($r = .11$, all $p < .05$).

Table 36: Pre-Program Attitude Dimensions and Post-Program Knowledge Scores

	Knowledge Total	Chemistry	Engineering	Physics	Technology	Math	STEM Awareness	STEM Position
Attitude Total	.20**	.17**	.09**	.06*	.13**	.17**	.07**	.13**
STEM Concept Awareness	.13**	.13**	.07**	.04	.08**	.08**	.01	.03
Future Planning	.18**	.14**	.08**	.08**	.11**	.14**	.05*	.13**
Science Confidence	.19**	.16**	.12**	.07**	.08**	.16**	.04	.07**
Math Confidence	.12**	.09**	.04	-.01	.09**	.14**	.06*	.05
STEM Behavior and Motivation	.21**	.18**	.09**	.06*	.14**	.15**	.10**	.18**
Military Setting Endorsement	.02	.02	-.03	.01	.04	.02	.01	.08**

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

HIGH VERSUS LOW PERFORMERS ON KNOWLEDGE ASSESSMENT

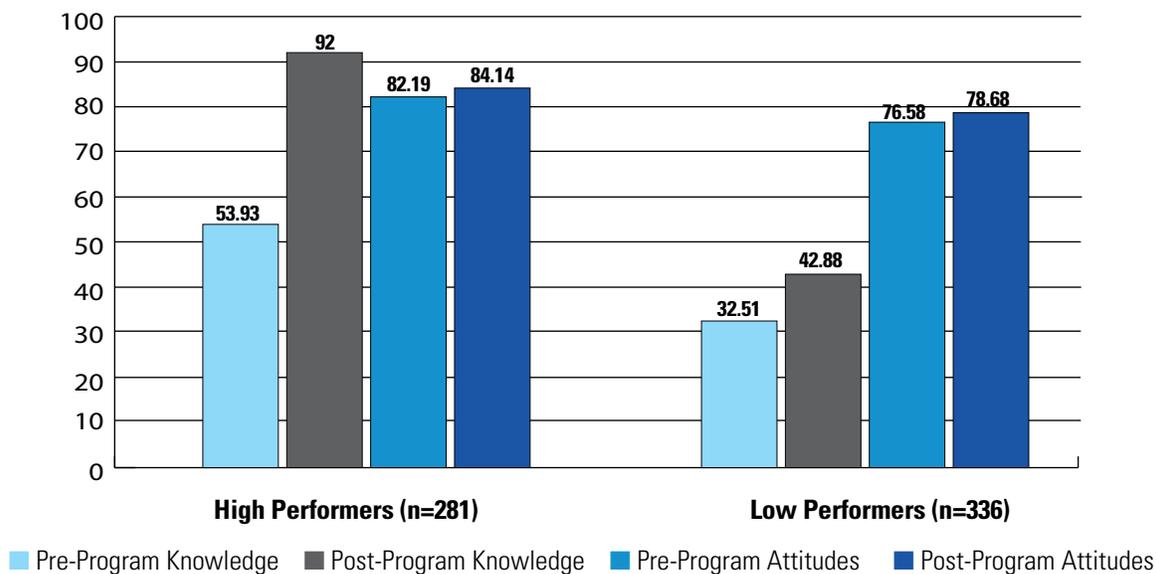
This analysis illustrates the differences between high and low performers on the pre- and post-program knowledge assessment. First, the 17 knowledge items were converted to percentage scores by dividing by 17. Then, performance was measured using the post-program total assessment score sample mean of 68.98 and standard deviation of 18.16. High performance was considered to be a total score of 87.14 percent or higher ($68.98 + 19.16$). A total of 19.4 percent ($n=281$) of the sample was classified as high performers. Low performance was defined to be a total score of 49.82 or lower ($68.98 - 19.16$). A total of 23.3 percent ($n=336$) of the sample was classified as low performers.

Both the low and high performers showed significant improvements after participating in the DoD STARBASE program. Similar to the past several years' 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 10.37 percent increase from pre- to post-program, compared to the high performers, who improved on average by 38.07 percent. The differences between the two groups in pre- and post-program total scores are statistically significant (Pre-test, $F(1,651) = 351.05$; post-test, $F(1,651) = 5,699.89$, both $p < .0001$).

Pre-program and post-program attitude scores also were converted to percentages by taking the average of the 31 items and dividing by 7 (the upper end of the rating scale). The pre- and post-program averages on the attitude surveys also were lower for low knowledge assessment performers. The low performing group had a significantly lower mean attitude rating both pre- and post-program (76.58 percent and 78.68 percent respectively, increase +2.10 percent) as compared to the high performing group (82.19 percent and 84.14 percent respectively, increase +1.95 percent). The difference between groups in attitude shift was not significant.

These data are shown in Figure 2. Overall, both pre-program attitudes and post-program attitudes were significant predictors of post-program knowledge scores for both groups ($r = .20$, $r = .19$, respectively, both $p < .0001$). Yet knowledge differences were greater than attitude differences between the High and Low Performer groups.

Figure 2: High versus Low Performers on Knowledge and Attitude Assessments



PERCEPTIONS OF STEM USE IN JOBS

A new knowledge item in 2015, which also was used in 2016, asked students “Who uses STEM concepts in their job? (Select all that apply).” Twenty-five jobs were listed (Table 37), and the average number nominated pre-program as STEM-related was 11.11 (SD = 5.31). The post-program number of jobs that were seen as STEM-related was 14.68 (SD = 6.10), which was a 32 percent increase and statistically significant ($t(1441) = 23.41$, $p < .0001$). Thus, participants gained a greater awareness of the variety of occupations in which STEM concepts may play a part as a result of their exposure to the DoD STARBASE program.

Table 37: STEM Awareness in Jobs (Pre-test – Post-test)

Accountant 49.1%-64.4%	Camera Operator 84.8%-93.0%	Farmer 35.2%-57.0%	Mail Carrier 46.8%-62.3%	Police Officer 47.7%-66.2%
Actor/Actress 11.9%-22.8%	Car Designer 46.0%-65.5%	Fireman 16.8%-35.4%	Maintenance Worker 34.5%-51.3%	School Counselor 28.0%-43.3%
Animal Breeder 28.6%-43.7%	Crime Scene Investigator 73.8%-83.9%	Hair Designer/Barber 12.0%-23.1%	Manager 79.7%-86.9%	Sports Athlete 17.7%-32.1%
Architect 63.8%-73.7%	Construction Worker 31.8%-48.4%	Housekeeper 45.1%-62.1%	Mechanic 67.5%-80.8%	Teacher 64.8%-77.6%
Nurse 58.3%-70.7%	Cook 23.4%-39.2%	Lawyer 15.3%-28.9%	Military Personnel 46.9%-63.8%	Video Game Designer 81.0%-90.4%

DoD STARBASE participants were most likely to recognize that a Camera Operator and Video Game Designer are most likely to use STEM concepts in their job and were least likely to make that recognition for Actor/Actress and Hair Designer/Barber. Occupations that showed a big jump in participants' recognition of their use of STEM concepts include Farmer (+21.8 percent), Police Officer (+18.5 percent), Housekeeper (+17 percent) and Military Personnel (16.9 percent).

The significant increase in participants' recognitions of the use of science, technology, engineering and mathematics in a wide range of professions, including military service, provides further indication that the DoD STARBASE program is accomplishing its mission of heightening awareness by students of the relevance of STEM in occupations and careers.

CONCLUSION

The 2015-2016 DoD STARBASE program was successful in achieving its major goals as measured by the assessment of student attitudes and knowledge before and after attending the program. It produced measurable changes in students' positive attitudes toward science, technology, engineering and mathematics. Those positive attitudes are likely to be helpful in encouraging learning about STEM topics throughout the students' academic careers.

In addition, the 2015-2016 DoD STARBASE program yielded solid gains in students' STEM knowledge and performance. Students completed the program with an increase in STEM information and skills, which should be of benefit in their continuing school learning about STEM topics. The increase in knowledge performance was particularly noticeable in girls, who have typically been less well prepared in the STEM domain than boys.

Finally, the DoD STARBASE program appears to have supported the DoD sponsor's community outreach objective by creating a favorable impression among many of the participating students of the U.S. military and the people who work for it.

Participating Teacher Assessment

INTRODUCTION

The annual Teacher Survey is one component of an overall program evaluation initiative which attempts to assess a wide range of outcomes of the DoD STARBASE program. As such, it gathers strategic and evaluative information with both immediate and lasting implications.

While the Student Assessment Questionnaire provides direct measures of student STEM knowledge and attitudes, the Teacher Survey provides another perspective. It provides a picture of teacher characteristics and support structures as well as experiences and attitudes formed as a result of their participation in the DoD STARBASE program with their students. Additionally, the Teacher Survey captures valuable information related to their perceptions and opinions about the program's impact on student outcomes. Analytics around survey results also provide information about significant drivers of teacher attitudes and opinions of the DoD STARBASE program.

The Teacher Survey provides a level of analytics that evaluates outcomes indicative of successful DoD STARBASE programs including:

- Progress toward specific academic requirements (e.g., STEM state standards).
- Personal characteristics of students (e.g., STEM confidence, motivation).
- Future planning of students (e.g., career opportunities within the Military and DoD).
- Key stakeholder program support (e.g., principals and parents).

This year 2,296 teachers from 61 academy locations completed the survey during August 2015 through June 2016. This is approximately a 37 percent increase in participation over last year. Fifty-seven academies provided ratings from more than ten teachers with 38 academies providing a sample of thirty or more completed surveys. Each academy that provided teacher ratings received a report of their academy responses twice during the program year, once in February that included responses to date and again in July that included the entire academic year.

ACADEMY CHARACTERISTICS

The 61 academy locations with teachers participating in the survey were affiliated with five Military Components across the United States. The National Guard hosted the majority of academies with 1,673 (73 percent) teachers from 47 academies responding to the survey. The Air Force sponsored eight academies and included 333 (15 percent) completed surveys. The academies were representative across regions with about 50 percent located in the Midwest (19 academies) or the South (14 academies). Appendix D provides the region for each academy location. Listed below are the number of participating academies and sample sizes of teacher surveys for each region.

REGION

- 19 Midwest (N=770)
- 14 South (N=498)
- 12 Southeast (N=495)
- 11 West (N=396)
- 5 East (N=135)

DoD STARBASE Teacher Survey Analysis

DEMOGRAPHIC INFORMATION

For the 2015-2016 academic year, 2,296 school personnel completed the online DoD STARBASE Teacher Survey. This represents an approximate increase of slightly over 37 percent, in total responses as compared to last year (1,668 completed surveys). Table 38 includes the current year percentages for the teacher characteristics. The typical respondent is a female 5th grade teacher between the ages of 30 and 50 years with more than 10 years of teaching experience. The teachers represent a range of teaching experience with the largest percentage (37 percent) of respondents having over 15 years of experience. The majority of teachers (85 percent) taught mainly 5th grade with another 10 percent having taught the fourth (5 percent) or sixth (5 percent) grades. The remaining "Other" response category includes those participants who have taught multiple grades, are administrators with the school district, or work in specialized classrooms such as special education or counseling programs.

Table 38: Teacher Characteristics

Years Taught	Grade Taught	Age Range	Gender
6% First year	5% Grade 4	20% Under 30 years	84% female
16% 2-4 Years	85% Grade 5	30% 31-40 years	16% male
13% 5-7 Years	5% Grade 6	26% 41-50 years	
13% 8-10 Years	5% Other response	20% 51-60 years	
15% 11-15 Years	(e.g., Special class, assistant	4% Over 60 years	
37% Over 15 Years	all grades, administrator)		

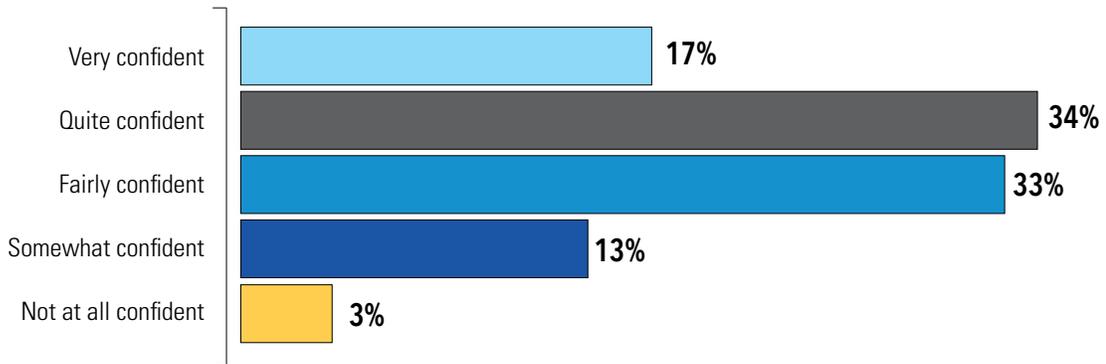
About half of the schools (49 percent) have participated in the program for less than five years. The other half (51 percent) of the schools have more than five years with STARBASE, including 13 percent indicating more than 10 years of experience and 5 percent indicating 15 or more years of STARBASE participation. In contrast, less than 1 percent of the teachers report having participated for 15 years or more in the program, while 42 percent indicated it was their first year participating in a DoD STARBASE program, and approximately half (48 percent) of teachers reported participating in DoD STARBASE at least two years but less than eight years. The data reveals that the STARBASE evaluation survey continues to capture perspectives from newer participants while maintaining a solid base of long term advocates as well.

STEM-RELATED EXPERIENCE

To evaluate familiarity with STEM topics, teachers were asked whether their college major and/or minor were in a STEM-related discipline. Eighty-three percent (N=1,906) of the teachers reported that their college major and/or minor were not in STEM-related disciplines. Of the remaining responses, 9 percent reported that their major was in STEM and 8 percent reported that they minored in a STEM-related discipline.

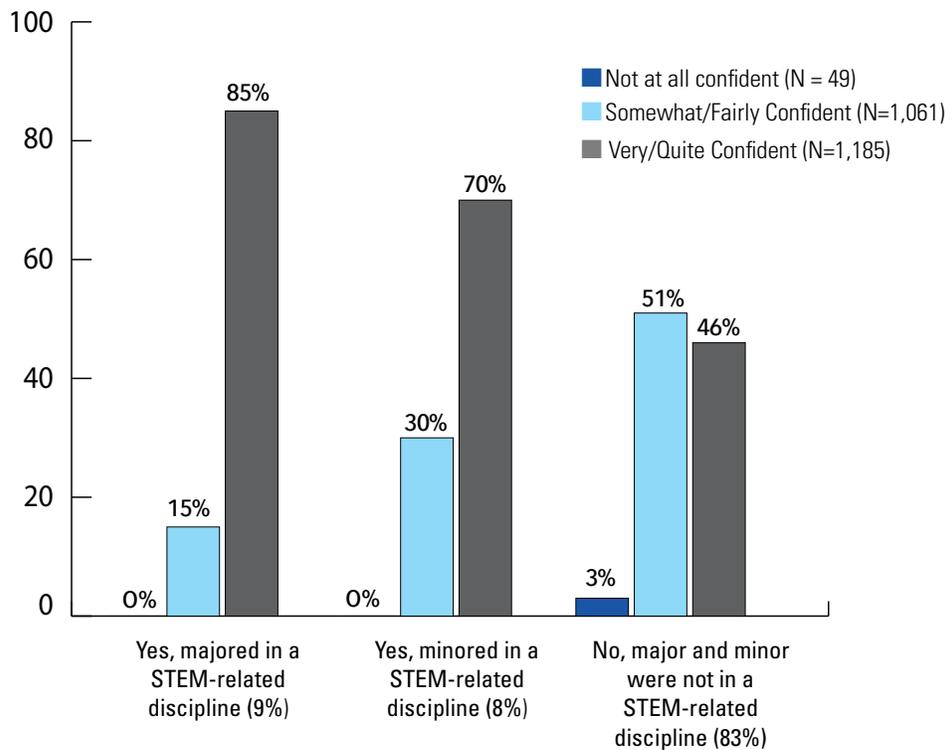
Teachers also provided their level of comfort with teaching STEM-related topics in the classroom. Overall, teachers are confident teaching STEM-related topics to their students with most reporting being Fairly (33 percent), Quite (34 percent) or Very (17 percent) confident (Figure 3).

Figure 3: Confidence with Teaching STEM-Related Topics in the Classroom



Having a degree in a STEM-related discipline provides teachers with more confidence in teaching STEM-related topics to their students. Those teachers who majored in a STEM-related discipline reported higher confidence with 85 percent indicating that they are Very or Quite Confident. In contrast, the majority of teachers (83 percent) did not major or minor in a STEM-related discipline and reported less confidence in teaching STEM-related topics (Figure 4). DoD STARBASE programs provide a valuable resource to teachers with limited background in STEM-related areas.

Figure 4: Confidence in Teaching STEM Concepts Based on College Major/Minor



TEACHER ATTITUDINAL RATINGS

Teachers rated 45 attitudinal items on a 7-point Likert scale from Disagree (1) to Agree (7) based on their experience with the DoD STARBASE program. Teachers in their first year of DoD participation only completed 35 attitudinal items. The items were aggregated into an Overall Index and covered topics including the students' and teachers' attitudes about program concepts such as understanding and enjoying the STEM program content, displaying confidence and motivation in classroom settings, and planning for future goals and careers. Overall, favorability was high and was slightly higher than the attitude score for the previous three years (Table 39). Although the content is not identical to years past, the underlying concepts and themes remain consistent from year to year.

Table 39: Mean Overall Attitudinal Index Scores for the Teacher Survey (2009-2016)²⁰

Overall Index	2009	2010	2011	2012	2013	2014	2015	2016
Summative Mean Ratings	6.24	6.26	6.22	6.26	6.13	6.11	6.15	6.23

The Teacher Survey content aligned with the 2015-2016 DoD STARBASE program goals by incorporating measurement elements of the program's impact on teachers and students during and after attendance. The following table (Table 40) provides the concepts and definitions for each area measured. Additional details for each of the measurement areas are included in Appendix E. Student/Teacher Engagement is a composite of 32 items based on teachers' self-report of their attitudes and their perceptions of students' attitudes during the DoD STARBASE program. Engagement attitudes were grouped according to topic area (e.g., STEM Concepts, Program Support) to illustrate the aggregate ratings of most favorable to least favorable measurement area. Overall, teachers responded favorably to all measurement topics, with the most favorable responses (average overall rating above 6.00) on Overall Student Engagement, Program Support, STEM Concepts, Behavioral/Motivational, Confidence, Teamwork and Post-Program Impact areas.

The analyses also examined the outcomes of DoD STARBASE on student STEM and academic motivation beyond the immediate effects of attendance. The Post-Program Impact scale uses responses to 10 items completed by those teachers who have more than one year of experience with the DoD STARBASE program (N = 1,338). These teachers are in a good position to observe how much their students continued to exhibit STEM relevant pursuits later on. Items included a broad range of post program measures including students' interest in STEM topics, their career choice options, classroom attendance, and participation in STEM-related activities. Some of the more meaningful differences are described later in another section (i.e., awareness of military/DoD career options).

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

Table 40: Teacher Survey Measurement Areas

Measurement Area	Definition	No Items*	Cronbach's Alpha**	Mean	Std. Deviation
Student/Teacher Engagement	Engagement shown while attending DoD STARBASE	32	.963	6.21	.713
Program Support	Support and resources provided to the teachers	7	.775	6.46	.655
STEM Concepts	Interest in and understanding of STEM concepts	6	.886	6.42	.700
Behavioral-Motivational	Effort shown by teachers in reinforcing positive behaviors	5	.811	6.18	.823
Confidence	Students' confidence with abilities and capabilities	3	.862	6.17	.861
Teamwork	Working with and supporting others	3	.916	6.05	.991
Future Planning	Seeing future possibilities and opportunities	4	.922	5.87	1.030
Military and Career	Positive regard for Military personnel and career options	5	.752	5.85	.873
Post-Program Impact	Lasting impact of DoD STARBASE after the program	10	.880	6.34	.806

* Thirty-three of the 35 attitudinal items responded to by the entire sample of teachers were spread across the seven rationally derived engagement sub-categories. Thirty-two of these items formed the overall Student/Teacher Engagement Composite.

** Indicates measurement reliability in terms of internal consistency, or similarity, among contributing items. Values approaching or exceeding .90 reflect higher consistency; values below .70 suggest relatively more diverse subject content among items.

DoD STARBASE'S IMPACT ON THE SCHOOL SYSTEM

The DoD STARBASE program influences students and teachers, yet also impacts the school system overall, both formally and informally. As part of the Teacher Survey, teachers shared their knowledge of specific practices based on their participation in the program.

Table 41 provides the trends in favorable responses to five items dating back to 2012. The greater clarity of modified wording combined with the renewed strength of the program's funding most likely influenced the large increases in favorable responses over the last two years. Two of the largest increases in positive responses involve the resources provided by DoD STARBASE. An increase of slightly over 25 percent in both the use of materials/applications in the classroom and in take home activities also translates into more favorable attitudes overall when comparing teachers' ratings across the past few years. This is also reflected in near unanimous endorsement of the DoD STARBASE program by teachers willing to recommend it to their school colleagues. Even so, there has been a slight slackening in perceptions that DoD STARBASE can help reach state standards although the favorability of ratings remains quite high, with over 94 percent agreement.

Table 41: DoD STARBASE's Impact on the School System

Item	Positive (Yes) Responses				
Current Item	2012	2013	2014	2015	2016
Is there formal communication from your school that raises community awareness of the DoD STARBASE program (e.g., letters to parents, overview at parent open house meetings, etc.)?	50.5%	45.3%	42.8%	62.8%	66.1%
Will you recommend DoD STARBASE to other teachers, principals, or school educators?	89.5%	91.9%	90.5%	99.4%	99.5%
In your view, does the DoD STARBASE curriculum help you reach your state education requirements?	96.5%	99.6%	99.6%	94.2%	94.8%
Do you or will you use DoD STARBASE materials/applications in your own classroom?	60.1%	64.2%	58.1%	85.5%	86.1%
Do you or will you use DoD STARBASE take home activities beyond your classroom?	58.8%	43.0%	36.9%	65.8%	67.4%

SCHOOL AND TEACHER SUPPORT AND TEACHER ATTITUDINAL RATINGS

Program support includes support and advocacy of DoD STARBASE by teachers themselves as well as the resources and support provided to the teachers in the school environment. A school's plan to continue participation in the DoD STARBASE program next year (6.92) indicates the value that participating schools gain from student attendance in the program. Additionally, there is continued support from the teachers looking forward to future participation (6.82), parents that are delighted their children are participating (6.49), and principals that are strong advocates for the program in general (6.30) (Table 42).

As identified in previous years, an opportunity for development still exists with the supplemental resources that are available to the teachers. Teachers generally indicated that they would like to bring more supplemental resources from the DoD STARBASE program back to their classrooms (6.42) and they plan to incorporate some of the teaching techniques into their classroom activities (6.20). The 86 percent agreement rate with intention to use materials from DoD STARBASE in the classroom, shown in Table 41 above, also reinforces the desire for more STEM resources. Results also indicate some teachers prefer DoD supplemental resources over other similar resources (5.90).

Table 42: Program Support Ranked from Most to Least Favorable

	Mean	Std. Deviation
My school plans to participate in the DoD STARBASE program again next year.	6.92	.569
I look forward to bringing future classes to the DoD STARBASE program.	6.82	.624
Parents are delighted that their children are participating in DoD STARBASE.	6.49	.928
I would like more DoD STARBASE supplemental resources to take back to my classroom.	6.42	1.088
My principal is a strong advocate of DoD STARBASE.	6.30	1.118
I plan to incorporate DoD STARBASE teaching techniques into my daily classroom activities.	6.20	1.130
I prefer the supplemental resources DoD STARBASE provides to teachers over other similar resources.	5.90	1.296

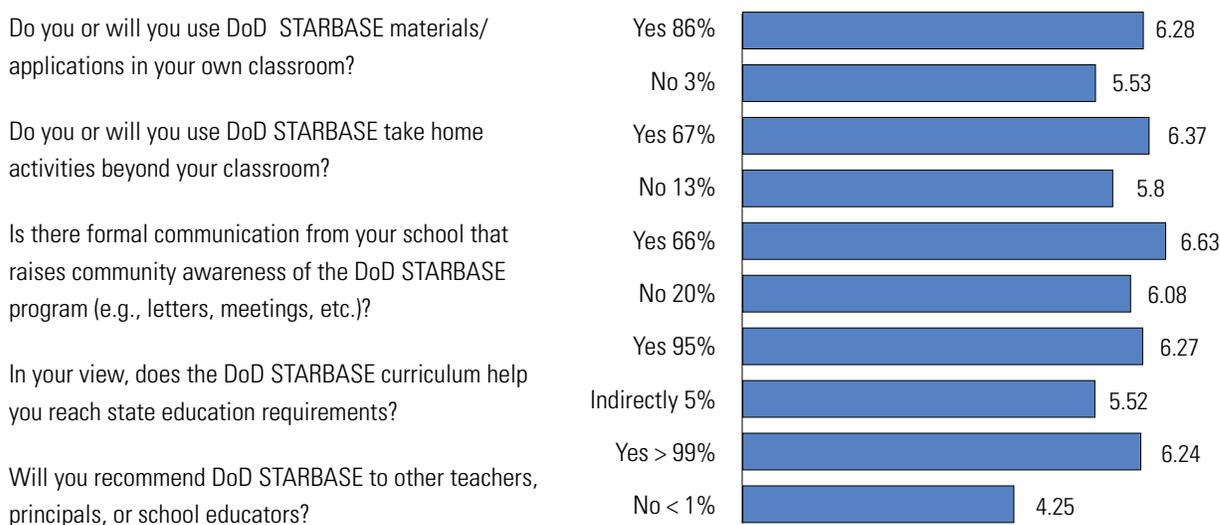
The Overall Index is an aggregate scale based on the mean or average of the attitudinal items. The Overall Index was compared based on responses to items ascertaining the level of support provided to the teachers. In all instances, those teachers who received support from the school and resource materials responded with more favorable attitudes toward the DoD STARBASE program as a whole compared to those teachers with little or no perceived support. Table 43 shows the percent of responses to each of the support items, and the Overall Index mean according to response category (e.g., yes or no). Highlights of the specific outcome comparisons include:

- Teachers who use or plan to use DoD STARBASE resource material and take home activities have more favorable attitudes as measured by the Overall Index (6.28 and 6.37, respectively) compared to those who do not utilize these resources (5.53 and 5.80, respectively).
- Those teachers reporting that the DoD STARBASE curriculum directly helped them reach state education requirements have more favorable overall attitudes (6.27) compared to those reporting only an indirect relationship (5.52).
- Schools with formal communication processes in place had higher teacher ratings (6.63) on the Overall Index than those with no formal communication (6.08) processes in place.
- Teachers who would recommend the DoD STARBASE program responded with higher overall ratings (6.24) as compared to those who would not recommend the program (4.25).

“Every minute of the DoD STARBASE experience is rich with both academic and social skills. At the same time that the students are exploring an F16 jet and learning about aerodynamics they are also being taught the social skills necessary to be part of a group and to be a guest outside of school. It’s a well-rounded experience that not only creates better, more excited scientists, but also more successful community members.”

– DENETTE LOCKE, EDUCATOR AT FLETCHER ELEMENTARY SCHOOL
ATTENDING STARBASE VERMONT - SOUTH BURLINGTON



Table 43: Attitude Ratings by DoD STARBASE Impact Items

MILITARY EXPERIENCE AND CAREER OPPORTUNITIES

Teacher experience with military bases remained similar to the previous three years despite the differences in participation rates during the same time period. The majority of teachers (75%) involved in the DoD STARBASE program this year have had some type of exposure to a military base either for prior DoD STARBASE programs (14 percent), non-related programs (36 percent for unrelated and 5 percent for other program activities), or a combination of the two (19 percent). One quarter of the teachers reported that this is their first experience with a military base and the DoD STARBASE program (Table 44).

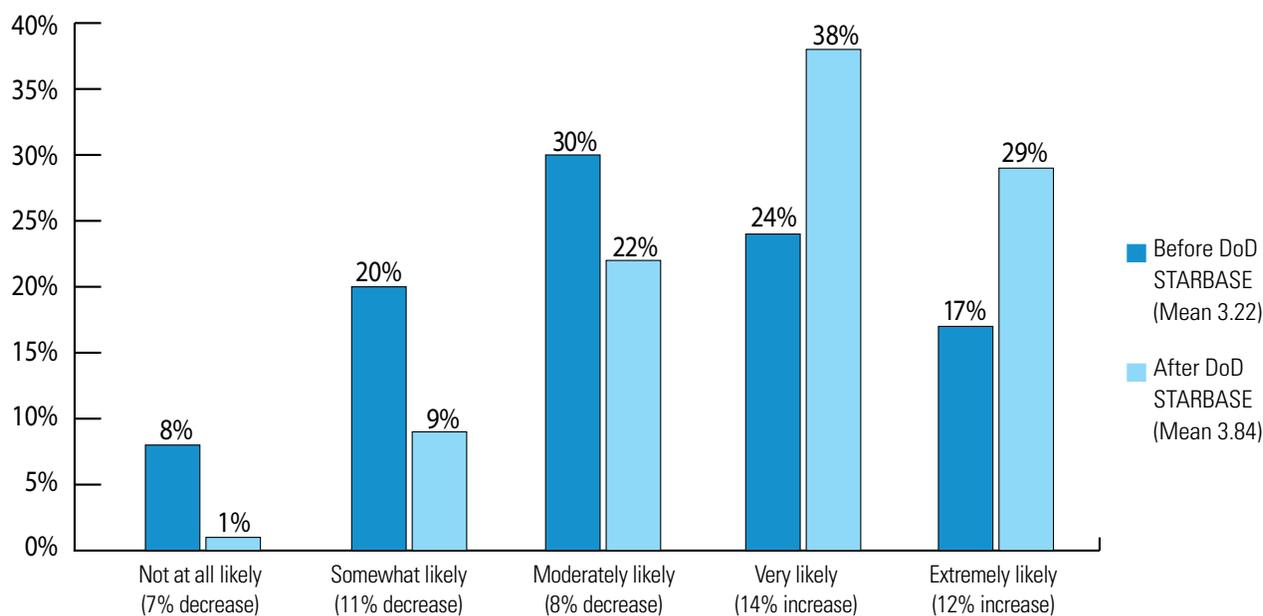
Table 44: Experience with a Military Base

Response	2015 (N=1,668)	
	Frequency	%
Never visited a military base before the current DoD STARBASE Program	589	25.7%
Yes, for prior DoD STARBASE programs only	383	14.3%
Yes, for activities not related to DoD STARBASE	827	36.0%
Yes, for DoD STARBASE and non-DoD STARBASE activities	442	19.3%
Other ²¹	110	4.8%

²¹The majority of the "Other" responses include having family members either on active duty 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.

Eighty-eight percent (2,019) of the teachers reported that they are more aware of career opportunities (both uniformed and non-uniformed civilian) within the Department of Defense because of their participation in the DoD STARBASE program. Teachers also indicated how likely they were to recommend DoD or the military as a career option both prior to and after their DoD STARBASE program. After the teachers participated in DoD STARBASE, 26 percent were more likely (Very or Extremely Likely) to recommend military career options than prior to their participation. A total of 67 percent of all teachers were Very likely (38 percent) or Extremely likely (29 percent) to recommend the military or DoD civilian careers after the program as compared to a total of only 41 percent before the program (24 percent and 17 percent, respectively). Figure 5 displays the change in favorability based on percentage of responses within each of the response categories.

Figure 5: How likely are you to recommend the DoD or the military as a career option to your students?

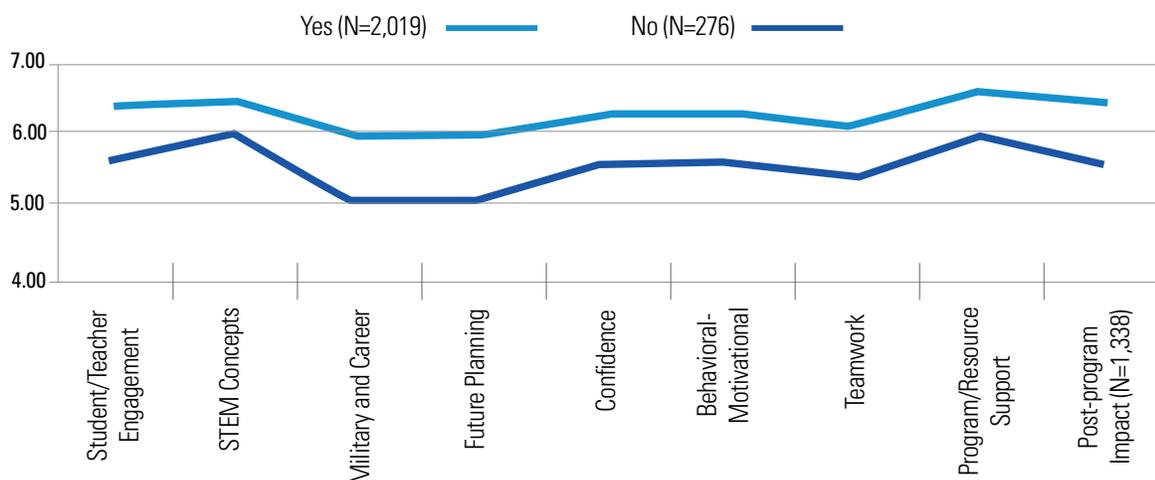


Additionally, the 88 percent that reported being more aware of uniformed and non-uniformed civilian career opportunities after the program also reported higher responses in all areas of measurement (Figure 6). Of particular interest is the significantly greater recognition of beneficial post-program impacts on students noticed by teachers with more than one year of DoD STARBASE experience (N= 1,338). The most meaningful differences (average difference >.80) occurred in the following student behaviors:

- Better school attendance.
- Better performance on standardized state assessments.
- Ability to link their experience to careers in both military and non-military positions.
- More interested in using computers for class-related learning activities.
- Asking more questions about technology.
- Improved cooperative learning in the classroom even after the program ended.

The average difference for this group (N=1,338) on the total post-program impact composite is also shown graphically in Figure 6.

Figure 6: Teacher Perceptions of Student Behavior Based on More Awareness of Department of Defense Career Opportunities after Attending DoD STARBASE



FACILITATING STEM AWARENESS IN STUDENTS

Teacher attitudes toward STEM awareness were measured by four items with a focus on interest in the STEM areas and two items specific to learning about science and math (Table 45). Similar to previous years, concepts related to science were rated higher than math. Specifically, students were more interested in science (6.54) compared to math (5.97) according to teacher perceptions and had improved understanding of science (6.69) compared to appreciation of how math can be applied (6.40). Even so, students' reported interest in and appreciation of math was greater in the last two years than in previous years, attaining the highest averaged ratings seen so far. Student interest in learning about science had a rebound this year after a slight dip in 2015.

Two items added in 2015 included interest in learning about technology and engineering. The current trend is toward more interest by students in learning about technology followed by science, engineering and math, based on teachers' ratings. Leveraging technology advancements and interest in technology is relevant when engaging students in other STEM awareness programs for math, science or engineering.

Table 45: Teacher Attitude Toward STEM Awareness

	2016
DoD STARBASE has helped to improve the students' understanding of science.	6.69
More interested in learning about technology.	6.55
DoD STARBASE has helped to improve students' appreciation of how math can be applied to a variety of situations.	6.40
More interested in learning about science.	6.54
More interested in learning about engineering.	6.26
More interested in learning about math.	5.97

Teachers are a great resource for identifying additional development activities that are best suited to their students' learning styles. Teachers provided their opinion on the best way to continue developing their students' interest in STEM-related activities. Nearly seventy-five percent indicated that the best way to continue interest is to promote an existing program (31 percent) or a new program (43 percent) in the school system (Table 46). The least likely ways to increase awareness in the teachers' view included promoting a new program at the national, state, or community level (16 percent) or through an existing community-based program (10 percent). These continue the trends seen in 2015, when this question was first posed, with a slightly greater emphasis now placed on promoting new school STEM programs and a corresponding lower priority on new national, state or local programs. The DoD STARBASE program provides a unique opportunity to students and teachers by utilizing the school system to access DoD/military personnel and civilian instructors with specialized training in STEM-related topics. By continuing to nurture its relationship with the teachers and the school system, the DoD STARBASE program can continue to support students' interest in STEM-related activities.

Table 46: Developing Interest in STEM-Related Activities

Best way to develop continuing interest in STEM-related activities	Frequency	Percent
Promoting a new program in the school system.	979	43%
An existing school-based program.	724	31%
Promoting a new program at the national, state, or community level.	364	16%
An existing community-based program.	228	10%

Teachers provided information regarding community programs, extra-curricular activities, and available resources and/or equipment within the school in order to promote student access and interest in STEM concepts as well (Table 47). Responses tended to vary by question but provide some insight into the different programs available both within the school system and in the community at large.

Resources and programs that promote STEM awareness and interest are limited. Seventy-two percent of the teachers report either no relevant (23 percent) or only a couple of relevant (49 percent) school or community programs that further develop students' STEM awareness beyond the DoD STARBASE program. When asked specifically about community extra-curricular STEM programs, 47 percent are not sure and 16 percent report no programs or activities that are grade-level appropriate for their students.

Table 47: STEM-Related School or Community Resources and Extra-Curricular Programs/Activities

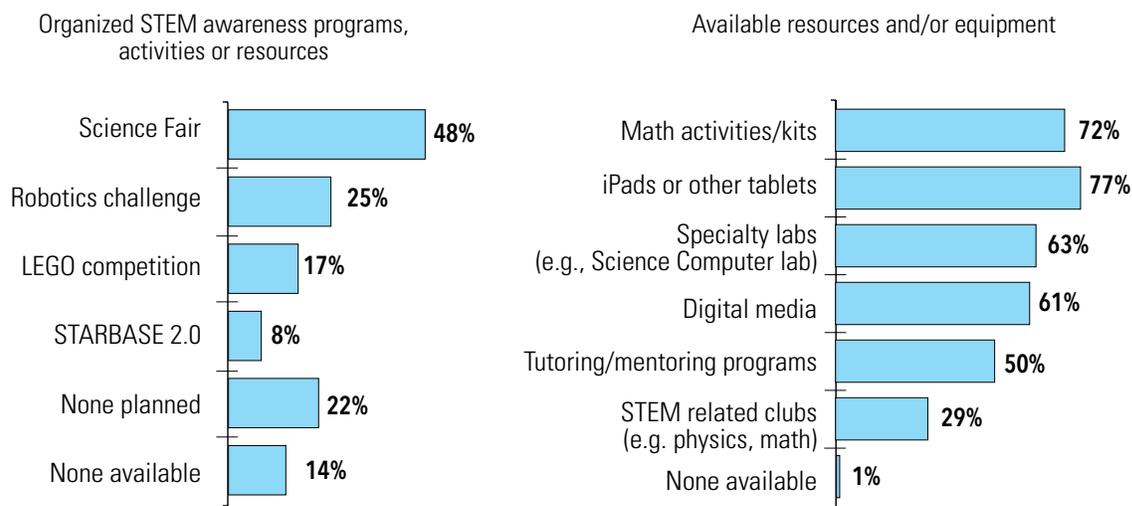
Other resources in the school or community to further develop my students' STEM awareness beyond DoD STARBASE include...	Does your community have extra-curricular programs and/or activities for stimulating STEM interest aimed at middle school aged students?
49% Only a couple of relevant programs	47% Not sure
23% No other relevant programs	37% Yes
15% Several relevant programs	16% No
12% Many relevant STEM awareness programs	

Teachers also identified specific STEM awareness programs, activities, resources and equipment available to students within the school system and the community at large. Thirty-six percent of the teachers indicate that either there are no available (14 percent) or no planned (22 percent) organized STEM awareness programs, activities or resources for their students after attending the DoD STARBASE program (Figure 7). Three hundred thirteen teachers wrote in other STEM programs or activities, and 129 teachers wrote in other resources or equipment.

- 64 percent identified an organized activity, program or other resource for their students after DoD STARBASE has ended (e.g., Science Fair, Robotics challenge).
- 99 percent report there are resources and/or equipment available in school for students to use (e.g., Math activities, Specialty labs).

These findings are similar to those obtained in 2015. Notably, reported availability of iPads and other tablets has surpassed that of math activities and kits, which also increased somewhat. This may signal a growing opportunity to develop interactive DoD STARBASE materials for ongoing STEM exposure as tablets become increasingly available to students in schools.

Figure 7: Organized STEM Programs and Available Resources for Students



"I love DoD STARBASE because it is all exclusive for all learners. I love that DoD STARBASE is hands-on and that the students are able to take so much away from the program because it is presented in everyday life."

— CARLEEN MELTON, EDUCATOR AT NORTH PLAINS ELEMENTARY SCHOOL, STARBASE NORTH DAKOTA

It is important that teachers and educators have post-DoD STARBASE programs available to continue to engage the students after the program has ended. Referring students to additional STEM-related programs or resources after DoD STARBASE is dependent upon availability and appropriateness to the student population. Ninety-five percent of the teachers plan to always (49 percent), often (33 percent), or sometimes (13 percent) refer students to additional STEM-related programs or resources after the DoD STARBASE program has ended (Table 48). The high percentage of teachers referring students suggests that the teachers understand the importance of continuing STEM-related interest beyond the classroom setting regardless of whether the program is supported through the school or community at large.

Table 48: Percent of Teachers Likely to Refer Students to STEM-Related Programs or Resources

I plan to refer students to additional STEM-related programs or resources after DoD STARBASE.	Frequency	Percent
Always	1,120	49%
Often	761	33%
Sometimes	296	13%
Once or twice	36	2%
Not at all	13	1%
Other responses*	70	3%

* Other responses included additional suggestions for more after school programs and willingness to refer if programs were available.

Drivers of Target Ratings

Stepwise multiple regression analyses were performed to determine the important drivers of key teacher attitudes and ratings about DoD STARBASE. The key teacher ratings selected this year focus on broad program impact and on students' STEM and career engagement attitudes. The first regression analysis evaluated the post-program impact based on student and teacher engagement attitudes. Post-program impact was a composite scale calculated using 10 items completed by teachers with more than one year of experience participating in the DoD STARBASE program. This composite scale was regressed using the core items administered to all teachers evaluating their attitudes in relation to the 32 engagement survey items.

The drivers for each regression are listed in order of magnitude and oftentimes provide a comprehensive listing for identifying actions that most influence program effectiveness. The drivers listed for the post-program Impact aggregate scale explain approximately 70 percent of the variance, or variability, across teachers in their perceptions of DoD STARBASE impact (as indicated by an R^2 value of .669). That is, these items predict individual teacher opinion about the program's impact on students with a high degree of efficiency. Thus, they provide a condensed model from which to tell how teachers feel about its value. The more drivers that are answered favorably or affirmatively, the more likely it is that a teacher holds a strongly positive viewpoint of the program impact. The results are consistent with the driver model of post-program Impact derived in 2015, with 54 percent overlap of the contributing teacher attitude items. This time, teacher perceptions of student cooperation, math interest and excitement about their futures, along with teacher interest in having more DoD STARBASE supplemental resources and enthusiasm for returning to DoD STARBASE next year are also important factors in determining positive opinions of DoD STARBASE impact.

Drivers of Post-Program Impact²² ($R^2 = .669$; $p < .05$)

- While attending DoD STARBASE, the students appear to focus more on their future potential.
- The DoD STARBASE experience has influenced me to become skilled in STEM instruction.
- DoD STARBASE has helped to improve students' appreciation of how math can be applied to a variety of situations.
- I prefer the supplemental resources DoD STARBASE provides to teachers over other similar resources.
- During DoD STARBASE, students have better school attendance.
- The students appear more willing to cooperate with each other.
- I look forward to bringing future classes to the DoD STARBASE program.
- The students appear more interested in learning about military careers.
- I would like more DoD STARBASE supplemental resources to take back to my classroom.
- The students seem more excited about their futures.
- I plan to incorporate DoD STARBASE teaching techniques into my daily classroom activities.
- The students appear more interested in learning about technology.
- The students appear more interested in learning about math.

Table 49 provides a summary of the regression analyses for key target ratings based on all attitudinal items within the Teacher Survey. The predictive models selected for analysis this year once again focus on students' attitudes about future career opportunities and their understanding of how STEM-related skills and abilities link to various career paths.

The models constructed this year are generally comparable to those developed for the same key target ratings in 2015. The overlap of contributing teacher attitudes from year to year is more moderate than for the Post-program Impact outcomes-based model described above, with an average of about one third of items shared in common for a given target model between this year's and last year's results.

This is not surprising since the models are predicting a single outcome rating, which is inherently more variable than a broader measure composed of multiple related outcomes. Nevertheless, the top few drivers listed in the summary of each target rating predictor model below tend largely to be the same ones as last year. This helps to solidify a core set of teacher perceptions of student behaviors and their own attitudes that could arguably serve as indicators of the influence DoD STARBASE exerts on forming student aspirations for their future STEM-related educational pursuits and vocational directions.

The DoD STARBASE program helps students understand their potential. Specifically, the regression analyses identified several areas that had the most impact across many of the target attitudes including, but not limited to, the following:

- Linking the students' experience to careers in both military and non-military positions.
- Helping students understand better how STEM skills/abilities fit job requirements for certain career fields.
- Helping students understand better that developing their current skills/abilities is necessary to have good future career choices.
- Providing information about military and non-military career opportunities.
- Creating excitement about their future potential and how to set educational and career goals.
- Reinforcing positive behaviors such as cooperating with each other during program activities.

²² The items making up this scale were not included in the regression analysis.

Table 49: Drivers of Key Target Ratings

Drivers of “Attending DoD STARBASE helps students link their experience to careers in both military and non-military positions” ($R^2 = .585$)

- Attending DoD STARBASE helps students understand better how STEM skills/abilities fit job requirements for certain career fields.
 - More interested in learning about military careers.
 - Attending DoD STARBASE helps students understand better that developing their current skills/abilities is necessary to have good future career choices.
 - Students who have attended DoD STARBASE seem to perform better on standardized state assessments.
 - More comfortable with military personnel.
 - More confident about what they can accomplish.
 - Students seem to have more questions about DoD and other non-military career opportunities.
 - After DoD STARBASE, students have better school attendance.
 - More excited about their futures.
 - Students seem to focus more on their future potential.
 - After DoD STARBASE attendance, there is increased participation in the science fair and other STEM-related challenge programs.
-

Drivers of “Attending DoD STARBASE helps students understand better how STEM skills/abilities fit job requirements for certain career fields” ($R^2 = .615^*$)

- Attending DoD STARBASE helps students understand better that developing their current skills/abilities is necessary to have good future career choices.
 - Attending DoD STARBASE helps students link their experience to careers in both military and non-military positions.
 - DoD STARBASE has helped to improve the students’ understanding of science.
 - More interested in learning about science.
 - The students talk about DoD STARBASE long after the program has ended.
 - More likely to encourage each other.
 - More excited about learning.
 - My school plans to participate in the DoD STARBASE program again next year.
 - I look forward to bringing future classes to the DoD STARBASE program.
 - I plan to incorporate DoD STARBASE teaching techniques into my daily classroom activities
-

Drivers of “Attending DoD STARBASE helps students understand better that developing their current skills/abilities is necessary to have good future career choices” ($R^2 = .634^*$)

- Attending DoD STARBASE helps students understand better how STEM skills/abilities fit job requirements for certain career fields.
- More ready to set future educational and career goals.
- Attending DoD STARBASE helps students link their experience to careers in both military and non-military positions.
- After attending DoD STARBASE, students have better school attendance.
- DoD STARBASE has helped to improve students’ appreciation of how math can be applied to a variety of situations.

Table 49: Drivers of Key Target Ratings, (cont.)

- DoD STARBASE has helped to improve the students' understanding of science.
- The students talk about DoD STARBASE long after the program has ended.
- More comfortable with military personnel.
- I plan to incorporate DoD STARBASE teaching techniques into my daily classroom activities.
- My school plans to participate in the DoD STARBASE program again next year.
- More interested in learning about engineering.
- Students are better able to focus on their future potential.
- After the DoD STARBASE program, the students ask more questions about technology.
- Have more questions about DoD and other non-military career opportunities.
- More excited about learning.
- More confident about what they can accomplish.

Drivers of "Students are more interested in learning about military careers" (R² = .581)

- To have more questions about DoD and other non-military career opportunities.
- More comfortable with military personnel.
- Attending DoD STARBASE helps students link their experience to careers in both military and non-military positions.
- More excited about their futures.
- After the DoD STARBASE program, the students ask more questions about technology.
- More comfortable making decisions.
- DoD STARBASE reinforces many positive behaviors I try to teach my students.
- More willing to cooperate with each other.
- The students enjoyed being on a military base.
- Better at working in groups.
- Better at following directions.

Drivers of "Students are more ready to set future educational and career goals" (R² = .629)

- Focus more on their future potential.
- More interested in learning about engineering.
- More excited about their futures.
- More likely to encourage each other.
- Attending DoD STARBASE helps students understand better that developing their current skills/abilities is necessary to have good future career choices.
- More goal oriented.
- Better at working in groups.
- Have more questions about DoD and other non-military career opportunities.
- After the DoD STARBASE program, the students ask more questions about technology.
- More excited about learning.

Table 49: Drivers of Key Target Ratings, (cont.)

Drivers of "Students seem to focus more on their future potential after DoD STARBASE" ($R^2 = .743^*$)
<ul style="list-style-type: none"> • More interested in learning about military careers. • Focus more on their future potential. • More comfortable making decisions. • More interested in learning about engineering. • More interested in learning about technology. • I prefer the supplemental resources DoD STARBASE provides to teachers over other similar resources. • More willing to cooperate with each other. • Better at working in groups. • The DoD STARBASE experience has influenced me to become skilled in STEM instruction.
Drivers of "Students seem to have more questions about DoD and other non-military career opportunities after DoD STARBASE" ($R^2 = .826^*$)
<ul style="list-style-type: none"> • More ready to set future educational and career goals. • More excited about their futures. • Have more questions about DoD and other non-military career opportunities. • Attending DoD STARBASE helps students understand better how STEM skills/abilities fit job requirements for certain career fields. • More goal oriented. • More interested in learning about engineering. • More interested in learning about science. • During DoD STARBASE students have better school attendance. • Attending DoD STARBASE helps students link their experience to careers in both military and non-military positions. • After DoD STARBASE attendance there is increased participation in the Science Fair and other STEM-related challenge programs. • Better at working in groups. • DoD STARBASE reinforces many positive behaviors I try to teach my students. • I plan to incorporate DoD STARBASE teaching techniques into my daily classroom activities. • More interested in learning about math. • More excited about learning.

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

CONCLUSIONS

The DoD STARBASE program continues to provide participating students with STEM awareness activities that support student achievement overall, and in STEM related concepts specifically. For some participating schools it is the primary STEM program that is available to students. The teachers report that participation in the Department of Defense program appears to create an excitement within the students about their careers and future potential that may not be available otherwise. Specifically, teachers with more than one year of experience with the DoD STARBASE program report that the students:²³

- Talk about DoD STARBASE long after the program ended (6.66).
- Understand better how STEM skills/abilities fit job requirements for certain career fields (6.62).
- Understand better that developing their current skills/abilities is necessary to have good future career choices (6.57).
- Link their experience to careers in both military and non-military positions (6.34).

Students are able to participate in activities with DoD sponsored instructors that share specialized training in STEM concepts allowing the students to link the concepts to “real-world” applications. Teachers value the DoD STARBASE program to provide awareness of and hands on experience in STEM concepts that can reinforce positive attitudes and behaviors. Additionally, the program emphasizes the importance of setting goals and looking forward to career opportunities often overlooked as typical career paths for students in elementary grades. Finally, the DoD STARBASE program provides teachers with additional resources and support. This is particularly important for the teachers that may not have the background or formal education and training in STEM fields (only 17 percent of the teachers indicated having a major or minor college degree in a STEM-related field).

²³ Likert scale based on response options from 1 (Disagree) to 7 (Agree).



“DoD STARBASE is a rewarding program that provides a tremendous opportunity for the developing youth in our community to participate in a unique hands-on learning environment. At the same time, it provides a platform to foster a deeper relationship between our military members and the citizens they serve.”

— JEFF MATTHEWS, SFC US ARMY NG SDARNG, STARBASE RAPID CITY

CONSIDERATIONS FOR THE **2017 Program Year**

The assessment process captures valuable information from each of key participant groups such as classroom teachers, school administrators, military base personnel, base commanders, DoD STARBASE staff, students, volunteers, and interested observers of the program. This information is documented through surveys, reports on operational activities, after-action investigations, compliance activities, academy visitations reports, reviews of academy documents, observations of program activity, and special ad-hoc studies on newly established initiatives. The following proposed list of “considerations” has been developed based on that input. The objective of this section is to guide planned and purposeful improvement in every dimension of the DoD STARBASE program. The key “considerations” for the 2017 program year include:

OUTREACH

- Produce and distribute annual communication packages to Directors.
 - Directors will use this information when meeting with local, state and national education and political representatives.
 - Provide communication package to the STARBASE Caucus and OASD leadership.

PROGRAM OPERATIONS

Provide communication and training on data collection techniques to ensure accurate data for the annual report.

- Provide up-to-date communications to programs through quarterly Director telecoms with OASD/M&RA and The Spectrum Group.
- Re-establish periodic face-to-face conferences for DoD STARBASE Directors and Staff. This is critical for the growth and development of new Directors hired since the last conference, almost five years ago.
- Increase all facets of communication from OASD/M&RA to field organizations.
- Develop and publish new DoDI.
- Update DoDSTARBASE.org to a responsive website for use on multiple devices. The update should start with defined website objectives and include streamlining pages to meet determined objectives.

CURRICULUM

- Continue to refresh and expand the curriculum of the DoD STARBASE program to ensure that it remains cutting-edge and consistent with a premiere STEM enrichment program. Recent updates to the Standards, Objectives, and Approved Lesson Plans (SOA) have provided additional opportunities to incorporate engaging hands-on, minds-on lessons for DoD STARBASE participants, particularly in the field of Energy.
- Provide opportunities for DoD STARBASE Directors and Instructors to meet and review/collaborate on the advancements that have been implemented in the DoD STARBASE curriculum.
- Conduct a professional development conference to give DoD STARBASE instructors the opportunity to work together and to familiarize instructors with new curriculum content in a group setting.

DOD STARBASE 2.0

- Rewrite, simplify and publish a new DoD STARBASE 2.0 Guidebook.
- Provide sites funding to hire a dedicated 2.0 Coordinator.
- Evaluate the need to continue DoD STARBASE 2.0 as a “mentoring” program or determine if the program objectives may be met through a DoD STARBASE extension program on or off site of the DoD STARBASE location.
- Supplement local mentor recruitment through use of established volunteer programs such as “VolunteerMatch.com.”
- Allow vetted high school students to function as DoD STARBASE 2.0 mentors to further increase the mentor pool.
- Adjust meeting hour requirements to allow for shorter 2.0 session duration to serve more students. (Example, run an eight week, 16-hour program each semester – one in Fall, one in Spring.) This could also help with mentor participation and retention as commitment is of shorter duration.
- Establish solid partnerships with local schools or industry to create a 5th-12th grade STEM pipeline that starts with DoD STARBASE, continues with DoD STARBASE 2.0 and moves on to high school internships and/or participation in other STEM curriculum.
- Continue to encourage individual 2.0 programs to publicize local initiatives to gain additional support for the program.

“DoD STARBASE is an incredible program. My son came home with a revived love and interest for science and engineering. All he asked for Christmas this year are STEM toys. He hasn’t been this involved and interested in a long time. Thank you.”

– TORI JOHNSON, PARENT OF STUDENT AT HUTTO ELEMENTARY ATTENDING TEXAS STARBASE - AUSTIN





“The opportunities to work cooperatively in school on regular academic topics seem to have shrunk in recent years, and DoD STARBASE provides a welcome exception. The best activities are the ones that let my students argue over what to do, and then arrive at a consensus. Designing seat belts and programming robots are probably my favorite moments from that perspective.”

— FRANCENE OUELLETTE “OCELOT,” EDUCATOR AT TINKER ELEMENTARY SCHOOL,
ATTENDING STARBASE CONNECTICUT - WATERBURY

Appendices



ASSESSMENT
2016



Appendix A: Definitions for Statistical Analyses within this Report

The following section provides a list of the statistical formulas that were used to calculate the data presented in this report.

1. Mean – Average value of a variable

$$\bar{X} = \sum X / N$$

\bar{x} = the sample mean; \bar{x} is generally represented by a capital 'X' with a bar or line over the top

$\sum X$ = the sum of all values of X

N = the sample size

2. Standard deviation – Measure of the average deviation of each score from the mean

$$s = \left[\frac{\sum (x_i - \bar{x})^2}{n-1} \right]^{1/2}$$

n = the sample size.

3. t-test – Tests the difference between two means

$$t = \frac{\bar{X}_1 - \bar{X}_2}{s_{\bar{X}_1 - \bar{X}_2}}$$

$s_{\bar{X}_1 - \bar{X}_2}$ = the standard deviation of the difference between the two variables

4. F-test – Tests the differences between multiple group means

$$F = \frac{MS_b}{MS_w}$$

$$MS_b = \frac{\sum n_k (\bar{X}_k - \bar{X})^2}{K - 1}$$

$$MS_w = \frac{\sum \sum (X_{ik} - \bar{X}_k)^2}{N - K}$$

X_{ik} = the value of the variable obtained by the i th person in the k th group

\bar{X}_k = the mean of the k th group

\bar{X} = the grand mean overall of all groups

n_k = the size of the k th group

N = the total sample size of all groups

K = the total number of groups

5. Pearson's Correlation – Determines the relationship between two variables

$$r^2 = \frac{[\sum Y_1 * Y_2 - \sum Y_1 * \sum Y_2 / N] / (N-1)}{s_{y_1} s_{y_2}}$$

r = the statistical relationship of two variables

Y = the values of the variables

s = the standard deviation of the variables

6. Multiple Correlation (R) – Represents the correlation or statistical relationship between a set of variables and a single variable

7. Regression Equation – Determines what combination of variables can best predict the outcome for the dependent variable

$$Y = a + b_1 * X_1 + b_2 * X_2 + \dots + b_p * X_p$$

Y = the predicted value of the dependent variable.

a = the intercept value of Y when X=0.

b = the regression coefficients for the predictors.

X = the value of the predictor variable

Appendix B: PCA Analysis of Attitude Dimensions

Items were assigned to Attitude Dimensions based on their highest loadings on the seven factors shown below.

Factors are listed in order of contribution to the results.

1. Loadings of Attitude Items on Seven Factors, 2015

2015							
Attitude Items	Future Planning	Science Confidence	Program Evaluation	STEM Behavior/Motivation	Military Setting Endorse	STEM Concept Awareness	Math Confidence
I would take engineering classes if offered.	0.736						
I am interested in being a scientist or engineer.	0.723						
I like engineering.	0.692						
I want to learn more about engineering.	0.675						
When I finish school, I would like to get a job where I could use STEM.	0.628			0.421			
I would like a job in a science-related area.	0.586	0.5					
I enjoy learning about STEM topics.	0.57						
STEM jobs are exciting.	0.565			0.408			
I like science.		0.781					
I am good at science.		0.768					
Learning about science is easy for me.		0.754					
I would like to take more science classes.	0.413	0.67					
I would like to join a science club at my school.	0.397	0.629					
DoD STARBASE is boring. (Reversed Scored)			0.761				
DoD STARBASE Instructors made learning about STEM topics fun.			0.738				
I would tell my friends to come to DoD STARBASE.			0.724				
At DoD STARBASE, I learned a lot of things that I can use			0.61				
I do not think DoD STARBASE will help me do better in school. (Reversed Scored)			0.516				

Appendix B: PCA Analysis of Attitude Dimensions, (cont.)

2015							
Attitude Items	Future Planning	Science Confidence	Program Evaluation	STEM Behavior/Motivation	Military Setting Endorse	STEM Concept Awareness	Math Confidence
Most people use STEM skills every day.				0.609			
I think learning about STEM topics will help me in my daily life.	0.38			0.605			
I am aware of some STEM careers.	0.342			0.602			
Scientists work on things that will make life better.				0.554			
Engineers help solve challenging problems.				0.527			
Military bases are exciting.					0.731		
A military base is a good place to work.					0.708		
People who work on a military base do lots of different things.				0.365	0.648		
People who work for the military use technology in their jobs.				0.383	0.586		
I have enjoyed coming to a military base.			0.514		0.538		
I like technology.						0.784	
I want to learn more about technology.	0.358					0.697	
I like figuring out how to use technology gear (tablets, smart phones, etc.).						0.665	
I would take classes on technology if available.	0.535					0.602	
I like math.							0.901
I would like to take more math classes.							0.806
I am good at math.							0.775
I need to do well in math to get the kind of job I want.							0.391

In the interest of simplicity, loadings below .34 are not shown.

Appendix B: PCA Analysis of Attitude Dimensions, (cont.)

2. Loadings of Attitude Items on Seven Factors, 2016

Attitude Items	2016						
	Future Planning	Science Confidence	Program Evaluation	STEM Behavior/Motivation	Military Setting Endorse	STEM Concept Awareness	Math Confidence
I am interested in being a scientist or engineer.	0.736						
I like engineering.	0.723						
I want to learn more about engineering.	0.742						
When I finish school, I would like to get a job where I could use STEM (Science, Technology, Engineering, and Math).	0.587			0.374			
I enjoy learning about STEM (Science, Technology, Engineering, and Math) topics.	0.496		0.41				
STEM (Science, Technology, Engineering, and Math) jobs are exciting.	0.561						
I like science.		0.777					
I am good at science.		0.795					
Learning about science is easy for me.		0.758					
I would like to learn more about science.		0.704					
I would join a science club at my school if it was offered.	0.401	0.594					
DoD STARBASE is boring. (Reversed Scored)			0.791				
DoD STARBASE Instructors made learning about STEM (Science, Technology, Engineering, and Math) topics fun.			0.743				
I will tell others about my DoD STARBASE experience.			0.638				
At DoD STARBASE, I learned a lot of things that I can use.			0.663				
I do not think DoD STARBASE will help me do better in school. (Reversed Scored)			0.642				

Appendix B: PCA Analysis of Attitude Dimensions, (cont.)

Attitude Items	2016						
	Future Planning	Science Confidence	Program Evaluation	STEM Behavior/Motivation	Military Setting Endorse	STEM Concept Awareness	Math Confidence
Most people use STEM (Science, Technology, Engineering, and Math) skills every day.				0.726			
I think learning about STEM (Science, Technology, Engineering, and Math) topics will help me in my daily life.				0.559			
I am aware of some STEM, (Science, Technology, Engineering, and Math) jobs.				0.551			
Scientists work on things that will make life better.				0.465			
Engineers help solve challenging problems.					0.495		
Military bases are exciting.			0.426		0.564		
A military base is a good place to work.					0.613		
People who work for the military do lots of different things.				0.355	0.58		
People who work for the military use technology in their jobs.				0.446	0.562		
I have enjoyed coming to a military location.			0.615				
My teacher is excited about science.*					0.553		
My teacher thinks technology is important.*					0.538		
I like technology.						0.801	
I want to learn more about technology.						0.735	
I like figuring out how to use technology (computers, tablets, smart phones, etc.).						0.702	
I like math.							0.904
I would like to learn more about math.							0.860
I am good at math.							0.809
I must do well in math to get the kind of job I want.							0.466

*New items were not used on the factor to maximize similarity to 2015 results

Appendix B: PCA Analysis of Attitude Dimensions, (cont.)

2. Correlations Between Loadings of 33 Attitude Items on Seven Factors, 2015 vs. 2016.

Attitude Items	2016						
	Future Planning	Science Confidence	Program Evaluation	STEM Behavior/Motivation	Military Setting Endorse	STEM Concept Awareness	Math Confidence
2015 Future Planning	.957**	.152	-.168	.051	-.249	.066	-.121
2015 Science Confidence	.039	.983**	-.278	-.130	-.201	-.070	-.187
2015 Program Evaluation	-.184	-.192	.940**	-.206	-.245	-.132	-.215
2015 STEM Behavior Motivation	-.046	-.091	-.293	.895**	.146	-.157	-.245
2015 Military Setting Endorse	-.095	-.392*	.091	-.067	.849**	-.182	-.249
2015 STEM Concept Awareness	-.042	-.066	-.249	-.088	-.060	.892**	-.166
2015 Math Confidence	-.154	-.159	-.263	-.261	-.183	-.126	.975**

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Appendix C: Pre/Post Knowledge Item Mean Scores and Percent Correct

This Table presents the gap difference for each item based on pre- to post-program percentage correct. The percentage of students answering an item correctly significantly increased for all items from pre- to post-program. Students who participate in DoD STARBASE come with a basic understanding of the concepts taught in the program, as evidenced by the percentage of students who answer certain items correctly pre-program. For example, slightly less than half (49 percent) of the incoming students responded correctly to three questions about the elements of the engineering design process. The DoD STARBASE curriculum helped to boost that to nearly two-thirds (65 percent), an increase of 16 percent. 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 6 percent to 67 percent, resulting in a 61 percent increase in those responding correctly pre- to post-program. Across all items, the average increase in correct responding from pre- to post-program in 2016 was 25 percent, comparable to the 26 percent seen in 2015 and greater than the 19 percent recorded in 2014.

Appendix D: DoD STARBASE Locations by Military Branch and Region, (cont.)**DoD STARBASE Locations Across Geographic Regions, 2016**

EAST	
Connecticut	STARBASE Windsor Locks
Connecticut	STARBASE Waterbury
Massachusetts	STARBASE Hanscom
Vermont	STARBASE Vermont - Rutland
Vermont	STARBASE Vermont - South Burlington

SOUTH EAST	
Alabama	STARBASE Maxwell
Florida	STARBASE Florida
Georgia	Peach State STARBASE
Georgia	STARBASE Robins
Georgia	STARBASE Savannah
North Carolina	STARBASE Charlotte
North Carolina	STARBASE Ft. Fisher
South Carolina	MCAS Beaufort
South Carolina	STARBASE Swamp Fox
Virginia	Winchester STARBASE Academy
West Virginia	STARBASE Martinsburg
West Virginia	STARBASE Academy

MIDWEST	
Indiana	STARBASE Indiana
Indiana	STARBASE Indianapolis
Indiana	STARBASE South Bend
Kansas	STARBASE Kansas City
Kansas	STARBASE Manhattan
Kansas	STARBASE Salina
Kansas	STARBASE Topeka
Kansas	STARBASE Wichita
Michigan	STARBASE Alpena
Michigan	STARBASE Battle Creek
Michigan	STARBASE One
Minnesota	STARBASE Minnesota
North Dakota	STARBASE North Dakota
Ohio	STARBASE Wright - Patterson
South Dakota	STARBASE NOVA - Courage
South Dakota	STARBASE NOVA - Honor
South Dakota	STARBASE Rapid City
South Dakota	STARBASE Sioux Falls
Wisconsin	STARBASE Wisconsin

SOUTH	
Arizona	STARBASE Arizona
Louisiana	STARBASE Jackson Barracks
Louisiana	STARBASE Louisiana
Louisiana	Pelican State STARBASE
Louisiana	STARBASE Baton Rouge
New Mexico	New Mexico STARBASE La Luz
Oklahoma	STARBASE Oklahoma - Burns Flat
Oklahoma	STARBASE Oklahoma - Fort Sill
Oklahoma	STARBASE Oklahoma - Oklahoma City
Oklahoma	STARBASE Oklahoma - Tulsa
Puerto Rico	STARBASE Puerto Rico
Texas	STARBASE Kelly
Texas	Texas STARBASE Austin
Texas	Texas STARBASE Houston

WEST	
California	STARBASE Los Alamitos
California	STARBASE Sacramento
Colorado	STARBASE Peterson AFB
Hawaii	STARBASE Hawaii, Big Island
Montana	STARBASE Fort Harrison
Montana	STARBASE Great Falls
Nevada	STARBASE Nellis
Oregon	STARBASE Kingsley
Oregon	STARBASE Portland
Utah	STARBASE Hill Screaming Eagles
Wyoming	Wyoming STARBASE Academy

Appendix E: Mean Ratings by Measurement Area

			2016 Mean	Std. Deviation	N
STEM Concepts	Cronbach's Alpha Reliability .886	6 Items	6.42	.699	2,295
While attending DoD STARBASE, the students appear...					
... more interested in learning about technology.			6.55	.789	2,295
... more interested in learning about science.			6.54	.775	2,295
... more interested in learning about engineering.			6.26	.981	2,295
... more interested in learning about math.			5.97	1.201	2,295
DoD STARBASE has helped to improve the students' understanding of science.			6.69	.673	2,295
DoD STARBASE has helped to improve students' appreciation of how math can be applied to a variety of situations.			6.49	.850	2,295
Confidence	Cronbach's Alpha Reliability .886	3 Items	6.17	.861	2,295
While attending DoD STARBASE, the students appear...					
... more willing to try new things.			6.44	.846	2,295
... more confident about what they can accomplish.			6.24	.957	2,295
... more comfortable making decisions.			5.83	1.098	2,295
Behavioral/Motivational	Cronbach's Alpha Reliability .811	5 items	6.18	.823	2,295
While attending DoD STARBASE, the students appear...					
... more excited about learning.			6.33	.919	2,295
... better at following directions.			5.69	1.268	2,295
DoD STARBASE reinforces many positive behaviors I try to teach my students.			6.63	.824	2,295
During DoD STARBASE, students have better school attendance.			6.15	1.250	2,295
The DoD STARBASE experience has influenced me to become skilled in STEM instruction.			6.11	1.124	2,295
Teamwork	Cronbach's Alpha Reliability .916	3 items	6.05	1.991	2,295
While attending DoD STARBASE, the students appear...					
... more willing to cooperate with each other.			6.08	1.111	2,295
... better at working in groups.			6.03	1.111	2,295
... more likely to encourage each other.			6.08	1.036	2,295
Future Planning	Cronbach's Alpha Reliability .922	4 items	5.87	1.030	2,295
While attending DoD STARBASE, the students appear...					
... more excited about their futures.			5.94	1.119	2,295
... more ready to set future educational and career goals.			5.91	1.131	2,295
... more goal oriented.			5.81	1.179	2,295
... to focus more on their future potential.			5.83	1.145	2,295

Appendix E: Mean Ratings by Measurement Area, (cont.)

			2016 Mean	Std. Deviation	N
Military and Career	Cronbach's Alpha Reliability .752	5 items	5.84	.873	2,295
While attending DoD STARBASE, the students appear.....					
... more comfortable with military personnel.			5.84	1.260	2,295
... to have more questions about DoD and other non-military career opportunities.			5.66	1.310	2,295
... more interested in learning about military careers.			5.65	1.284	2,295
The students enjoyed being on a military base.			6.74	.668	2,295
Because of my participation in DoD STARBASE, I am more comfortable with military personnel.			5.24	1.460	2,295
Program/Resources Support	Cronbach's Alpha Reliability .775	7 items	6.44	.655	2,295
My school plans to participate in the DoD STARBASE program again next year.			6.92	.569	2,295
I look forward to bringing future classes to the DoD STARBASE program.			6.82	.624	2,295
Parents are delighted that their children are participating in DoD STARBASE.			6.49	.928	2,295
I would like more DoD STARBASE supplemental resources to take back to my classroom.			6.42	1.088	2,295
My principal is a strong advocate of DoD STARBASE.			6.30	1.118	2,295
I plan to incorporate DoD STARBASE teaching techniques into my daily classroom activities.			6.20	1.130	2,295
I prefer the supplemental resources DoD STARBASE provides to teachers over other similar resources.			5.90	1.296	2,295
Post-program Impact	Cronbach's Alpha Reliability .880	10 items	6.34	.806	1,338
The students talk about DoD STARBASE long after the program has ended.			6.66	.740	1,338
Attending DoD STARBASE helps students understand better how STEM skills/abilities fit job requirements for certain career fields.			6.56	.857	1,338
Attending DoD STARBASE helps students understand better that developing their current skills/abilities is necessary to have good future career choices.			6.57	.848	1,338
Attending DoD STARBASE helps students link their experience to careers in both military and non-military positions.			6.34	1.075	1,338
After DoD STARBASE, students are more interested in using computers for class-related learning activities.			6.49	1.136	1,338
DoD STARBASE helped to improve cooperative learning in the classroom even after the program ended.			6.17	1.059	1,338
After the DoD STARBASE program, the students ask more questions about technology.			6.15	1.084	1,338
Students that have attended DoD STARBASE seem to perform better on standardized state assessments.			6.15	1.447	1,338
After DoD STARBASE attendance, there is increased participation in the Science Fair and other STEM-related challenge programs (e.g., FIRST LEGO League, Odyssey of the Mind, Team America Rocket Competition, etc.).			6.38	1.487	1,338
After DoD STARBASE, students have better school attendance.			5.83	1.586	1,338

Appendix F: Expressed Attitudinal Differences by Gender

Gender	Pre-test Mean	Attitude	Gender	Post-test Mean	Post-Pre Gap
Boys	6.31	STEM Concepts	Boys	6.35	0.05
Girls	6.06		Girls	6.06	0.00
Boys	6.19	I want to learn more about technology.	Boys	6.19	0.01
Girls	5.83		Girls	5.76	-0.07
Boys	6.36	I like technology.	Boys	6.44	0.09
Girls	6.06		Girls	6.17	0.10
Boys	6.37	I like figuring out how to use technology (computers, tablets, smart phones, etc.).	Boys	6.43	0.07
Girls	6.29		Girls	6.26	-0.02
Boys	5.34	Future Planning	Boys	5.59	0.25
Girls	4.99		Girls	5.34	0.35
Boys	4.83	I am interested in being a scientist or engineer.	Boys	5.02	0.19
Girls	4.07		Girls	4.40	0.34
Boys	5.52	STEM (Science, Technology, Engineering, and Math) jobs are exciting.	Boys	5.82	0.30
Girls	5.45		Girls	5.74	0.29
Boys	5.55	I like engineering.	Boys	5.85	0.30
Girls	4.83		Girls	5.43	0.59
Boys	5.64	I want to learn more about engineering.	Boys	5.80	0.16
Girls	5.11		Girls	5.41	0.30
Boys	5.50	I enjoy learning about STEM (Science, Technology, Engineering, and Math) topics	Boys	5.83	0.33
Girls	5.57		Girls	5.85	0.28
Boys	5.01	When I finish school, I would like to get a job where I could use STEM (Science, Technology, Engineering, and Math).	Boys	5.26	0.24
Girls	4.93		Girls	5.21	0.28
Boys	5.23	Science Confidence	Boys	5.36	0.13
Girls	5.27		Girls	5.36	0.09
Boys	5.19	I am good at science.	Boys	5.46	0.27
Girls	5.15		Girls	5.43	0.28
Boys	4.95	Learning about science is easy for me.	Boys	5.31	0.36
Girls	4.96		Girls	5.23	0.27
Boys	4.52	I would join a science club at my school if it was offered.	Boys	4.48	-0.04
Girls	4.68		Girls	4.64	-0.04
Boys	5.68	I like science.	Boys	5.76	0.08
Girls	5.72		Girls	5.73	0.01
Boys	5.85	I would like to learn more about science.	Boys	5.84	-0.01
Girls	5.89		Girls	5.78	-0.10

* New Items, were not included in Attitude dimensions

Appendix F: Expressed Attitudinal Differences by Gender, (cont.)

Gender	Pre-test Mean	Attitude	Gender	Post-test Mean	Post-Pre Gap
Boys	5.49	Math Confidence	Boys	5.54	0.05
Girls	5.36		Girls	5.40	0.04
Boys	5.53	I am good at math.	Boys	5.64	0.12
Girls	5.28		Girls	5.43	0.15
Boys	5.53	I would like to learn more about math.	Boys	5.51	-0.02
Girls	5.43		Girls	5.43	0.00
Boys	5.32	I like math.	Boys	5.36	0.04
Girls	5.23		Girls	5.19	-0.04
Boys	5.59	I must do well in math to get the kind of job I want.	Boys	5.65	0.05
Girls	5.52		Girls	5.54	0.02
Boys	5.65	Behavior and Motivation	Boys	5.99	0.34
Girls	5.70		Girls	6.06	0.36
Boys	5.53	Engineers help solve challenging problems.	Boys	6.02	0.48
Girls	5.47		Girls	5.98	0.51
Boys	5.28	I am aware of some STEM (Science, Technology, Engineering, and Math) jobs.	Boys	5.87	0.59
Girls	5.25		Girls	5.98	0.73
Boys	5.67	Most people use STEM (Science, Technology, Engineering, and Math) skills every day.	Boys	6.10	0.44
Girls	5.87		Girls	6.23	0.36
Boys	5.84	I think learning about STEM (Science, Technology, Engineering, and Math) topics will help me in my daily life.	Boys	5.91	0.07
Girls	5.96		Girls	6.02	0.06
Boys	5.94	Scientists work on things that will make life better.	Boys	6.08	0.14
Girls	5.97		Girls	6.09	0.12
Boys	5.95	Military Evaluation	Boys	6.11	0.15
Girls	5.87		Girls	6.05	0.19
Boys	6.16	People who work for the military do lots of different things.	Boys	6.28	0.12
Girls	6.29		Girls	6.31	0.03
Boys	5.89	People who work for the military use technology in their jobs.	Boys	6.16	0.27
Girls	5.66		Girls	5.92	0.26
Boys	6.11	Military bases are exciting.	Boys	6.16	0.05
Girls	5.82		Girls	5.98	0.16
Boys	5.34	A military base is a good place to work.	Boys	5.54	0.20
Girls	5.37		Girls	5.60	0.23
Boys	6.31	I will enjoy/have enjoyed coming to a military location.	Boys	6.40	0.09
Girls	6.21		Girls	6.46	0.25

* New Items, were not included in Attitude dimensions

Appendix F: Expressed Attitudinal Differences by Gender, (cont.)

Gender	Pre-test Mean	Attitude	Gender	Post-test Mean	Post-Pre Gap
Boys		General Program Evaluation	Boys	6.18	
Girls			Girls	6.31	
Boys	6.42	I do not think DoD STARBASE will help me do better in school. (Reversed Scored)	Boys	6.31	-0.12
Girls	6.41		Girls	6.41	0.00
Boys		DoD STARBASE Instructors made learning about STEM (Science, Technology, Engineering, and Math) topics fun.	Boys	6.24	
Girls			Girls	6.31	
Boys		DoD STARBASE is boring. (Reversed Scored)	Boys	6.22	
Girls			Girls	6.30	
Boys		At DoD STARBASE, I learned a lot of things that I can use.	Boys	6.35	
Girls			Girls	6.42	
Boys		I will tell others about my DoD STARBASE experience.	Boys	5.89	
Girls			Girls	6.25	
Boys	5.39	My teacher is excited about science.*	Boys	5.34	
Girls	5.69		Girls	5.57	
Boys	5.17	My teacher thinks technology is important.*	Boys	5.31	
Girls	5.22		Girls	5.26	

**New Items, were not included in Attitude dimensions*

Appendix G: Intercorrelations Among Student Characteristics and Attitude Dimensions

	Gender	Grade	Age	I heard about DoD STARBASE before I knew I was coming here	I know someone that went through DoD STARBASE before me	I have met military people before coming to DoD STARBASE
Gender	1	-.006	-.098**	-.030	-.006	-.059*
Grade	-.006	1	.362**	.082**	.121**	-.039
Age	-.098**	.362**	1	.053*	.035	-.007
I heard about DoD STARBASE before I knew I was coming here	-.030	.082**	.053*	1	.441**	.045
I know someone that went through DoD STARBASE before me	-.006	.121**	.035	.441**	1	.072**
I have met military people before coming to DoD STARBASE	-.059*	-.039	-.007	.045	.072**	1
Military Attitudes	.007	.041	.030	.088**	.114**	.100**
Attitudes Total (post)	-.037	-.012	-.016	.051	.085**	.069**
STEM Concepts (post)	-.138**	-.002	-.045	-.027	-.035	.054*
Future Planning (post)	-.099**	-.076**	-.029	.028	.057*	.059*
Science Confid. (post)	-.001	-.031	-.012	.015	.072**	.067*
Math Confidence (post)	-.048	.043	.032	.014	.034	-.029
Behavior-Motive (post)	.036	-.031	-.042	.048	.063*	.072**
Military Base Endor (post)	-.029	.036	.024	.096**	.110**	.118**
Overall Evaluation (post)	.068**	.011	-.060*	.075**	.090**	.002
Knowledge Total (post)	-.061*	-.035	-.071**	.072**	.031	.083**
Chemistry (post)	-.049	-.090**	-.090**	.047	-.008	.052*
Engineering (post)	-.036	-.001	-.030	.006	.001	.041
Physics (post)	-.040	-.048	-.058*	.068**	.038	.015
Technology (post)	-.076**	-.005	-.047	.047	.042	.104**
Math (post)	-.015	.035	-.017	.063*	.026	.049
STEM Awareness (post)	.016	-.027	.005	.030	.042	.036
STEM Positions (post)	.058*	-.084**	-.057*	.063*	.085**	.093**

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Appendix G: Intercorrelations Among Student Characteristics and Attitude Dimensions (cont.)

	Military Attitudes	Attitudes Total	STEM Concepts	Future Planning	Science Confidence	Math Confidence
Gender	.007	-.039	-.138**	-.099**	-.001	-.048
Grade	.041	-.012	-.002	-.076**	-.031	.043
Age	.030	-.015	-.045	-.029	-.012	.032
I heard about DoD STARBASE before I knew I was coming here	.088**	.052*	-.027	.028	.015	.014
I know someone that went through DoD STARBASE before me	.114**	.085**	-.035	.057*	.072**	.034
I have met military people before coming to DoD STARBASE	.100**	.072**	.054*	.059*	.067*	-.029
Military Attitudes	1	.622**	.287**	.440**	.317**	.239**
Attitudes Total (post)	.623**	1	.597**	.853**	.725**	.579**
STEM Concepts (post)	.287**	.597**	1	.520**	.404**	.266**
Future Planning (post)	.440**	.851**	.520**	1	.580**	.396**
Science Confid. (post)	.317**	.724**	.404**	.580**	1	.275**
Math Confidence (post)	.239**	.578**	.266**	.396**	.275**	1
Behavior-Motive (post)	.437**	.747**	.378**	.603**	.456**	.306**
Military Base Endor (post)	.917**	.663**	.304**	.459**	.338**	.246**
Overall Evaluation (post)	.475**	.648**	.273**	.469**	.337**	.248**
Knowledge Total (post)	.068*	.188**	.139**	.168**	.159**	.104**
Chemistry (post)	.073**	.179**	.141**	.155**	.168**	.065*
Engineering (post)	.005	.073**	.061*	.077**	.066*	.005
Physics (post)	.018	.067*	.040	.078**	.080**	.025
Technology (post)	.053*	.097**	.089**	.089**	.038	.068**
Math (post)	.053*	.155**	.089**	.121**	.133**	.147**
STEM Awareness (post)	.033	.078**	.063*	.067*	.057*	.042
STEM Positions (post)	.084**	.147**	.034	.146**	.092**	.054*

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Appendix G: Intercorrelations Among Student Characteristics and Attitude Dimensions (cont.)

	Behavior Motive	Military Bases	Overall Evaluation	Knowledge Total	Chemistry	Engineering
Gender	.036	-.029	.057*	-.061*	-.049	-.036
Grade	-.031	.036	.011	-.035	-.090**	-.001
Age	-.042	.024	-.055*	-.071**	-.090**	-.030
I heard about DoD STARBASE before I knew I was coming here	.048	.096**	.082**	.072**	.047	.006
I know someone that went through DoD STARBASE before me	.063*	.110**	.087**	.031	-.008	.001
I have met military people before coming to DoD STARBASE	.072**	.118**	.018	.083**	.052*	.041
Military Attitudes	.437**	.917**	.456**	.068*	.073**	.005
Attitudes Total (post)	.745**	.664**	.648**	.187**	.179**	.072**
STEM Concepts (post)	.378**	.304**	.265**	.139**	.141**	.061*
Future Planning (post)	.603**	.459**	.444**	.168**	.155**	.077**
Science Confid. (post)	.456**	.338**	.318**	.159**	.168**	.066*
Math Confidence (post)	.306**	.246**	.229**	.104**	.065*	.005
Behavior-Motive (post)	1	.510**	.405**	.227**	.212**	.127**
Military Base Endor (post)	.510**	1	.461**	.066*	.083**	-.002
Overall Evaluation (post)	.412**	.482**	1	.077**	.082**	.021
Knowledge Total (post)	.227**	.066*	.080**	1	.732**	.627**
Chemistry (post)	.212**	.083**	.081**	.732**	1	.339**
Engineering (post)	.127**	-.002	.028	.627**	.339**	1
Physics (post)	.083**	.021	.013	.485**	.263**	.176**
Technology (post)	.114**	.040	.054*	.606**	.272**	.244**
Math (post)	.149**	.051	.067*	.701**	.353**	.268**
STEM Awareness (post)	.124**	.031	.023	.397**	.243**	.184**
STEM Positions (post)	.246**	.117**	.046	.230**	.146**	.124**

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Appendix G: Intercorrelations Among Student Characteristics and Attitude Dimensions (cont.)

	Physics	Technology	Math	STEM Aware	STEM Position
Gender	-.040	-.076**	-.015	.016	.058*
Grade	-.048	-.005	.035	-.027	-.084**
Age	-.058*	-.047	-.017	.005	-.057*
I heard about DoD STARBASE before I knew I was coming here	.068**	.047	.063*	.030	.063*
I know someone that went through DoD STARBASE before me	.038	.042	.026	.042	.085**
I have met military people before coming to DoD STARBASE	.015	.104**	.049	.036	.093**
Military Attitudes	.018	.053*	.053*	.033	.084**
Attitudes Total (post)	.068**	.096**	.155**	.076**	.146**
STEM Concepts (post)	.040	.089**	.089**	.063*	.034
Future Planning (post)	.078**	.089**	.121**	.067*	.146**
Science Confid. (post)	.080**	.038	.133**	.057*	.092**
Math Confidence (post)	.025	.068**	.147**	.042	.054*
Behavior-Motive (post)	.083**	.114**	.149**	.124**	.246**
Military Base Endor (post)	.021	.040	.051	.031	.117**
Overall Evaluation (post)	.021	.050	.065*	.012	.039
Knowledge Total (post)	.485**	.606**	.701**	.397**	.230**
Chemistry (post)	.263**	.272**	.353**	.243**	.146**
Engineering (post)	.176**	.244**	.268**	.184**	.124**
Physics (post)	1	.165**	.204**	.042	.111**
Technology (post)	.165**	1	.317**	.184**	.136**
Math (post)	.204**	.317**	1	.216**	.151**
STEM Awareness (post)	.042	.184**	.216**	1	.235**
STEM Positions (post)	.111**	.136**	.151**	.235**	1

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Appendix K: Glossary

Academy: See DoD STARBASE Academy.

Academy Performance Level: DoD STARBASE sites are 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).

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

Appropriations Act: 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/At-Risk Youth: 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, having an older sibling who dropped out of high school, changing schools two or more times other than for the normal progression (e.g. from elementary to middle school), having “C” or lower grades, repeating an earlier grade, receiving welfare assistance, being from a low socio-economic status family and living in a household where the primary language spoken is other than English.

Black or African American: A person having origins in any of the black racial groups of Africa.

Class: Within the context of a DoD STARBASE Academy, a class is a grouping of students. This group may not necessarily have been a homogenous entity prior to DoD STARBASE instruction; it may be a temporary grouping only for the purposes of assembling for the 20-hour minimum period of DoD STARBASE instruction.

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

Computer-Aided Design (CAD): A program that prepares individuals to apply technical skills and advanced computer software and hardware to the creation of graphic representations and simulations in support of engineering projects. This includes instruction in engineering graphics, two-dimensional and three-dimensional engineering design, solids modeling, engineering animation, computer-aided drafting (CAD), computer-aided design (CADD), and auto-CAD techniques.

- **Pro E (Pro/ENGINEER)** is the CAD program used in DoD STARBASE programs.

Core Curriculum: The fixed course of study taught by all DoD STARBASE academies. (See DoD STARBASE Curriculum.)

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

Appendix K: Glossary, (cont.)

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

DoD STARBASE Academy: A DoD STARBASE educational program held in a specific state location.

DoD STARBASE 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 hours as mandated by OASD /M&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

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 office of the Assistant Secretary of Defense for Manpower & Reserve Affairs, (OASD/M&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/Location: The location of a DoD STARBASE Academy where the program is taught.

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).

Appendix K: Glossary, (cont.)

Elementary School: Elementary schools include regular schools (i.e., schools that are part of state and local school systems and private elementary, both religiously affiliated and nonsectarian); alternative schools and special education schools. Elementary schools typically host grades K-6 and do not have any grade higher than grade 8. For example, schools with grades K-6, 1-3, or K-8 are classified as elementary.

Ethnicity/Race: Categories developed in 1997 by the Office of Management and Budget (OMB) that are used to describe groups to which individuals belong, identify with, or belong in the eyes of the community. The categories do not denote scientific definitions of anthropological origins. The designations are used to categorize U.S. citizens, resident aliens, and other eligible non-citizens. Individuals are asked to first designate ethnicity as: Hispanic or Latino or Non-Hispanic or Latino. Second, individuals are asked to indicate one or more races that apply among the following: American Indian or Alaska Native, Asian, Black or African American, 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 or FY: 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 2016 begins on October 1, 2015, and ends on September 30, 2016.

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. They may also be defined as a school with no grade lower than 7 and at least one grade higher than 8. This includes regular schools (i.e. schools that are part of state and local school systems and private secondary schools, both religiously affiliated and nonsectarian, alternative schools, vocational education schools, and special education.

Hispanic or Latino: A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.

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.

Location: See DoD STARBASE Site/Location.

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.

Appendix K: Glossary, (cont.)

Middle School: A school with no grade lower than 5 and no grade higher than 8. This includes regular schools (i.e. schools that are part of state and local school systems and private secondary schools, both religiously affiliated and nonsectarian, alternative schools, vocational education schools and special education.

Minority: Racial and ethnic minority populations are defined as: Asian American, Black or African American, Hispanic or Latino, Native Hawaiian and Other Pacific Islander, American Indian and Alaska Native.

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 non-profit organization.

OASD/M&RA: Office of the Assistant Secretary of Defense for Manpower & Reserve Affairs.

Operational Academies: 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.

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

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.

Appendix K: Glossary, (cont.)

Race/Ethnicity: Categories developed in 1997 by the Office of Management and Budget (OMB) that are used to describe groups to which individuals belong, identify with, or belong in the eyes of the community. The categories do not denote scientific definitions of anthropological origins. The designations are used to categorize U.S. citizens, resident aliens, and other eligible non-citizens. Individuals are asked to first designate ethnicity as: Hispanic or Latino or Non-Hispanic or Latino. Second, individuals are asked to indicate one or more races that apply among the following: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White.

Race/Ethnicity Unknown: The category used to report students or employees whose race and ethnicity are not known.

Rural Location: All population, housing and territory not included within an urbanized area. 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.

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/Location.

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 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 may be designed to reach students who do not fall under the targeted "participant" schools or are in response to requests by members of the community to serve other groups of children. Supplemental programs are not required and are 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. These vary by state, but generally include: obtaining a bachelor's degree; completing a teacher preparation program, which includes either an undergraduate, master's, or alternative program; and getting state or national certification to teach by completing all requirements.

Title 1 or Title 1 Eligible: 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.

Urban Area (UA): Consists of 50,000 or more people.

Urban Cluster (UC): Consists of at least 2,500 and less than 50,000 people.

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

“Correlating the importance of science and technology to kids in this program with the tools and procedures we use in the military has been phenomenal. Advocating my trade and how reading, education, and applying various materials together to modify or repair equipment is great. Being an ambassador for the armed forces to the youth is honorable. I feel planting seeds in these children’s minds covering topics on plasma, combustion engines, even nuclear fusion is fascinating knowing their teachers and instructors will foster and water those ideas. I attempt to allow the kids a comfortable environment to promote their curiosity and individual involvement.”

– SSG BRIAN DEAR, STARBASE KANSAS CITY



DoD STARBASE Directory

ALABAMA

MONTGOMERY

STARBASE Maxwell

Service Component: Air Force

Military Location: Maxwell Air Force Base

Address:

60 W. Maxwell Boulevard, Building 835

Montgomery, Alabama 36116

Tel: 334-953-4072

Fax: None

Director: Princess J. Cuthrell

Email: princess@montgomeryed.org

Website: None

AUTAUGA COUNTY

AUTAUGAVILLE

DANIEL PRATT ELEMENTARY

PINE LEVEL ELEMENTARY

ELMORE COUNTY

ECLECTIC MIDDLE SCHOOL

REDLAND ELEMENTARY

WETUMPKA MIDDLE

MAXWELL AIR FORCE BASE

MAXWELL ELEMENTARY MIDDLE

MONTGOMERY PUBLIC SCHOOLS

CHISHOLM ELEMENTARY

DAVIS ELEMENTARY

DUNBAR-RAMER SCHOOL

FITZPATRICK ELEMENTARY

HALCYON ELEMENTARY

HIGHLAND GARDENS

JOHNSON ELEMENTARY

ARIZONA

TUCSON

STARBASE Arizona

Service Component: Air Force

Military Location: Davis-Monthan Air Force Base

Address:

5355 E. Granite Street

Tucson, Arizona 85707

Tel: 520-228-7827

Fax: None

Director: Mikelle Cronk

Email: cronkm@vail.k12.az.us

Website: www.facebook.com/starbasearizona

AMPHITHEATER UNIFIED SCHOOL DISTRICT

HOLAWAY ELEMENTARY

KEELING ELEMENTARY

WALKER ELEMENTARY

PRESIDIO CHARTER SCHOOLS

PRESIDIO ELEMENTARY

SUNNYSIDE UNIFIED SCHOOL DISTRICT

MISSION MANOR ELEMENTARY

SIERRA INTERMEDIATE

TUCSON UNIFIED SCHOOL DISTRICT

WRIGHT ELEMENTARY

VAIL UNIFIED SCHOOL DISTRICT

ACACIA ELEMENTARY

DESERT WILLOW ELEMENTARY

ESMOND STATION K-8 SCHOOL

SYCAMORE ELEMENTARY

VAIL ACADEMY AND HIGH SCHOOL

CALIFORNIA

LOS ALAMITOS

STARBASE Los Alamitos*

Service Component: National Guard

Military Location: Joint Forces Training Base Los Alamitos

Address:

11525 Freedom Way, Building 262

Los Alamitos, California 90720

Tel: 562-795-1473

Fax: None

Director: Stacey Hendrickson

Email: stacey.hendrickson.nfg@mail.mil

Website: www.starbaselosalamitos.com

FULLERTON SCHOOL DISTRICT

PACIFIC DRIVE ELEMENTARY

WOODCREST ELEMENTARY

LOS ALAMITOS UNIFIED

LEE ELEMENTARY

LOS ANGELES UNIFIED

92ND STREET ELEMENTARY

93RD STREET ELEMENTARY

96TH STREET ELEMENTARY

112TH STREET ELEMENTARY

122ND STREET ELEMENTARY

BARRETT ELEMENTARY

BUSHNELL WAY ELEMENTARY

FLOURNOY ELEMENTARY

SUNRISE ELEMENTARY

OCEAN VIEW UNIFIED

COLLEGE VIEW ELEMENTARY

PRIVATE SCHOOL

DOLORES MISSION

MINERET ACADEMY

NEW DIMENSIONS

ST. MICHAELS

SANTA ANA UNIFIED

DIAMOND ELEMENTARY

JACKSON ELEMENTARY

JIM THORPE ELEMENTARY

LINCOLN ELEMENTARY

LOWELL ELEMENTARY

MADISON ELEMENTARY

MONROE ELEMENTARY

PIO PICO ELEMENTARY

REMINGTON ELEMENTARY

SEPULVEDA ELEMENTARY

SACRAMENTO

STARBASE Sacramento

Service Component: National Guard

Military Location: Okinawa California National Guard Armory

Address:

8400 Okinawa Street

Sacramento, California 95828

Tel: 916-387-7405

Fax: 916-387-8309

Director: Capt Kel K. Thede

Email: kel.thede.1@ang.af.mil

Website: pending

ELK GROVE UNIFIED

BARBARA COMSTOCK ELEMENTARY

ELLIOTT RANCH ELEMENTARY

FLORENCE MARKOFER ELEMENTARY

JOHN REITH ELEMENTARY

JOSEPH SIMS ELEMENTARY

ROY HERBURGER ELEMENTARY

PRAIRIE ELEMENTARY

SIERRA ENTERPRISE ELEMENTARY

UNION HOUSE ELEMENTARY

FOLSOM CORDOVA UNIFIED

MATHER HEIGHTS ELEMENTARY

ROBIA SCHOOL DISTRICT

BELL AVENUE ELEMENTARY

SACRAMENTO CITY UNIFIED

MARTIN LUTHER KING JUNIOR

SAN JUAN UNIFIED

OAK VIEW COMMUNITY

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

COLORADO

COLORADO SPRINGS

STARBASE Peterson

Service Component: Air Force

Military Location: Peterson Air Force Base

Address:

710 Loring Street, Building 850

Colorado Springs, Colorado 80914

Tel: 719-556-9500

Fax: 719-556-9538

Director: Patty Smathers

Email: psstarbasepeterson@gmail.com

Website: None

COLORADO SPRINGS SCHOOL DISTRICT ELEVEN

CHIPETA ELEMENTARY

CHRISTA MCAULIFFE ELEMENTARY

EDISON ELEMENTARY

FREMONT ELEMENTARY

GLOBE CHARTER

HUNT ELEMENTARY

MADISON ELEMENTARY

MONROE ELEMENTARY

QUEEN PALMER ELEMENTARY

ROGERS ELEMENTARY

ROOSEVELT EDISON CHARTER

TWAIN ELEMENTARY

WILSON ELEMENTARY

ELLICOT SCHOOL DISTRICT 22

ELLICOTT ELEMENTARY

FALCON SCHOOL DISTRICT 49

FALCON ELEMENTARY SCHOOL OF TECHNOLOGY

IMAGINE CLASSICAL ACADEMY INDIGO RANCH

ODYSSEY ELEMENTARY

HARRISON SCHOOL DISTRICT TWO

ATLAS PREPRATORY

WILDFLOWER ELEMENTARY

INDEPENDENT

COLORADO SPRINGS CHRISTIAN

DIVINE REDEEMER

PIKES PEAK CHRISTIAN

SPRINGS BAPTIST ACADEMY

STATE CHARTER SCHOOL INSTITUTE

PIKES PEAK PREPARATORY ACADEMY

CONNECTICUT

HARTFORD

STARBASE Connecticut - Windsor Locks*

Service Component: National Guard

Military Location: Bradley Air National Guard Base, Windsor

Locks Readiness Center

Address:

85 Light Lane

Unit 300

Windsor Locks, Connecticut 06096

Tel: 860-292-4678

Fax: None

Director: Melissa Vanek

Email: mvanek@starbase-ct.com

Website: www.starbase-ct.com

HARFORD PUBLIC SCHOOL

BREAKTHROUGH II MAGNET SCHOOL

CAPITAL PREPARATORY MAGNET SCHOOL

DR. FRANK T. SIMPSON WAVERLY ELEMENTARY

DR. JAMES H. NAYLOR/CCSU LEADERSHIP ACADEMY

JUMOKE ACADEMY HONORS SMART

KINSELLA ACADEMY OF ARTS

MARIA COLON SANCHEZ ELEMENTARY

RAMON E. BETANCES STEM MAGNET SCHOOL

WEST MIDDLE SCHOOL

WINDSOR PAROCHIAL SCHOOLS

ST. GABRIEL SCHOOL

WATERBURY**STARBASE Connecticut - Waterbury**

Service Component: National Guard

Military Location: Off-base

Address:

750 Chase Parkway

Waterbury, Connecticut 06708

Tel: 203-575-8271

Fax: None

Director: Melissa Vanek

Email: mvanek@starbase-ct.com

Website: www.starbase-ct.com

WATERBURY PAROCHIAL SCHOOLS

OUR LADY OF MOUNT CARMEL ELEMENTARY

WATERBURY PRIVATE SCHOOL

CHILDREN'S COMMUNITY SCHOOL

WATERBURY PUBLIC SCHOOLS

BUCKS HILL ELEMENTARY

BUNKER HILL ELEMENTARY

B.W. TINKER ELEMENTARY

CARRINGTON ELEMENTARY

CHASE ELEMENTARY

DRIGGS ELEMENTARY

DUGGAN ELEMENTARY

F.J. KINGSBURY ELEMENTARY

GENERALI ELEMENTARY

HOPEVILLE ELEMENTARY

JOHN G. GILMARTIN ELEMENTARY

JONATHAN REED ELEMENTARY

MALONEY MAGNET ELEMENTARY

REGAN ELEMENTARY

ROTELLA ELEMENTARY

SPRAGUE ELEMENTARY

WALSH ELEMENTARY

WASHINGTON ELEMENTARY

WENDELL CROSS ELEMENTARY

FLORIDA**JACKSONVILLE****STARBASE Florida**

Service Component: National Guard

Military Location: 125th Fighter Wing FANG

Address:

14300 FANG Drive

Jacksonville, Florida 32218

Tel: 904-741-7320

Fax: 904-741-7324

Director: Greg Stritch

Email: gregory.s.stritch@ang.af.mil

Website: None

DUVAL COUNTY PUBLIC SCHOOLS

ANDREW ROBINSON ELEMENTARY

BRENTWOOD ELEMENTARY

DINSMORE ELEMENTARY CENTER ACADEMY

HENDRICKS AVENUE ELEMENTARY

HYDE GROVE ELEMENTARY

LAKE FOREST ELEMENTARY

LOUIS SHEFFIELD

MAMIE AGNES JONES ELEMENTARY

M.L. KING

OCEANWAY ELEMENTARY

R.L. BROWN ELEMENTARY

RUFUS PAYNE

SALLYE B. MATHIS

S.P. LIVINGSTON ELEMENTARY

SUSIE B. TOLBERT

WEST JACKSONVILLE

WOODLAND ACRES

NASSAU COUNTY

SONSHINE CHRISTIAN ACADEMY

ST. AUGUSTINE DIOSESE

PALMER CATHOLIC ACADEMY

SAN JOSE CATHOLIC

ST. PATRICK CATHOLIC

ST. PIUS V CATHOLIC

GEORGIA

MARIETTA

Peach State STARBASE

Service Component: National Guard

Military Location: Clay National Guard Center/Dobbins Air Reserve Base

Address:

1000 Halsey Avenue

Building 53

Dobbins ARB, Georgia 30060

Tel: 678-569-3568

Fax: None

Director: John McKay

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

Website: www.facebook.com/peachstatestarbase

COBB COUNTY SCHOOL DISTRICT

BRYANT ELEMENTARY

HARMONY LELAND ELEMENTARY

HENDRICKS ELEMENTARY

MABLETON ELEMENTARY

TRITT ELEMENTARY

HOMESCHOOL GROUP

FORSYTH COUNTY CHRISTIAN HOMESCHOOL GROUP

GREAT OAK ACADEMY

MARIETTA CITY SCHOOLS

HICKORY HILLS ELEMENTARY

LOCKHEED ELEMENTARY

SAVANNAH

STARBASE Savannah*

Service Component: Army

Military Location: Hunter Army Air Field

Address:

134 MacArthur Circle, Building 617

Savannah, Georgia 31409

Tel: 912-315-3749

Fax: 912-315-3748

Director: Betty L. G. Morgan

Email: bmormicmou@aol.com

Website: savannahstarbase.weebly.com/index.html

CANDLER COUNTY

METTER INTERMEDIATE

CHATHAM COUNTY

CALVARY DAY SCHOOL

CHARLES ELLIS

HUBERT MIDDLE SCHOOL

JACOB G. SMITH SCHOOL

PULASKI ELEMENTARY

SAVANNAH CHRISTIAN PREPARATORY

THUNDERBOLT ELEMENTARY

VIRGINIA HEARD SCHOOL

WEST CHATHAM ELEMENTARY

LIBERTY COUNTY

BRITTIN ELEMENTARY

DIAMOND ELEMENTARY

KESSLER ELEMENTARY

MURRAY ELEMENTARY

WARNER ROBINS

STARBASE Robins*

Service Component: Air Force Reserve

Military Location: Robins Air Force Base

Address:

1842 Heritage Boulevard

Warner Robins, Georgia 31098

Tel: 478-926-1769

Fax: None

Director: Wesley Fondal, Jr.

Email: wesley@starbaserobins.org

Website: www.starbaserobins.org

BIBB SCHOOL DISTRICT

BERND ELEMENTARY

BRUCE ELEMENTARY

HEARD ELEMENTARY

INGRAM PYE ELEMENTARY

PORTER ELEMENTARY

SOUTHFIELD ELEMENTARY

WILLIAMS ELEMENTARY

HOUSTON SCHOOL DISTRICT

CENTERVILLE ELEMENTARY
 EAGLE SPRINGS ELEMENTARY
 HILLTOP ELEMENTARY
 LINDSEY ELEMENTARY
 MATT ARTHUR ELEMENTARY
 MILLER ELEMENTARY
 MORNINGSIDE ELEMENTARY
 NORTHSIDE ELEMENTARY
 PARKWOOD ELEMENTARY
 RUSSELL ELEMENTARY
 SHIRLEY HILLS ELEMENTARY
 WESTSIDE ELEMENTARY

PRIVATE

WESTFIELD SCHOOL

TWIGGS SCHOOL DISTRICT

JEFFERSONVILLE ELEMENTARY

HAWAII**KEAAU****STARBASE Hawaii**

Service Component: National Guard

Military Location: Keaau Armory

Address:

16-512 Volcano Highway

Keaau, Hawaii 96749

Tel: 808-982-4298

Fax: 808-982-4241

Director: Todd Friel

Email: starbasehi@aol.com

Website: None

HILO COMPLEX

WAIAKEA ELEMENTARY

HILO PRIVATE SCHOOL

HAILI CHRISTIAN SCHOOL

ST. JOSEPH SCHOOL

KAU-KEAAU-PAHOA COMPLEX

KEAAU ELEMENTARY
 KEONEPOKO ELEMENTARY
 MT. VIEW ELEMENTARY
 PAHOA ELEMENTARY

PUNA CHARTER SCHOOL

HAWAII ACADEMY OF ARTS AND SCIENCE
 KE KULA O NAWAHIOKALANIOPUU
 NA WAI OLA PUBLIC CHARTER

INDIANA**FORT WAYNE****STARBASE Indiana - Fort Wayne***

Service Component: National Guard

Military Location: 122 Fighter Wing

Address:

3005 W. Ferguson Road

Fort Wayne, Indiana 46809

Tel: 260-478-3712

Fax: None

Director: Scott Liebhauser

Email: scott@starbasein.org

Website: www.starbasein.org

FORT WAYNE-SOUTH BEND CATHOLIC DIOCESE

ST. ALOYSIUS

ST. JOHN THE BAPTIST

ST. JOSEPH HESSEN CASSEL

ST. ELIZABETH ANN SETON

ST. JOSEPH-BROOKLYN

EAST ALLEN COUNTY SCHOOLS

HERITAGE ELEMENTARY

PRINCE CHAPMAN ACADEMY

FORT WAYNE COMMUNITY SCHOOLS

BLOOMINGDALE ELEMENTARY

GLENWOOD PARK ELEMENTARY

INDIAN VILLAGE ELEMENTARY

IRWIN ELEMENTARY

LEVAN SCOTT ACADEMY

MAPLEWOOD ELEMENTARY

MERLE J. ABBETT ELEMENTARY

SOUTH WAYNE ELEMENTARY

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

THURGOOD MARSHALL ACADEMY
WASHINGTON ELEMENTARY
WEISSER PARK ELEMENTARY

FORT WAYNE LUTHERAN SCHOOLS
EMMAUS LUTHERAN
ST. PAUL'S LUTHERAN
SUBURBAN BETHLEHEM LUTHERAN

HUNTINGTON COUNTY SCHOOLS
FLINT SPRINGS

PRIVATE
CORNERSTONE CHRISTIAN
HOMESCHOOL GROUP

INDIANAPOLIS

STARBASE Indiana-Indianapolis
Service Component: National Guard
Military Location: Joint Forces Headquarters,
Indiana National Guard
Address:
2002 S. Holt Road, Building 15
Indianapolis, Indiana 46241
Tel: 317-247-3502
Fax: 317-245-4049
Director: Scott Liebhauser
Email: scott@starbasein.org
Website: www.starbasein.org

GREENWOOD COMMUNITY SCHOOL CORPORATION
SOUTHWEST ELEMENTARY
V.O. ISOM CENTRAL ELEMENTARY
WESTWOOD ELEMENTARY

INDIANAPOLIS PUBLIC SCHOOLS
COLD SPRING ELEMENTARY
GEORGE WASHINGTON CARVER MONTESSORI
ROBERT LEE FROST ELEMENTARY
SIDENER ACADEMY

MSD WAYNE TOWNSHIP
STOUT FIELD ELEMENTARY

MSD WASHINGTON TOWNSHIP
GREENBRIAR ELEMENTARY

SOUTH BEND

STARBASE Indiana-South Bend
Service Component: National Guard
Military Location: South Bend Armory
Address:
1901 Kemble Avenue
South Bend, Indiana 46613
Tel: 317-247-3000, Extension 88827
Fax: None
Director: Scott Liebhauser
Email: scott@starbasein.org
Website: www.starbasein.org

SOUTH BEND COMMUNITY SCHOOL CORPORATION
GREENE INTERMEDIATE CENTER
MARSHAL INTERMEDIATE CENTER

PRIVATE
ST. ANTHONY DE PAUDA CATHOLIC
ST. ADALBERT CATHOLIC
MISHAWAKA CATHOLIC

KANSAS

KANSAS CITY

STARBASE Kansas City*

Service Component: National Guard
 Military Location: 2nd 137th Infantry Regiment
 Combined Arms Battalion
 Address:
 100 S. 20th Street
 Kansas City, Kansas 66102-5604
 Tel: 785-646-7864
 Fax: 913-279-7859
 Director: Karen Whitacre
 Email: karen@kansasstarbase.org
 Website: www.kansasstarbase.org

BASEHOR LINWOOD SCHOOL DISTRICT

BASEHOR INTERMEDIATE
 GLENWOOD RIDGE ELEMENTARY
 LINWOOD ELEMENTARY

EASTON UNIFIED SCHOOL DISTRICT

PLEASANT RIDGE ELEMENTARY

KANSAS CITY KANSAS PUBLIC SCHOOLS

M.E. PEARSON ELEMENTARY
 NEW CHELSEA ELEMENTARY
 PARKER ELEMENTARY
 STONY POINT NORTH ELEMENTARY
 STONY POINT SOUTH ELEMENTARY
 T.A. EDISON ELEMENTARY
 WHITE CHURCH ELEMENTARY

LAWRENCE PUBLIC SCHOOLS

PINCKNEY ELEMENTARY

LANSING UNIFIED SCHOOL DISTRICT

LANSING ELEMENTARY

LEAVENWORTH UNIFIED SCHOOL DISTRICT

ANTHONY ELEMENTARY
 DAVID BREWER ELEMENTARY
 EARL LAWSON ELEMENTARY
 HENRY LEAVENWORTH ELEMENTARY

PRIVATE

KANSAS CITY CHRISTIAN
 MARANTHA ACADEMY
 ST. AGNES CATHOLIC
 XAVIER CATHOLIC

SHAWNEE MISSION SCHOOL DISTRICT

BROOKRIDGE ELEMENTARY
 PAWNEE ELEMENTARY
 PRAIRIE ELEMENTARY
 SANTE FE TRAIL ELEMENTARY
 TOMAHAWK ELEMENTARY

MANHATTAN

STARBASE Manhattan

Service Component: National Guard
 Military Location: 130th Field Artillery Brigade
 Address:
 721 Levee Drive
 Manhattan, Kansas 66502-5085
 Tel: 785-646-4690
 Fax: 785-539-7810
 Director: Rebecca Catlin
 Email: becky@kansasstarbase.org
 Website: www.kansasstarbase.org

ARCHDIOSESE OF KANSAS CITY, KANSAS

STS. PETER AND PAUL CATHOLIC

CHAPMAN UNIFIED SCHOOL DISTRICT 473

CHAPMAN ELEMENTARY

FLINT HILLS CHRISTIAN SCHOOL

FLINT HILLS CHRISTIAN

GEARY COUNTY SCHOOLS UNIFIED SCHOOL DISTRICT 475

FT. RILEY ELEMENTARY
 MILFORD ELEMENTARY
 SEITZ ELEMENTARY
 SHERIDAN ELEMENTARY
 SPRING VALLEY ELEMENTARY
 WESTWOOD ELEMENTARY

KAW VALLEY UNIFIED SCHOOL DISTRICT 321

ST. MARYS GRADE SCHOOL

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

MANHATTAN-OGDEN UNIFIED SCHOOL DISTRICT 383

BLUEMONT ELEMENTARY
 LEE ELEMENTARY
 MARLATT ELEMENTARY
 NORTHVIEW ELEMENTARY
 OGDEN ELEMENTARY
 THEODORE ROOSEVELT ELEMENTARY
 WOODROW WILSON ELEMENTARY

MILL CREEK VALLEY UNIFIED SCHOOL DISTRICT 329

ALMA GRADE SCHOOL
 MAPLE HILL GRADE SCHOOL

ONAGA UNIFIED SCHOOL DISTRICT 322

ONAGA ELEMENTARY

RILEY COUNTY UNIFIED SCHOOL DISTRICT 378

RILEY COUNTY ELEMENTARY

ROCK CREEK UNIFIED SCHOOL DISTRICT 383

WESTMORELAND ELEMENTARY
 ST. GEORGE ELEMENTARY

UNIFIED SCHOOL DISTRICT 380 VERMILLION

FRANKFORT ELEMENTARY
 CENTRALIA ELEMENTARY

UNIFIED SCHOOL DISTRICT 384 BLUE VALLEY

BLUE VALLEY MIDDLE SCHOOL

WAMEGO UNIFIED SCHOOL DISTRICT 320

WAMEGO WEST ELEMENTARY

SALINA**STARBASE Salina**

Service Component: National Guard
 Military Location: Great Plains Joint Training Center
 Address:
 2929 Scanlan Avenue, Building 365
 Salina, Kansas 67401
 Tel: 785-822-6602
 Fax: 785-822-6600
 Director: Dixie Tipling
 Email: dixie@kansasstarbase.org
 Website: www.kansasstarbase.org

CENTRAL PLAINS UNIFIED SCHOOL DISTRICT 112

WILSON SCHOOL

CHAPMAN UNIFIED SCHOOL DISTRICT 473

BLUE RIDGE ELEMENTARY
 ENTERPRISE ELEMENTARY
 RURAL CENTER ELEMENTARY

CLIFTON - CLYDE UNIFIED SCHOOL DISTRICT 224

CLIFTON - CLYDE ELEMENTARY

ELI-SALINE UNIFIED SCHOOL DISTRICT 307

ELI-SALINE ELEMENTARY

LINCOLN UNIFIED SCHOOL DISTRICT 298

LINCOLN ELEMENTARY

MCPHERSON UNIFIED SCHOOL DISTRICT 418

EISENHOWER ELEMENTARY
 LINCOLN ELEMENTARY
 ROOSEVELT ELEMENTARY
 WASHINGTON ELEMENTARY

NORTH OTTAWA UNIFIED SCHOOL DISTRICT 239

MINNEAPOLIS ELEMENTARY

PRIVATE

CORNERSTONE CLASSICAL SCHOOL
 ELYRIA CHRISTIAN
 MCPHERSON AREA HOME EDUCATORS
 SALINA CHRISTIAN ACADEMY
 ST. MARY CATHOLIC
 ST. JOSEPH CATHOLIC

SALINA UNIFIED SCHOOL DISTRICT 305

CORONADO ELEMENTARY
 GRACE E. STEWART ELEMENTARY
 SUNSET ELEMENTARY
 HEUSNER ELEMENTARY
 MEADOWLARK RIDGE ELEMENTARY
 OAKDALE ELEMENTARY

SOLOMON UNIFIED SCHOOL DISTRICT 393

SOLOMON ELEMENTARY

SOUTHERN CLOUD UNIFIED SCHOOL DISTRICT 334

MILTONVALE ELEMENTARY
GLASCO GRADE SCHOOL

SYLVAN UNIFIED SCHOOL DISTRICT 299

LUCAS - SYLVAN ELEMENTARY

TWIN VALLEY UNIFIED SCHOOL DISTRICT 240

BENNINGTON GRADE SCHOOL
TESCOTT ELEMENTARY

TOPEKA**STARBASE Topeka***

Service Component: National Guard

Military Location: 190th Air Refueling Wing

Address:

5920 SE Coyote Drive

Forbes Field ANG

Topeka, Kansas 66619

Tel: 785-861-4196

Fax: 785-861-4127

Director: Brent Mumford

Email: brent@kansasstarbase.org

Website: www.kansasstarbase.org

ARCHDIOCESE OF KANSAS CITY KS

CHRIST THE KING ELEMENTARY
HOLY FAMILY CATHOLIC
ST. MATTHEW CATHOLIC

ATCHISON COUNTY COMMUNITY SCHOOLS UNIFIED SCHOOL DISTRICT 377

ATCHISON COUNTY COMMUNITY ELEMENTARY

AUBURN WASHBURN UNIFIED SCHOOL DISTRICT 437

AUBURN ELEMENTARY
FARLEY ELEMENTARY
INDIAN HILLS ELEMENTARY
PAULINE SOUTH INTERMEDIATE

BALDWIN CITY UNIFIED SCHOOL DISTRICT 348

BALDWIN ELEMENTARY INTERMEDIATE CENTER

CENTRAL HEIGHTS UNIFIED SCHOOL DISTRICT 288

CENTRAL HEIGHTS ELEMENTARY

JEFFERSON WEST UNIFIED SCHOOL DISTRICT 340

JEFFERSON WEST MIDDLE SCHOOL

KAW VALLEY UNIFIED SCHOOL DISTRICT 321

ROSSVILLE GRADE SCHOOL

LAWRENCE PUBLIC SCHOOLS

PRAIRIE PARK ELEMENTARY

LYNDON UNIFIED SCHOOL DISTRICT 421

LYNDON ELEMENTARY

MISSION VALLEY UNIFIED SCHOOL DISTRICT 330

MISSION VALLEY ELEMENTARY

PRIVATE

INTERNATIONAL ACADEMY

SANTA FE TRAIL UNIFIED SCHOOL DISTRICT 434

CARBONDALE ATTENDANCE CENTER

SEAMAN UNIFIED SCHOOL DISTRICT 345

LOGAN ELEMENTARY
ROCHESTER ELEMENTARY
WEST INDIANOLA ELEMENTARY

TOPEKA PUBLIC SCHOOLS UNIFIED**SCHOOL DISTRICT 501**

LOWMAN HILL ELEMENTARY
MAUDE BISHOP ELEMENTARY
MCEACHRON ELEMENTARY
STOUT ELEMENTARY
WHITSON ELEMENTARY

WEST FRANKLIN USD 287

APPANOOSE ELEMENTARY

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

WICHITA**STARBASE Wichita**

Service Component: National Guard
 Military Location: McConnell Air Force Base
 Address:
 52870 Jayhawk Drive
 Wichita, Kansas 67221-9020
 Tel: 316-759-8911
 Fax: 316-759-8915
 Director: Aaron Santry
 Email: aaron@kansasstarbase.org
 Website: www.kansasstarbase.org

ANDOVER PUBLIC SCHOOLS

COTTONWOOD ELEMENTARY
 SUNFLOWER ELEMENTARY
 WHEATLAND ELEMENTARY

AUGUSTA PUBLIC SCHOOLS

GARFIELD ELEMENTARY
 ROBINSON ELEMENTARY

ARCHDIOCESE OF WICHITA

BLESSED SACRAMENT CATHOLIC
 HOLY CROSS CATHOLIC SCHOOL

BELLE PLAINE PUBLIC SCHOOLS

BELLE PLAINE ELEMENTARY

CENTRAL OF BURDEN PUBLIC SCHOOLS

CENTRAL BURDEN ELEMENTARY

CIRCLE PUBLIC SCHOOLS

TOWANDA ELEMENTARY

DERBY PUBLIC SCHOOLS

DERBY HILLS ELEMENTARY
 PLEASANTVIEW ELEMENTARY

HAYSVILLE PUBLIC SCHOOLS

OATVILLE ELEMENTARY
 PRAIRIE ELEMENTARY
 RUTH CLARK ELEMENTARY

HOME SCHOOL

KANG HOME SCHOOL

PRIVATE

CENTRAL CHRISTIAN ACADEMY
 CHRIST THE SAVIOR ACADEMY
 HOLY CROSS LUTHERAN

ROSE HILL PUBLIC SCHOOLS

ROSE HILL INTERMEDIATE

WICHITA PUBLIC SCHOOLS

ADAMS ELEMENTARY
 ALLEN ELEMENTARY
 BENTON ELEMENTARY
 BUCKNER PERFORMING ARTS AND SCIENCE MAGNET
 ELEMENTARY
 GRIFFITH ELEMENTARY

LOUISIANA**BATON ROUGE****Bayou State STARBASE**

Service Component: National Guard
 Military Location: Off-base
 Address:
 13770 Highway 77
 Rosedale, Louisiana 70772
 Tel: 225-238-0250
 Fax: None
 Director: CPT John J. Meche
 Email: jmeche18@gmail.com
 Website: None

EAST BATON ROUGE PARISH SCHOOL DISTRICT

CHILDREN'S CHARTER ELEMENTARY
 FOREST HEIGHTS ACADEMY OF EXCELLENCE
 HOWELL PARK ELEMENTARY
 JEFFERSON TERRACE ELEMENTARY
 UNIVERSITY TERRACE ELEMENTARY

IBERVILLE PARISH SCHOOL DISTRICT

CRESCENT ELEMENTARY
 DORSEYVILLE ELEMENTARY
 EAST IBERVILLE ELEMENTARY
 IBERVILLE ELEMENTARY
 MSA EAST

MSA WEST
NORTH IBERVILLE ELEMENTARY

POINTE COUPEE SCHOOL DISTRICT

ROSENWALD ELEMENTARY
VALVERDA ELEMENTARY
ROUGON ELEMENTARY
FALSE RIVER ACADEMY
UPPER POINTE COUPEE ELEMENTARY

WEST BATON ROUGE PARISH SCHOOL DISTRICT

COHN ELEMENTARY

BOSSIER CITY

STARBASE Louisiana*

Service Component: Air Force Reserve
Military Location: Barksdale Air Force Base
Address:

827 Twining Drive, Building 4238

Barksdale AFB, Louisiana 71110

Tel: 318-529-3521

Fax: 318-529-3631

Director: Kathy Brandon

Email: kathy.brandon.2.ctr@us.af.mil

Website: www.307bw.afrc.af.mil/units/starbaselouisiana.aspx

BOSSIER PARISH SCHOOLS

APOLLO ELEMENTARY
BENTON ELEMENTARY
BOSSIER ELEMENTARY
CARRIE MARTIN ELEMENTARY
CENTRAL PARK ELEMENTARY
CURTIS ELEMENTARY
ELM GROVE ELEMENTARY
KINGSTON ELEMENTARY
LEGACY ELEMENTARY
MEADOWVIEW ELEMENTARY
PLANTATION PARK ELEMENTARY
PRINCETON ELEMENTARY
STOCKWELL PLACE ELEMENTARY
W.T. LEWIS ELEMENTARY
WALLER ELEMENTARY

CADDO PARISH SCHOOLS

CHEROKEE PARK ELEMENTARY
CLAIBORNE FUNDAMENTAL ELEMENTARY MAGNET
CRESWELL ELEMENTARY
FOREST HILL ELEMENTARY
JUDSON FUNDAMENTAL ELEMENTARY MAGNET
KEITHVILLE ELEMENTARY
MOORINGSPOUR ELEMENTARY
NORTH HIGHLANDS ELEMENTARY
OIL CITY ENVIRONMENTAL SCIENCE ELEMENTARY
MAGNET
RIVERSIDE ELEMENTARY
SHREVE ISLAND ELEMENTARY

PRIVATE

FIRST BAPTIST CHURCH SCHOOL
PROVIDENCE CLASSICAL ACADEMY
ST. JOHN BERCHMANS CATHEDRAL SCHOOL
WORD OF GOD ACADEMY

NEW ORLEANS

STARBASE Jackson Barracks*

Service Component: National Guard
Military Location: Army National Guard, Jackson Barracks
Address:

2033 Sherman Drive

New Orleans, Louisiana 70117

Tel: 504-278-8440

Fax: 504-278-8537

Director: Lisa Calabresi

Email: lisa.m.calabresi.nfg@mail.mil

Website: None

ORLEANS PARISH SCHOOL DISTRICT

BEN FRANKLIN ELEMENTARY MATHEMATICS AND
SCIENCE SCHOOL
EDGAR P. HARNEY SPIRIT OF EXCELLENCE ACADEMY
EDWARD HYNES CHARTER
ESPERANZA CHARTER
FANNIE C. WILLIAMS CHARTER
JAMES M. SINGLETON CHARTER
LAFAYETTE ACADEMY CHARTER
MARTIN BEHRMAN CHARTER SCHOOL ACADEMY OF
CREATIVE ARTS AND SCIENCE
ST. PAUL LUTHERAN
ST. RITA CATHOLIC

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

PLAQUEMINES PARISH SCHOOL DISTRICT
BELLE CHASSE ACADEMY

ST. BERNARD PARISH SCHOOL DISTRICT
ARABI ELEMENTARY
GAUTHIER ELEMENTARY
OUR LADY OF PROMPT SUCCOR
SMITH ELEMENTARY

PINEVILLE

Pelican State STARBASE*

Service Component: National Guard

Military Location: Camp Beauregard

Address:

609 F. Street

Camp Beauregard

Pineville, Louisiana 71360

Tel: 318-290-5252

Fax: 318-290-5937

Director: Nancy Brinkerhoff-Force

Email: nancy.l.brinkerhoffforce.nfg@mail.mil

Website: None

**ASSOCIATION OF CHRISTIAN SCHOOLS INTERNATIONAL
(ACSI)**

GRACE CHRISTIAN

DIOCESE OF ALEXANDRIA

OUR LADY OF PROMPT SUCCOR

SACRED HEART

GRANT PARISH

COLFAX ELEMENTARY

POLLOCK ELEMENTARY

SOUTH GRANT ELEMENTARY

**INDEPENDENT SCHOOLS ASSOCIATION OF THE
SOUTHWEST**

ALEXANDRIA COUNTRY DAY SCHOOL

LOUISIANA DEPARTMENT OF EDUCATION

AVOYELLES PUBLIC CHARTER

LOUISIANA HOME SCHOOL ORGANIZATION

CENLA CHRISTIAN HOME SCHOOL ASSOCIATION

RAPIDES PARISH

ACADIAN ELEMENTARY

ALMER REDWINE ELEMENTARY

BALL ELEMENTARY

CARTER C. RAYMOND ELEMENTARY

D.F. HUDDLE ELEMENTARY

FOREST HILL ELEMENTARY

HADNOT-HAYES ELEMENTARY

JULIUS PATRICK ELEMENTARY

MABEL BRASHER ELEMENTARY

NORTHWOOD HIGH SCHOOL

PINEVILLE ELEMENTARY

PLAINVIEW HIGH SCHOOL

POLAND JUNIOR HIGH

TIOGA ELEMENTARY

W.O. HALL MAGNET ELEMENTARY

MASSACHUSETTS

BEDFORD

STARBASE Hanscom*

Service Component: Air Force

Military Location: Hanscom Air Force Base

Address:

98 Barksdale Street, Building 1530

Hanscom AFB, Massachusetts 01730

Tel: 781-862-4015

Fax: 781-862-4016

Director: Peter Holden PhD

Email: pholden@mass-starbase.org

Website: www.mass-starbase.org

AYER-SHIRLEY REGIONAL SCHOOL DISTRICT

LURA A. WHITE SCHOOL

PAGE-HILLTOP ELEMENTARY

BILLERICA PUBLIC SCHOOLS

THOMAS DITSON ELEMENTARY

DRACUT PUBLIC SCHOOLS

GEORGE H. ENGLSBY ELEMENTARY

HAVERHILL PUBLIC SCHOOLS

J.G. WHITTIER MIDDLE SCHOOL

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

LAWRENCE PUBLIC SCHOOLS
OLIVER PARTNERSHIP SCHOOL

LEOMINSTER PUBLIC SCHOOLS
FRANCIS DRAKE ELEMENTARY

LINCOLN PUBLIC SCHOOLS
HANSCOM MIDDLE SCHOOL

MALDEN PUBLIC SCHOOLS
LINDEN STEAM ACADEMY

MICHIGAN

ALPENA

STARBASE Alpena*

Service Component: National Guard
Military Location: Alpena Combat Readiness Training Center
Address:
5884 A Street, Building 4
Alpena, Michigan 49707
Tel: 989-354-6332
Fax: 989-354-6353
Director: Steven Tezak
Email: stezak@starbasealpena.org
Website: www.starbasealpena.org

ALCONA COMMUNITY SCHOOLS
ALCONA ELEMENTARY

ALPENA PUBLIC SCHOOLS
BESSER ELEMENTARY
ELLA M. WHITE SCHOOL
HINKS SCHOOL
LINCOLN COMMUNITY SCHOOL
SANBORN SCHOOL
WILSON COMMUNITY SCHOOL

HILLMAN COMMUNITY SCHOOLS
HILLMAN ELEMENTARY

POSEN CONSOLIDATED SCHOOL DISTRICT NO. 9
POSEN ELEMENTARY

PRIVATE

ALL SAINTS CATHOLIC
IMMANUEL LUTHERAN
ST. IGNATIUS OF LOYOLA CATHOLIC
ST. JOHN LUTHERAN

ROGERS CITY AREA SCHOOLS
ROGERS CITY ELEMENTARY

BATTLE CREEK

STARBASE Battle Creek*

Service Component: National Guard
Military Location: 110th ATKW Battle Creek National Guard
Address:
3595 Mustang Avenue, Building 6909
Battle Creek ANG Base, Michigan 49037
Tel: 269-969-3219
Fax: 269-969-3251
Director: Bruce Medaugh
Email: bmedaugh@starbasebattlecreek.org
Website: None

ALBION PUBLIC SCHOOLS
ALTEC

BATTLE CREEK AREA CATHOLIC SCHOOLS
ST. JOSEPH ELEMENTARY

BATTLE CREEK PUBLIC SCHOOLS
FRANKLIN ELEMENTARY
FREMONT ELEMENTARY
URBANDALE ELEMENTARY
VALLEY VIEW ELEMENTARY
VERONA ELEMENTARY

BELLEVUE PUBLIC SCHOOLS
BELLEVUE ELEMENTARY

COLON PUBLIC SCHOOLS
COLON ELEMENTARY

DELTON KELLOGG PUBLIC SCHOOLS
DELTON KELLOGG MIDDLE

GALESBURG-AUGUSTA COMMUNITY SCHOOLS
GALESBURG-AUGUSTA MIDDLE

**Indicates location also coordinates a DoD STARBASE 2.0 Program.*

HASTINGS COMMUNITY SCHOOLS
CENTRAL ELEMENTARY
NORTHEASTERN ELEMENTARY
SOUTHEASTERN ELEMENTARY
STAR ELEMENTARY

LAKEWOOD PUBLIC SCHOOLS
LAKEWOOD MIDDLE

MAR LEE SCHOOL
MAR LEE SCHOOL

PARCHMENT PUBLIC SCHOOLS
NORTHWOOD ELEMENTARY

PENNFIELD SCHOOLS
DUNLAP ELEMENTARY

THORNAPPLE KELLOGG PUBLIC SCHOOLS
PAGE ELEMENTARY

THREE RIVERS COMMUNITY SCHOOLS
PARK ELEMENTARY

MOUNT CLEMENS

STARBASE One*

Service Component: National Guard
Military Location: Selfridge National Guard Base
Address:
27310 D Street, Building 1051
Selfridge ANGB, Michigan 48045
Tel: 586-239-4884
Fax: 586-239-5663
Director: Rick Simms
Email: rsimms@starbaseone.org
Website: www.starbaseone.org

ANCHOR BAY PUBLIC SCHOOLS
ASHLEY ELEMENTARY
GREAT OAKS ELEMENTARY
LOTTIE SCHMIDT ELEMENTARY
MACONCE ELEMENTARY
NALDRETT ELEMENTARY
SUGARBUSH ELEMENTARY

ARMADA PUBLIC SCHOOLS
KRAUSE ELEMENTARY

CHARTER - CENTERLINE
MICHIGAN MATH AND SCIENCE ACADEMY

CHARTER - NEW HAVEN
MERRITT ACADEMY

DETROIT PUBLIC SCHOOLS
BENNETT ELEMENTARY
CARVER ELEMENTARY
CHRYSLER ELEMENTARY
CLIPPERT ACADEMY
DAVISON ELEMENTARY
THIRKELL ELEMENTARY

LAMPHERE PUBLIC SCHOOLS
HILLER ELEMENTARY

L'ANSE CREUSE PUBLIC SCHOOLS
CARKENORD ELEMENTARY
HIGGINS ELEMENTARY
LOBBESTAEL ELEMENTARY
SOUTH RIVER ELEMENTARY
YACKS ELEMENTARY SCHOOL

NEW HAVEN COMMUNITY SCHOOLS
ENDEAVOUR ELEMENTARY
NEW HAVEN ELEMENTARY

PLYMOUTH EDUCATIONAL CENTER
PLYMOUTH EDUCATIONAL CENTER

PRIVATE SCHOOL - CLINTON TWP
TRINITY LUTHERAN

PRIVATE SCHOOL - ST. CLAIR SHORES
ST. GERMAINE CATHOLIC

RICHMOND COMMUNITY SCHOOLS
RICHMOND MIDDLE SCHOOL

RIVER ROUGE SCHOOLS
RIVER ROUGE STEM ACADEMY AT DUNN

SOUTH LAKE PUBLIC SCHOOLS
ELMWOOD ELEMENTARY

**Indicates location also coordinates a DoD STARBASE 2.0 Program.*

MINNESOTA

ST. PAUL

STARBASE Minnesota*

Service Component: National Guard
 Military Location: 133rd Airlift Wing
 Address:
 659 Mustang Avenue
 St. Paul, Minnesota 55111
 Tel: 612-713-2530
 Fax: 612-713-2540
 Director: Kim Van Wie
 Email: kvanwie@starbasemn.org
 Website: www.starbasemn.org

ANOKA-HENNEPIN PUBLIC SCHOOLS

UNIVERSITY AVENUE SCHOOL ACES

HOPKINS PUBLIC SCHOOLS

ALICE SMITH ELEMENTARY
 GATEWOOD ELEMENTARY
 GLEN LAKE ELEMENTARY
 L.H. TANGLEN ELEMENTARY
 MEADOWBROOK ELEMENTARY

MINNEAPOLIS PUBLIC SCHOOLS

BRYN MAWR COMMUNITY SCHOOL
 EMERSON SILC (SPANISH IMMERSION
 LEARNING CENTER)
 JEFFERSON COMMUNITY SCHOOL
 LAKE NOKOMIS - KEEWAYDIN
 LORING
 PILLSBURY ELEMENTARY

NORTH ST. PAUL, OAKDALE, MAPLEWOOD PUBLIC SCHOOL

EAGLE POINT ELEMENTARY

PRIVATE

FRASSATI CATHOLIC ACADEMY
 MATERNITY OF MARY - ST. ANDREW
 RISEN CHRIST CATHOLIC
 ST. AGNES SCHOOL
 ST. JEROME SCHOOL

ROSEMOUNT-APPLE VALLEY-EAGAN PUBLIC SCHOOLS

ECHO PARK ELEMENTARY
 OAK RIDGE ELEMENTARY
 WESTVIEW ELEMENTARY

ST. PAUL CHARTER SCHOOL

ACHIEVE LANGUAGE ACADEMY
 COMMUNITY OF PEACE ACADEMY

ST. PAUL PUBLIC SCHOOLS

BATTLE CREEK ELEMENTARY
 EASTERN HEIGHTS ELEMENTARY
 FARNSWORTH AEROSPACE ELEMENTARY
 MAGNET SCHOOL 5-8
 FROST LAKE ELEMENTARY
 GALTIER
 HIGHWOOD HILLS ELEMENTARY
 PHALEN LAKE HMONG STUDIES MAGNET

MONTANA

GREAT FALLS

STARBASE Great Falls*

Service Component: National Guard
 Military Location: Montana National Guard 120th Airlift Wing
 Address:
 2800 Airport Avenue B
 Great Falls, Montana 59404
 Tel: 406-791-0806
 Fax: 406-791-0339
 Director: Wendy Fechter
 Email: wendyfechter@mt.gov
 Website: None

AUGUSTA PUBLIC SCHOOL DISTRICT

AUGUSTA
 ELEMENTARY

GREAT FALLS PUBLIC SCHOOL DISTRICT

CHIEF JOSEPH ELEMENTARY
 LEWIS AND CLARK ELEMENTARY
 LINCOLN ELEMENTARY
 LONGFELLOW ELEMENTARY
 LOY ELEMENTARY
 MEADOWLARK ELEMENTARY

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

MORNINGSIDE ELEMENTARY
 MOUNTAIN VIEW ELEMENTARY
 RIVERVIEW ELEMENTARY
 ROOSEVELT ELEMENTARY
 SACAJAWEA ELEMENTARY
 SUNNYSIDE ELEMENTARY
 VALLEY VIEW ELEMENTARY
 WEST ELEMENTARY
 WHITTIER ELEMENTARY SCHOOL

HIGHWOOD PUBLIC SCHOOL DISTRICT
 HIGHWOOD ELEMENTARY

PRIVATE
 FOOTHILLS CHRISTIAN

HELENA

STARBASE Fort Harrison
 Service Component: National Guard
 Military Location: Fort Harrison National Guard
 Address:
 1956 Mt Majo Street
 Fort Harrison, Montana 59636
 Tel: 406-324-3727
 Fax: 406-324-3735
 Director: Michael Vannatta
 Email: mvannatta@mt.gov
 Website: None

EAST HELENA PUBLIC SCHOOLS
 ROBERT H. RADLEY ELEMENTARY

ELLISTON SCHOOL DISTRICT 27
 ELLISTON ELEMENTARY

HELENA PUBLIC SCHOOLS

BROADWATER ELEMENTARY
 BRYANT ELEMENTARY
 CENTRAL ELEMENTARY
 FOUR GEORGIANS ELEMENTARY
 HAWTHORNE ELEMENTARY
 JEFFERSON ELEMENTARY
 JIM DARCY ELEMENTARY
 KESSLER ELEMENTARY
 ROSSITER ELEMENTARY

SMITH ELEMENTARY
 WARREN ELEMENTARY

LINCOLN PUBLIC SCHOOLS
 LINCOLN ELEMENTARY

MONTANA CITY SCHOOL DISTRICT 27
 MONTANA CITY SCHOOL

PRIVATE
 ST. ANDREW SCHOOL

TOWNSEND SCHOOL DISTRICT #1
 TOWNSEND ELEMENTARY

NEVADA

LAS VEGAS

STARBASE Nellis
 Service Component: Air Force Reserve
 Military Location: Nellis Air Force Base
 Address:
 2841 Kinley Drive, Building 1619, Nellis AFB
 Las Vegas, Nevada 89191
 Tel: 702-575-3837
 Fax: None
 Director: Myles Judd
 Email: mjudd@starbasenellis.com
 Website: none

CLARK COUNTY

BEATSY RHODES ELEMENTARY
 LOMIE HEARD ELEMENTARY
 MAR ZEL LOWMAN ELEMENTARY
 NEAL ELEMENTARY
 PITTMAN ELEMENTARY
 UTE V. PERKINS ELEMENTARY
 WALTER BRACKEN ELEMENTARY
 WALTER LONG ELEMENTARY

NEW MEXICO

ALBUQUERQUE

New Mexico

STARBASE*

Service Component: Air Force

Military Location: Kirtland Air Force Base

Address:

1401 Maxwell Street SE,
Albuquerque, New Mexico 87117

Tel: 505-853-8110

Fax: 505-846-8932

Director: Esti Gutierrez

Email: estik.gutierrez@us.af.mil

Website: www.afrlnewmexico.com/afrl-la-luz-academy

ALBUQUERQUE PUBLIC SCHOOLS

21ST CENTURY PUBLIC ACADEMY CHARTER
CARLOS REY ELEMENTARY
DOLORES GONZALES ELEMENTARY
EAST SAN JOSE ELEMENTARY
EMERSON ELEMENTARY
LOWELL ELEMENTARY
PAINTED SKY ELEMENTARY
SANDIA BASE ELEMENTARY
SEVEN BAR ELEMENTARY

ARCHDIOCESE OF SANTA FE

HOLY GHOST CATHOLIC

EASTERN NAVAJO EDUCATION LINE OFFICE SCHOOL

DISTRICT

BACA/DLO AZHI COMMUNITY SCHOOL

GRANTS-CIBOLA COUNTY SCHOOLS

MESA VIEW ELEMENTARY

LOS LUNAS PUBLIC SCHOOLS

PERALTA ELEMENTARY
SUNDANCE ELEMENTARY

MAGDELENA MUNICIPAL SCHOOLS

MAGDELENA ELEMENTARY

MORIARTY-EDGEWOOD SCHOOLS

MORIARTY ELEMENTARY
SOUTH MOUNTAIN ELEMENTARY

PRIVATE

CHRIST LUTHERAN CHURCH AND SCHOOL
HOPE CHRISTIAN SCHOOL

NORTH CAROLINA

CHARLOTTE

STARBASE Charlotte

Service Component: National Guard

Military Location: National Guard 145th Airlift Wing

Address:

4930 Minuteman Way
Charlotte, North Carolina 28208

Tel: 704-398-4819

Fax: 704-398-4822

Director: Barbara Miller

Email: barbara.h.miller6.ctr@mail.mil

Website: None

BURKE COUNTY SCHOOL SYSTEM

FOREST HILL ELEMENTARY

CHARLOTTE-MECKLENBURG SCHOOL SYSTEM

BARRINGER ELEMENTARY
DEVONSHIRE ELEMENTARY
HIGHLAND RENAISSANCE ACADEMY
IDLEWILD ELEMENTARY
LONG CREEK ELEMENTARY
STARMOUNT ACADEMY OF EXCELLENCE

CHARTER

KIPP ACADEMY
LINCOLN CHARTER SCHOOL

GUILFORD COUNTY SCHOOL SYSTEM

WILEY ELEMENTARY

JACKSON COUNTY SCHOOL SYSTEM

SCOTTS CREEK SCHOOL

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

LINCOLN COUNTY SCHOOL SYSTEM

ROCK SPRINGS ELEMENTARY
ST. JAMES ELEMENTARY

PERQUIMANS COUNTY SCHOOL SYSTEM

HERTFORD GRAMMAR SCHOOL

THOMASVILLE CITY SCHOOLS

LIBERTY DRIVE ELEMENTARY

WATAUGA COUNTY SCHOOL SYSTEM

BLOWING ROCK ELEMENTARY

KURE BEACH**STARBASE Ft. Fisher**

Service Component: National Guard
Military Location: North Carolina National Guard Training Center
Address:
116 Air Force Way
Kure Beach, North Carolina 28449
Tel: 910-251-7333, #5, #1
Fax: None
Director: Barbara Miller
Email: barbara.h.miller6.ctr@mail.mil
Website: None

DAVIDSON COUNTY SCHOOLS

LIBERTY DRIVE ELEMENTARY

NEW HANOVER COUNTY SCHOOLS

ALDERMAN ELEMENTARY
BRADLEY CREEK ELEMENTARY
CAROLINA BEACH ELEMENTARY
CASTLE HAYNE ELEMENTARY
COLLEGE PARK ELEMENTARY
EATON ELEMENTARY
EDWIN A. ANDERSON ELEMENTARY
FOREST HILLS ELEMENTARY
JOHN H. BLAIR ELEMENTARY
MARY C. WILLIAMS ELEMENTARY
MURRAYVILLE ELEMENTARY
PINE VALLEY ELEMENTARY
WRIGHTSVILLE ELEMENTARY

PERQUIMANS SCHOOL DISTRICT

HERTFORD GRAMMAR SCHOOL

NORTH DAKOTA***MINOT*****STARBASE North Dakota**

Service Component: Air Force
Military Location: Minot Air Force Base
Address:
101 C Street
Minot AFB, North Dakota 58704
Tel: 701-727-3439
Fax: None
Director: Jenica R. Swenson
Email: jenica.swenson@minot.k12.nd.us
Website: www.minot.k12.nd.us/group/02f6f3d8-95ce-42dd-
aae7-ad9038d43a1d

MINOT PUBLIC SCHOOLS

BEL AIR ELEMENTARY
BELL ELEMENTARY
DAKOTA ELEMENTARY
EDISON ELEMENTARY
LEWIS AND CLARK ELEMENTARY
LONGFELLOW ELEMENTARY
MCKINLEY ELEMENTARY
NORTH PLAINS ELEMENTARY
PERKETT ELEMENTARY
ROOSEVELT ELEMENTARY
SUNNYSIDE ELEMENTARY
WASHINGTON ELEMENTARY

OHIO

DAYTON

STARBASE Wright-Patt*

Service Component: Air Force

Military Location: Wright-Patterson Air Force Base

Address:

2261 Monahan Way, Building 196, WPAFB

Dayton, Ohio 45433

Tel: 937-938-4859

Fax: 937-904-8033

Director: Daniel Andrews

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

Website: edoutreach.wpafb.af.mil/starbase/index.html

BEAVERCREEK CITY SCHOOLS

FAIRBROOK ELEMENTARY

MAIN ELEMENTARY

PARKWOOD ELEMENTARY

SHAW ELEMENTARY

TREBEIN ELEMENTARY

VALLEY ELEMENTARY

DAYTON PUBLIC SCHOOLS

KISER PRE K-6

WESTWOOD PRE K-6

WORLD OF WONDER PRE K-6

FAIRBORN CITY SCHOOLS

FAIRBORN INTERMEDIATE SCHOOL

HUBER HEIGHTS CITY SCHOOLS

CHARLES HUBER ELEMENTARY

MONTICELLO ELEMENTARY

RUSHMORE ELEMENTARY

VALLEY FORGE ELEMENTARY

WRIGHT BROTHERS ELEMENTARY

JEFFERSON TOWNSHIP LOCAL SCHOOLS

BLAIRWOOD ELEMENTARY

KETTERING CITY SCHOOLS

BEAVERTOWN ELEMENTARY

GREENMONT ELEMENTARY

INDIAN RIFFLE ELEMENTARY

JOHN F. KENNEDY ELEMENTARY

MAD RIVER LOCAL SCHOOLS

SPINNING HILLS MIDDLE SCHOOL

NEW LEBANON LOCAL SCHOOLS

DIXIE MIDDLE SCHOOL

TROTWOOD-MADISON CITY SCHOOLS

WESTBROOKE VILLAGE ELEMENTARY

WEST CARROLLTON CITY SCHOOLS

FRANK NICHOLAS ELEMENTARY

XENIA COMMUNITY SCHOOLS

ARROWOOD ELEMENTARY

COX ELEMENTARY

MCKINLEY ELEMENTARY

SHAWNEE ELEMENTARY

TECUMSEH ELEMENTARY

YELLOW SPRINGS VILLAGE SCHOOLS

MILLS LAWN ELEMENTARY

OKLAHOMA

OKLAHOMA CITY

STARBASE Oklahoma - Oklahoma City*

Service Component: National Guard

Military Location: Tinker Air Force Base

Address:

3001 S. Douglas Boulevard

Oklahoma City, Oklahoma 73145

Tel: 918-833-7757

Fax: 918-833-7769

Director: Pamela Kirk

Email: pamela@starbaseok.org

Website: www.dodstarbase.org

ARAPAHO/ BUTLER PUBLIC SCHOOLS

ARAPAHO/BUTLER ELEMENTARY

BURNS FLAT-DILL CITY PUBLIC SCHOOLS

WILL ROGERS ELEMENTARY

CANUTE PUBLIC SCHOOLS

CANUTE ELEMENTARY

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

CHOCTAW-NICOMA PARK SCHOOLS

CHOCTAW ELEMENTARY
 JAMES GRIFFITH INTERMEDIATE
 NICOMA PARK INTERMEDIATE
 WESTFALL ELEMENTARY

CRUTCHO PUBLIC SCHOOLS

CRUTCHO ELEMENTARY

CYRIL PUBLIC SCHOOLS

CYRIL ELEMENTARY

ERICK PUBLIC SCHOOLS

ERICK ELEMENTARY

FLETCHER PUBLIC SCHOOLS

FLETCHER ELEMENTARY

HAMMON PUBLIC SCHOOLS

HAMMON ELEMENTARY

INDIAHOMA PUBLIC SCHOOLS

INDIAHOMA ELEMENTARY

LAWTON PUBLIC SCHOOLS

FREEDOM ELEMENTARY

LEEDEY PUBLIC SCHOOLS

LEEDEY ELEMENTARY

MERRITT PUBLIC SCHOOLS

MERRITT ELEMENTARY

MOUNTAIN VIEW-GOTEBO PUBLIC SCHOOLS

MOUNTAIN VIEW-GOTEBO ELEMENTARY

OKLAHOMA CITY PUBLIC SCHOOLS

CLEVELAND ELEMENTARY
 GREEN PASTURES ELEMENTARY
 SEQUOYAH ELEMENTARY
 SPENCER ELEMENTARY
 TELSTAR ELEMENTARY
 WILLOW BROOK ELEMENTARY

PRIVATE

BISHOP JOHN CARROLL CATHOLIC
 MERCY SCHOOL INSTITUTE
 ST. CHARLES BORROMEIO CATHOLIC
 ST. JOHN NEPOMUK CATHOLIC
 ST. PHILIP NERI CATHOLIC

SWEETWATER PUBLIC SCHOOLS

SWEETWATER ELEMENTARY

TINKER AIR FORCE BASE

OKLAHOMA VIRTUAL SCHOOL

TULSA**STARBASE Oklahoma – Tulsa***

Service Component: National Guard
 Military Location: Tulsa National Guard Base
 Address:
 9131 E. Viper Street
 Tulsa, Oklahoma 74115
 Tel: 918-833-7757
 Fax: 918-833-7769
 Director: Pamela Kirk
 Email: pamela@starbaseok.org
 Website: www.dodstarbase.org

ANDERSON PUBLIC SCHOOLS

ANDERSON ELEMENTARY

GUYMON PUBLIC SCHOOLS

CENTRAL JUNIOR HIGH

JUSTUS TIAWAH PUBLIC SCHOOLS

JUSTUS TIAWAH ELEMENTARY

OSAGE PUBLIC SCHOOLS

OSAGE ELEMENTARY

OWASSO PUBLIC SCHOOLS

BARNES ELEMENTARY
 MILLS ELEMENTARY
 STONE CANYON ELEMENTARY

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

PRIVATE

ALL SAINTS CATHOLIC
MISS HELEN SCHOOL
REJOICE CHRISTIAN
SANKOFA CHARTER
ST. CATHERINE CATHOLIC
STS. PETER AND PAUL CATHOLIC

PRYOR PUBLIC SCHOOLS

JEFFERSON ELEMENTARY
LINCOLN ELEMENTARY

SEQUOYAH SCHOOLS

SEQUOYAH ELEMENTARY

TULSA PUBLIC SCHOOLS

MARSHALL ELEMENTARY
MCCLURE ELEMENTARY
WALT WHITMAN ELEMENTARY

UNION PUBLIC SCHOOLS

JOHNSON O'MALLEY PROGRAM

VERDIGRIS PUBLIC SCHOOLS

VERDIGRIS UPPER ELEMENTARY

WYNONA PUBLIC SCHOOLS

WYNONA ELEMENTARY

OREGON

KLAMATH FALLS

STARBASE Kingsley*

Service Component: National Guard
Military Location: Kingsley Field National Guard Base
Address:
302 Bong Street, Suite 19
Klamath Falls, Oregon 97603
Tel: 541-885-6472
Fax: None
Director: Denise Kortez
Email: denisekortez@yahoo.com
Website: None

HOME SCHOOL

CLASSICAL CONVERSATIONS
MORGAN HOMESCHOOL GROUP

KLAMATH COUNTY SCHOOL DISTRICT

BONANZA ELEMENTARY
CHILOQUIN ELEMENTARY
FERGUSON ELEMENTARY
GILCHRIST SCHOOL
GREAT BASIN HOMESCHOOL CENTER
HENLEY ELEMENTARY
KENO ELEMENTARY
MALIN ELEMENTARY
MERRILL ELEMENTARY
PELICAN ELEMENTARY
PETERSON ELEMENTARY
SAGE COMMUNITY SCHOOL
SHASTA ELEMENTARY
STEARNS ELEMENTARY

KLAMATH FALLS CITY SCHOOLS

CONGER ELEMENTARY
MILLS ELEMENTARY
ROOSEVELT ELEMENTARY

PRIVATE

HOSANNA CHRISTIAN ACADEMY
TRIAD SCHOOL

TULELAKE BASIN JOINT UNIFIED SCHOOL DISTRICT

TULELAKE ELEMENTARY

PORTLAND

STARBASE Portland

Service Component: National Guard
Military Location: Portland National Guard
Address:
6801 NE Cornfoot Road
Portland, Oregon 97218
Tel: 503-972-8630
Fax: None
Director: Denise Kortez
Email: starbaseportland@gmail.com
Website: None

**Indicates location also coordinates a DoD STARBASE 2.0 Program.*

BEAVERTON

CHEHALEM ELEMENTARY
MCKAY ELEMENTARY
VOSE ELEMENTARY

CANBY

KNIGHT ELEMENTARY
LEE ELEMENTARY

PRIVATE

BRIDGES
GRESHAM HOMESCHOOL CO-OP

PORTLAND PUBLIC SCHOOLS

ASTOR ELEMENTARY
CESAR CHAVEZ
CRESTON ELEMENTARY
FAUBION ELEMENTARY
GROUT ELEMENTARY
HARRISON PARK
JASON LEE ELEMENTARY
RIGLER ELEMENTARY
ROSA PARKS
SCOTT ELEMENTARY
SITTON ELEMENTARY
VERNON ELEMENTARY
VESTAL ELEMENTARY
WOODLAWN ELEMENTARY
WOODSTOCK ELEMENTARY

REYNOLDS

ALDER ELEMENTARY
MARGARET SCOTT
WILKES ELEMENTARY

PUERTO RICO**CAROLINA****STARBASE Puerto Rico**

Service Component: National Guard
Military Location: 156AW Muniz ANG Base
Address:
200 Jose A. Tony Santana Avenue.
Carolina, Puerto Rico 00979
Tel: 787-253-5100 X-2539502
Fax: 787-253-2513
Director: Urbano Ayala
Email: urbano.starbasepr@gmail.com
Website: None

AGUADILLA

LICEO AGUADILLANO

AGUAS BUENAS

CASA/CAP

BAYAMÓN

CRISTOBAL COLON

BAYAMON III

TALLER ARTIC
MARIA VAZQUEZ UMPIERRE

CAROLINA

CRUZ SALGUERO TORRES
DEPENDIENTES PRNG

CAMUY

COL MI PEQUENO REBANO

CANÓVANAS

ACADEMIA BAUTISTA SOTERO
FÉLIX SÁNCHEZ CRUZ
PEDRO GUTIERREZ

COROZAL

JOSE FERNANDEZ RUBIAL

GUAYNABO

EL CONQUISTADOR

GURABO

LUIS MUÑOZ GRILLO

SAN JUAN

ABRAHAN LINCOLN
 DR. RAFAEL LOPEZ SICARDO
 LIGA ATLÉTICA POLICIACA
 LUIS MUNOZ RIVERA
 VILLA GRANADA

SAN LORENZO

QUEBRADA HONDA

SAN SEBASTIAN

NARCISCO RABELL

YABUCOA

PADRO JORGE ROSARIO DEL VALLE

QUEMADOS

SU ANDRES SANDIN MARTINEZ

SOUTH CAROLINA**BEAUFORT****STARBASE MCAS Beaufort**

Service Component: Marine Corps

Military Location: Marine Corps Air Station Beaufort,
 South Carolina

Address:

STARBASE MCAS Beaufort
 Beaufort, South Carolina 29904

Tel: 843-524-1320

Fax: 843-524-1322

Director: Savannah French

Email: sfrench.starbase@gmail.com

Website: None

BEAUFORT COUNTY SCHOOL DISTRICT

BEAUFORT ELEMENTARY
 COOSA ELEMENTARY
 JOSEPH S. SHANKLIN ELEMENTARY
 LADY'S ISLAND ELEMENTARY
 MOSSY OAKS ELEMENTARY

PORT ROYAL ELEMENTARY

RED CEDAR ELEMENTARY

ROBERT SMALLS INTERNATIONAL ACADEMY

SAINT HELENA ELEMENTARY

WHALE BRANCH MIDDLE SCHOOL

PRIVATE

BEAUFORT ACADEMY

HOLY TRINITY CLASSICAL CHRISTIAN

ST. GREGORY THE GREAT CATHOLIC

ST. PETERS CATHOLIC

THOMAS HEYWARD ACADEMY

SOUTH CAROLINA/FORT STEWART/DoDDS-CUBA**DISTRICT DDESS**

BOLDEN ELEMENTARY SCHOOL

EASTOVER**STARBASE Swamp Fox**

Service Component: National Guard

Military Location: McEntire Joint National Guard Base

Address:

1325 South Carolina Road

Eastover, South Carolina 29044

Tel: 803-647-8126

Fax: 803-647-8195

Director: John M. "Coach" Motley, Jr.

Email: john.m.motley.nfg@mail.mil

Website: www.scstarbase.org

CALHOUN COUNTY PUBLIC SCHOOLS

SANDY RUN K-8 SCHOOL

DIOCESE OF CHARLESTON

ST. JOHN NEUMANN CATHOLIC

ST. JOSEPH CATHOLIC

ST. PETER'S CATHOLIC

LEXINGTON SCHOOL DISTRICT ONE

DEERFIELD ELEMENTARY

LEXINGTON SCHOOL DISTRICT TWO

B.C. GRAMMAR SCHOOL

LEXINGTON-RICHLAND SCHOOL DISTRICT FIVE

H.E. CORLEY ELEMENTARY
IRMO ELEMENTARY

RICHLAND SCHOOL DISTRICT ONE

BURNSIDE ELEMENTARY
CARVER-LYON ELEMENTARY
FOREST HEIGHTS ELEMENTARY
GADSDEN ELEMENTARY
HOPKINS ELEMENTARY
HORRELL HILL ELEMENTARY
MILLCREEK ELEMENTARY
WEBBER ELEMENTARY

RICHLAND SCHOOL DISTRICT TWO

FOREST LAKE ELEMENTARY

SUMTER SCHOOL DISTRICT

F.J. DELAINE ELEMENTARY
WILDER ELEMENTARY
WILLOW DRIVE ELEMENTARY

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

Service Component: National Guard

Military Location: Camp Rapid

Address:

2823 West Main Street,
Camp Rapid, Building 801
Rapid City, South Dakota 57702

Tel: 605-393-5410

Fax: None

Director: Polly Unterbrunner

Email: polly@sdstarbase.org

Website: sdstarbase.org

CUSTER SCHOOL DISTRICT 16-1

CUSTER ELEMENTARY
HERMOSA ELEMENTARY

EAGLE BUTTE SCHOOL DISTRICT 20-1

CHEYENNE EAGLE BUTTE ELEMENTARY
EDGEMONT SCHOOL DISTRICT
EDGEMONT ELEMENTARY

HOT SPRINGS SCHOOL DISTRICT 23-2

HOT SPRINGS ELEMENTARY

KADOKA AREA SCHOOL DISTRICT

KADOKA ELEMENTARY

LYMAN SCHOOL DISTRICT

PRESHO ELEMENTARY
KENNEBEC ELEMENTARY

MEADE SCHOOL DISTRICT 46-1

PIEDMONT VALLEY ELEMENTARY
STURGIS ELEMENTARY
WHITEWOOD ELEMENTARY

NEWELL SCHOOL DISTRICT

NEWELL ELEMENTARY

NEW UNDERWOOD SCHOOL DISTRICT 51-3

NEW UNDERWOOD ELEMENTARY

PIERRE INDIAN LEARNING CENTER

PIERRE INDIAN LEARNING CENTER

PRIVATE SCHOOL ON PINE RIDGE INDIAN RESERVATION

RED CLOUD INDIAN SCHOOL

SHANNON COUNTY SCHOOL DISTRICT 65-1

BATESLAND ELEMENTARY

ST. JOSEPH INDIAN SCHOOL

ST. JOSEPH INDIAN SCHOOL

STANLEY COUNTY PUBLIC SCHOOLS 57-1

STANLEY COUNTY ELEMENTARY

STARBASE Rapid City

Service Component: National Guard

Military Location: Camp Rapid

Address:

2823 West Main Street,

Camp Rapid, Building 801

Rapid City, South Dakota 57702

Tel: 605-393-5410

Fax: None

Director: Polly Unterbrunner

Email: polly@sdstarbase.org

Website: sdstarbase.org

DOUGLAS SCHOOL DISTRICT

VANDENBERG ELEMENTARY

RAPID CITY AREA SCHOOLS

CANYON LAKE ELEMENTARY

GENERAL BEADLE ELEMENTARY

HORACE MANN ELEMENTARY

KNOLLWOOD HEIGHTS ELEMENTARY

RAPID VALLEY ELEMENTARY

ROBINSDALE ELEMENTARY

SOUTH CANYON ELEMENTARY

SOUTH PARK ELEMENTARY

VALLEY VIEW ELEMENTARY

SIOUX FALLS**STARBASE NOVA Courage**

Service Component: National Guard

Military Location: South Dakota National Guard

Address:

801 W. National Guard Drive

Sioux Falls, South Dakota 57104

Tel: 605-367-4930

Fax: 605-367-4926

Director: Vonny Revell

Email: vonny@sdstarbase.org

Website: www.sdstarbase.org

ANDES CENTRAL SCHOOL DISTRICT

LAKE ANDES ELEMENTARY

ARMOUR SCHOOL DISTRICT

ARMOUR ELEMENTARY

AVON SCHOOL DISTRICT

AVON ELEMENTARY

BIG STONE SCHOOL DISTRICT

BIG STONE CITY

BROWNS VALLEY SCHOOL DISTRICT

BROWNS VALLEY ELEMENTARY

DAY COUNTY SCHOOL DISTRICT

ENEMY SWIM DAY SCHOOL

HURON SCHOOL DISTRICT

HURON ELEMENTARY

HOLY TRINITY SCHOOL

IROQUOIS SCHOOL DISTRICT

IROQUOIS ELEMENTARY

SISSETON SCHOOL DISTRICT

ROSHOLT ELEMENTARY

SISSETON ELEMENTARY

SUMMIT SCHOOL DISTRICT

SUMMIT ELEMENTARY

WAGNER SCHOOL DISTRICT

WAGNER ELEMENTARY

WAUBAY SCHOOL DISTRICT

WAUBAY ELEMENTARY

WEBSTER SCHOOL DISTRICT

WEBSTER ELEMENTARY

WILMONT SCHOOL DISTRICT

WILMONT ELEMENTARY

STARBASE Sioux Falls

Service Component: National Guard
 Military Location: South Dakota National Guard
 Address:
 801 W. National Guard Drive
 Sioux Falls, South Dakota 57104
 Tel: 605-367-4930
 Fax: 605-367-4926
 Director: Vonny Revell
 Email: vonny@sdstarbase.org
 Website: www.sdstarbase.org

GARRETSON SCHOOL DISTRICT

GARRETSON ELEMENTARY

PRIVATE

SIOUX FALLS LUTHERAN
 ST. LAMBERT ELEMENTARY

SIOUX FALLS SCHOOL DISTRICT

ALL CITY ELEMENTARY
 ANNE SULLIVAN ELEMENTARY
 EUGENE FIELD ELEMENTARY
 HAWTHORNE ELEMENTARY
 HAYWARD ELEMENTARY
 HORACE MANN ELEMENTARY
 LAURA B. ANDERSON ELEMENTARY
 LONGFELLOW ELEMENTARY
 LOWELL ELEMENTARY
 RENBERG ELEMENTARY
 ROBERT FROST ELEMENTARY
 SUSAN B. ANTHONY ELEMENTARY
 TERRY REDLIN ELEMENTARY

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

Service Component: National Guard
 Military Location: Camp Mabry
 Address:
 2200 W. 25th Street
 Austin, Texas 78703
 Tel: 512-782-3454
 Fax: None
 Director: Patrick Yonnone
 Email: patrick@starbaseaustin.org
 Website: starbaseaustin.org

AUSTIN INDEPENDENT SCHOOL DISTRICT

BARRINGTON ELEMENTARY
 BROWN ELEMENTARY
 DAVIS ELEMENTARY
 MCBEE ELEMENTARY
 NORMAN ELEMENTARY
 SUNSET VALLEY ELEMENTARY

DEL VALLE INDEPENDENT SCHOOL DISTRICT

BATY ELEMENTARY
 CREEDMOOR ELEMENTARY
 DEL VALLE ELEMENTARY
 HILLCREST ELEMENTARY
 HORNSBY-DUNLAP ELEMENTARY
 POPHAM ELEMENTARY
 SMITH ELEMENTARY

HAYS CONSOLIDATED INDEPENDENT SCHOOL DISTRICT

SCIENCE HALL ELEMENTARY

HUTTO INDEPENDENT SCHOOL DISTRICT

COTTONWOOD CREEK ELEMENTARY
 HOWARD NORMAN ELEMENTARY
 HUTTO ELEMENTARY
 NADINE JOHNSON ELEMENTARY
 RAY ELEMENTARY
 VETERAN'S HILL ELEMENTARY

PRIVATE SCHOOL

OUR SAVIOR LUTHERAN
 REDEEMER LUTHERAN
 ST. AUSTIN CATHOLIC
 ST. FRANCIS
 ST. IGNATIUS MARTYR CATHOLIC
 ST. PAUL LUTHERAN
 ST. THERESA'S CATHOLIC
 THE GIRL'S SCHOOL OF AUSTIN

HOUSTON**Texas STARBASE Houston**

Service Component: National Guard
 Military Location: 147th Reconnaissance Wing, Ellington Field
 Address:
 14657 Sneider Street, Building #1055 & 1056
 Houston, Texas 77034
 Tel: 281-929-2034
 Fax: 281-929-2036
 Director: Loraine Guillen
 Email: loraine.guillen@us.af.mil
 Website: None

ARCHDIOCESES OF GALVESTON-HOUSTON

OUR LADY OF FATIMA

GALENA PARK INDEPENDENT SCHOOL DISTRICT

CIMARRON ELEMENTARY
 CLOVERLEAF ELEMENTARY
 GALENA PARK ELEMENTARY
 HAVARD ELEMENTARY
 NORTH SHORE ELEMENTARY
 PURPLE SAGE ELEMENTARY
 SAM HOUSTON ELEMENTARY
 SHIRLEY J. WILLIAMSON ELEMENTARY
 TICE ELEMENTARY

HOME SCHOOL

GULF COAST CHRISTIAN HOME SCHOOL SCHOLARS

HOUSTON INDEPENDENT SCHOOL DISTRICT

JAMES H. LAW ELEMENTARY
 PLEASANTVILLE ELEMENTARY
 SANCHEZ ELEMENTARY
 VALLEY WEST ELEMENTARY

HUMBLE INDEPENDENT SCHOOL DISTRICT
WHISPERING PINES ELEMENTARY**LA PORTE INDEPENDENT SCHOOL DISTRICT**
BAYSHORE ELEMENTARY**PASADENA INDEPENDENT SCHOOL DISTRICT**

BOBBY SHAW MIDDLE SCHOOL
 DEZAVALA MIDDLE SCHOOL
 DR. DIXIE MELILO MIDDLE SCHOOL
 EARNESTEEN MILSTEAD MIDDLE SCHOOL
 LONNIE B. KELLER MIDDLE SCHOOL
 MARSHALL KENDRICK MIDDLE SCHOOL
 MORRIS MIDDLE SCHOOL
 RICK SCHNEIDER MIDDLE SCHOOL
 SHELDON ELEMENTARY

PRIVATE

BAY AREA CHRISTIAN SCHOOL

SHELDON INDEPENDENT SCHOOL DISTRICT

CARROLL ELEMENTARY
 GARRETT ELEMENTARY

TX DISTRICT LUTHERAN CHURCH-MISSOURI SYNOD
TRINITY LUTHERAN**SAN ANTONIO****STARBASE Kelly**

Service Component: Air Force Reserve
 Military Location: JBASA-Lackland
 Address:
 203 Galaxy Road
 JBASA-Lackland, Texas 78236
 Tel: 210-925-3708
 Fax: 210-925-3702
 Director: Jaun C. Villareal
 Email: starbasekelly@gmail.com
 Website: None

ARCHDIOCESE OF SAN ANTONIO CATHOLIC SCHOOLS

ST. JAMES THE APOSTLE CATHOLIC
 ST. JOHN BOSCO CATHOLIC

EDGEWOOD INDEPENDENT SCHOOL DISTRICT

GARDENDALE ELEMENTARY
 HENRY B. GONZALEZ ELEMENTARY
 LAS PALMAS ELEMENTARY
 LOMA PARK ELEMENTARY
 PERALES ELEMENTARY
 ROOSEVELT ELEMENTARY
 STAFFORD ELEMENTARY
 WINSTON ELEMENTARY

SOUTHWEST INDEPENDENT SCHOOL DISTRICT

ELM CREEK ELEMENTARY
 HIDDEN COVE ELEMENTARY
 SKY HARBOUR ELEMENTARY

SOUTH SAN ANTONIO INDEPENDENT SCHOOL DISTRICT

PALO ALTO ELEMENTARY
 PRICE ELEMENTARY
 ROY P. BENAVIDEZ ELEMENTARY

UTAH**OGDEN****STARBASE Hill Screaming Eagles**

Service Component: Air Force
 Military Location: Hill Air Force Base
 Address:
 5731 E Avenue
 Hill AFB, Utah 84056
 Tel: 801-586-7494
 Fax: None
 Director: Frances Bradshaw
 Email: frances.bradshaw@starbasehill.com
 Website: www.starbasehill.com

CHARTER

DAVINCI ACADEMY OF SCIENCE AND ARTS

DAVIS COUNTY SCHOOL DISTRICT

ADELAIDE ELEMENTARY
 CRESTVIEW ELEMENTARY
 ENDEAVOUR ELEMENTARY
 HERITAGE ELEMENTARY
 HILL FIELD ELEMENTARY
 HOLT ELEMENTARY
 KING ELEMENTARY

LAYTON ELEMENTARY
 LINCOLN ELEMENTARY
 MEADOWBROOK ELEMENTARY
 SAND SPRINGS ELEMENTARY
 SNOW HORSE ELEMENTARY
 SOUTH CLEARFIELD ELEMENTARY
 SUNSET ELEMENTARY
 VAE VIEW ELEMENTARY
 WASHINGTON ELEMENTARY

PRIVATE

ST. JOSEPH CATHOLIC

VERMONT**RUTLAND****STARBASE Vermont - Rutland**

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

ADDISON CENTRAL SUPERVISORY UNION

SALISBURY COMMUNITY SCHOOL
 SHOREHAM ELEMENTARY SCHOOL

ADDISON RUTLAND SUPERVISORY UNION

BENSON VILLAGE SCHOOL
 CASTLETON ELEMENTARY
 ORWELL VILLIAGE SCHOOL

BENNINGTON RUTLAND SUPERVISORY UNION

CURRIER MEMORIAL SCHOOL

MILL RIVER UNION SCHOOL DISTRICT

WALLINGFORD ELEMENTARY

RUTLAND CENTRAL SUPERVISORY UNION

PROCTOR ELEMENTARY
RUTLAND TOWN SCHOOL
WEST RUTLAND SCHOOL

RUTLAND CITY PUBLIC SCHOOL DISTRICT

RUTLAND INTERMEDIATE SCHOOL
RUTLAND DIOCESE
RUTLAND AREA CHRISTIAN SCHOOL
CHRIST THE KING SCHOOL

RUTLAND NORHTEAST SUPERVISORY UNION

BARSTOW ELEMENTARY
LEICESTER CENTRAL SCHOOL
LOTHROP SCHOOL
NESHOBIE SCHOOL
SUDBURY COUNTY SCHOOL
WHITING SCHOOL

RUTLAND SOUTHWEST SUPERVISORY UNION

POULTNEY ELEMENTARY

SOUTHWEST VERMONT SUPERVISORY UNION

SHAFTSBURY ELEMENTARY

TWO RIVERS SUPERVISORY UNION

CAVENDISH TOWN ELEMENTARY
LUDLOW ELEMENTARY

WHITE RIVER VALLEY SUPERVISORY UNION

ROCHESTER SCHOOL

WINDHAM CENTRAL SUPERVISORY UNION

JAMAICA VILLAGE SCHOOL
KILLINGTON ELEMENTARY
WARDSBORO ELEMENTARY

WINDSOR SOUTHEAST SUPERVISORY UNION

ALBERTS BRIDGE SCHOOL
KILLINGTON ELEMENTARY SCHOOL
MOUNT HOLLY
ELEMENTARY
PROCTOR ELEMENTARY
RIPTON ELEMENTARY SCHOOL
WELLS VILLAGE SCHOOL

SOUTH BURLINGTON

STARBASE Vermont - South Burlington

Service Component: National Guard
Military Location: Vermont National Guard
Address:
62 NCO Drive
South Burlington, Vermont 05403
Tel: 802-660-5201
Fax: 802-660-5940
Director: Dan Myers
Email: dan@starbasevt.org
Website: www.starbasevt.org

ADDISON NORTHEAST SUPERVISORY UNION

BRISTOL ELEMENTARY

ADDISON NORTHWEST SUPERVISORY UNION

VERGENNES ELEMENTARY

BURLINGTON DIOCESE

CHRIST THE KING
ST. FRANCIS XAVIER

BURLINGTON SCHOOL DISTRICT

C.P. SMITH SCHOOL
INTEGRATED ARTS ACADEMY
JOHN J. FLYNN ELEMENTARY

CHITTENDEN EAST SUPERVISORY UNION

BROWNS RIVER MIDDLE

FRANKLIN CENTRAL SUPERVISORY UNION

HIGHGATE ELEMENTARY
ISLE LA MOTTE SCHOOL
NORTH HERO ELEMENTARY
ST. ALBANS TOWN EDUCATIONAL CENTER
SWANTON CENTRAL SCHOOL

FRANKLIN WEST SUPERVISORY UNION

BELLOWS FREE ACADEMY - FAIRFAX
FLETCHER ELEMENTARY

LAMOILLE NORTH SUPERVISORY UNION

CAMBRIDGE ELEMENTARY
JOHNSON ELEMENTARY

SOUTH BURLINGTON SCHOOL DISTRICT
ORCHARD ELEMENTARY

WINOOSKI SCHOOL DISTRICT
JOHN F. KENNEDY SCHOOL

VIRGINIA

WINCHESTER

Winchester STARBASE Academy*
Service Component: National Guard
Military Location: Virginia National Guard; 3rd Battalion;
116th Infantry Regiment
Address:
181 Pendleton Road
Winchester, Virginia 22602
Tel: 540-686-4964
Fax: None
Director: Susan Corrigan
Email: susan.b.corrigan.nfg@mail.mil
Website: starbasewinchester.webs.com

CLARKE COUNTY PUBLIC SCHOOLS
BOYCE ELEMENTARY

FREDERICK COUNTY PUBLIC SCHOOLS
ARMEL ELEMENTARY
GREENWOOD MILLS ELEMENTARY
MIDDLETOWN ELEMENTARY
ORCHARD VIEW ELEMENTARY
REDBUD RUN ELEMENTARY
STONEWALL ELEMENTARY

INDEPENDENT
INDEPENDENT SCHOOL OF WINCHESTER
RANDOLPH-MACON ACADEMY
SACRED HEART ACADEMY

WINCHESTER PUBLIC SCHOOLS
FREDERICK DOUGLASS ELEMENTARY
JOHN KERR ELEMENTARY
VIRGINIA AVENUE CHARLOTTE DEHART ELEMENTARY

WEST VIRGINIA

CHARLESTON

West Virginia STARBASE Academy*
Service Component: National Guard
Military Location: McLaughlin ANGB
Address:
1679 Coonskin Drive
Charleston, West Virginia 25311
Tel: 304-341-6440
Fax: None
Director: Robin Barnette
Email: robin.d.barnette.nfg@mail.mil
Website: www.wvstarbase.org

KANAWHA COUNTY

ALBAN ELEMENTARY
ALUM CREEK ELEMENTARY
ANDREW HEIGHTS ELEMENTARY
ANNE BAILEY ELEMENTARY
BIBLE CENTER ELEMENTARY
BRIDGE ELEMENTARY
BRIDGEVIEW ELEMENTARY
CENTRAL ELEMENTARY
CHAMBERLAIN ELEMENTARY
CHESAPEAKE ELEMENTARY
CLEDENIN ELEMENTARY
CROSS LANES ELEMENTARY
DUNBAR ELEMENTARY
DUNBAR INTERMEDIATE
EDGEWOOD ELEMENTARY
ELK CENTER ELEMENTARY
GRANDVIEW ELEMENTARY
HOLZ ELEMENTARY
KENNA ELEMENTARY
LAKEWOOD ELEMENTARY
MIDLAND TRAIL ELEMENTARY
MONTROSE ELEMENTARY
NITRO ELEMENTARY
PIEDMONT ELEMENTARY
POINT HARMONY ELEMENTARY
RICHMOND ELEMENTARY
SHOALS ELEMENTARY
SISSONVILLE MIDDLE
WEIMER ELEMENTARY

**Indicates location also coordinates a DoD STARBASE 2.0 Program.*

MARTINSBURG

STARBASE Martinsburg*

Service Component: National Guard
Military Location: 167th Airlift Wing
Address:
222 Sabre Jet Boulevard
Martinsburg, West Virginia 25405
Tel: 304-616-5501
Fax: 304-616-5478
Director: Sherra Triggs
Email: sherra.l.triggs.civ@mail.mil
Website: www.starbasemartinsburg.webs.com

BERKELEY COUNTY PUBLIC SCHOOLS

EAGLE SCHOOL INTERMEDIATE
FAITH CHRISTIAN ACADEMY
MILL CREEK INTERMEDIATE
MOUNTAIN RIDGE INTERMEDIATE
ORCHARD VIEW INTERMEDIATE
POTOMACK INTERMEDIATE
ST. JOSEPH SCHOOL
TOMAHAWK INTERMEDIATE

JEFFERSON COUNTY PUBLIC SCHOOLS

C.W. SHIPLEY ELEMENTARY
SHEPHERDSTOWN ELEMENTARY
SOUTH JEFFERSON ELEMENTARY
T.A. LOWERY ELEMENTARY
WRIGHT DENNY INTERMEDIATE

MILWAUKEE PUBLIC SCHOOLS

ANNA F. DOERFLER SCHOOL
BROWN STREET ACADEMY
CLARK STREET SCHOOL
CONGRESS ELEMENTARY
DOWNTOWN MONTESSORI
DR. BENJAMIN CARSON ACADEMY OF SCIENCE
EARLY VIEW ACADEMY OF EXCELLENCE
ENGLEBURG ELEMENTARY
GRANTOSA DRIVE ELEMENTARY
GREENFIELD BILINGUAL SCHOOL
HOPKINS-LLOYD COMMUNITY SCHOOL
JEREMIAH CURTIN LEADERSHIP ACADEMY
LOWELL P. GOODRICH SCHOOL
MANITOBA ELEMENTARY
MAPLE TREE SCHOOL
MARVIN E. PRATT ELEMENTARY
MARY MCLEAD BETHUNE ACADEMY
METCALFE ELEMENTARY
MILWAUKEE SPANISH IMMERSION SCHOOL
NATHANIAL HAWTHORNE SCHOOL
PARKVIEW ELEMENTARY
RALPH WALDO EMERSON SCHOOL
RIVER TRAIL SCHOOL
THURSTON WOODS CAMPUS SCHOOL
TROWBRIDGE SCHOOL OF DISCOVERY AND TECHNOLOGY
WALT WHITMAN ELEMENTARY
WILLIAM GEORGE BRUCE SCHOOL

WISCONSIN

MILWAUKEE

STARBASE Wisconsin

Service Component: National Guard
Military Location: U.S. Army Reserve Center
Address:
5130 W. Silver Spring Drive
Milwaukee, Wisconsin 53218
Tel: 414-535-5786
Fax: None
Director: John W. Puttre
Email: jputtre@starbasewi.org
Website: www.starbasewi.org

*Indicates location also coordinates a DoD STARBASE 2.0 Program.

WYOMING

CHEYENNE

Wyoming STARBASE Academy

Service Component: National Guard

Military Location: Wyoming National Guard

Address:

5410 Bishop Boulevard

Cheyenne, Wyoming 82009

Tel: 307-777-8191

Fax: 307-777-8190

Director: Germaletta Brown

Email: gremaletta.brown@starbasewy.org

Website: starbase.wyo.gov

PRIVATE SCHOOL

ST. MARY'S CATHOLIC

PODER ACADEMY

LARAMIE COUNTY SCHOOL DISTRICT #1

AFFLERBACH ELEMENTARY

ALTA VISTA ELEMENTARY

ANDERSON ELEMENTARY

ARP ELEMENTARY

BAGGS ELEMENTARY

BAIN ELEMENTARY

BUFFALO RIDGE ELEMENTARY

COLE ELEMENTARY

DAVIS ELEMENTARY

DILDINE ELEMENTARY

FAIRVIEW ELEMENTARY

FREEDOM ELEMENTARY

GILCHRIST ELEMENTARY

GOINS ELEMENTARY

HEBARD ELEMENTARY

HENDERSON ELEMENTARY

HOBBS ELEMENTARY

JESSUP ELEMENTARY

MILLER ELEMENTARY

PINE BLUFFS ELEMENTARY

PIONEER PARK ELEMENTARY

PRAIRIE WIND ELEMENTARY

ROSSMAN ELEMENTARY

SADDLE RIDGE ELEMENTARY

SUNRISE ELEMENTARY

LARAMIE COUNTY SCHOOL DISTRICT #2

ALBIN ELEMENTARY

BURNS ELEMENTARY



For more information contact:

Office of the Assistant Secretary of Defense/Reserve Affairs (OASD/M&RA)
1500 Defense Pentagon
Washington, DC 20301-1500
Phone: 703.693.8630

www.DoDSTARBASE.org