DoD STARBASE
A Department of Defense Youth Program

2011 ANNUAL REPORT

FORWARD FROM THE ACTING ASSISTANT SECRETARY OF DEFENSE FOR RESERVE AFFAIRS

The DoD STARBASE Program is an effective outreach and integrated educational program that continues to enhance the interest of learning science, technology, engineering, and mathematics (STEM) among our nation's youth. It is a valued and relevant program in local communities that is helping to build and enlarge the talent pool of potential innovative workers needed to support the DoD workforce consisting of civilian and military personnel.

In FY 2011, the DoD STARBASE Program operated at 60 locations in 34 states, the District of Columbia, and Puerto Rico. Military commanders partnered with 1,161 schools from 385 school districts to serve over 60,000 students. Approximately 700,000 students have participated in the program since its inception. Funding was provided to establish 16 additional locations, increasing the total number of locations to 76 with the capacity to reach over 75,000 students annually.

The 2011 DoD STARBASE Annual Report discusses the linkage that exists between military commands, public school districts, and non-governmental organizations. It highlights the approaches taken to strengthen the community relationships and provide a worthwhile STEM education experience for the participating students. The report provides an update on the installation of the enhanced standardized program curriculum at all the program locations. It emphasizes how the program continues to expose students to positive role models within the military services. This facet of the DoD STARBASE Program, and the support it receives from senior military leadership, is critical to the students' success. Comments within this report from Lt. Gen. Charles E. Stenner, Jr., Chief of Air Force Reserve and Commander Air Force Reserve Command; Rear Admiral Thomas J. Moore, Program Executive Officer, Aircraft Carriers; and Brig. Gen. Brod Veillon, Assistant Adjutant General – Air of the Louisiana National Guard, provide insight into the value of the program. There are also observations from Keith J. Masback, President, United States Geospatial Intelligence Foundation and Paula M. Harris, President of the Houston Independent School District Board of Education. They provide an industry and educational perspective of the DoD STARBASE Program, explaining why they are strong supporters of the program.

The DoD STARBASE Program Annual Report is an investment in the future of our youth and nation.

David L. McGinnis

TABLE OF CONTENTS

STARBASE STUDENTS SHINE IN STATE AND NATIONAL COMPETITIONS

The challenging and exciting DoD STARBASE curriculum inspires students to engage in the exploration of Science, Technology, Engineering, and Mathematics (STEM). The program ignites a spark that motivates fifth-grade students to explore STEM in middle and high school and to participate in local STEM competitions. These students share a common appreciation for the hands-on experiences that characterize DoD STARBASE. This year several graduates earned state and national recognition for their efforts in STEM.

New Mexico Graduates Earn National Recognition

HALEY AND JACK HANSON, A BROTHER AND SISTER TEAM FROM NEW MEXICO AND STARBASE GRADUATES, EARNED AN INVITATION FROM PRESIDENT OBAMA TO PARTICIPATE IN THE WHITE HOUSE SCIENCE FAIR.

Haley and Jack Hanson, a brother and sister team from New Mexico, earned an invitation from President Obama to participate in the White House Science Fair in October 2010. They designed a survival computer game, using the Spore video game platform, which won first place in the Game Changers Kid Competition. Haley wrote the script and text for the video game while Jack developed the game's logic and designed the creatures and scenery. The John D. and Catherine T. MacArthur Foundation funded the competition and the Humanities, Arts, Science, and Technology Advanced Collaboratory (HASTAC).

Both Hansons are DoD STARBASE graduates: Haley attended the academy in La Luz, N.M. during the 2006-2007 school year and Jack in 2008-2009. Haley recalls her DoD STARBASE experiences as being a lot of fun. The positive memories continue to influence her as she embraces new opportunities to engage in STEM activities.

Lana Kimmel, another La Luz graduate, also received national recognition this year. One of Lana's favorite DoD STARBASE lessons was, "Eggbert," an engineering design activity in which students design a passive restraint system to protect Eggbert, a farm fresh egg, in a crash landing. Motivated to explore the engineering design process further, she joined three teammates to participate in the national Team America Rocketry Challenge (TARC), and in May 2011, her all girls team placed fourth in the national Team America Rocketry Challenge where they successfully built and launched a rocket that carried an egg up 750 feet in the air and then delivered the egg safely back to Earth in 45 seconds. (Eggbert would have been proud!) Her goal for next year is to win the TARC competition and compete in the international competition in England.

The three students were subsequently honored by the Business and Industry STEM Coalition in Washington DC on Sept. 14, 2011. The reception honoring outstanding youth in science, technology, and engineering was attended by New Mexico Senator Tom Udall and Senator Jeff Bingaman as well as business and industry leaders from across the country.

STARBASE Louisiana Graduates Place in National Science Olympiad

Nine STARBASE graduates composed the majority of a 15-member team from St. John Berchman's Catholic School in Shreveport, LA that won first place in the regional competition at the University of Louisiana at Monroe. This earned them a chance to compete at the national Science Olympiad in Madison, WI, where they placed fourth in the "battery buggy" event. Their "battery buggy" is an electric-powered vehicle that can quickly travel a specified distance and stop as close as possible to the center of the finish line. The team also placed seventh in ecology.

"STARBASE has been a great spring board for Science Olympiad team members," said Amy Simon, a coach for the nationally recognized team. "As fifth graders, students are exposed to fantastic hands-on science activities offered by STARBASE. They become interested in things they may not have heard of before."

Sixth-grader, Mari Marcalus, summed up her experiences: "At STARBASE, I learned about atoms, how to program a robot, and chromatography. I also learned how to use a geographical map and how to launch a bottle rocket. Then, I realized that these were all related to stuff in Science Olympiad. For example, atoms – Microbe Mission, Chromatography – Crime Busters, Geographical Maps – Road Scholar. I had no idea that the things they taught at STARBASE, I would use at other places and times in life."

These students are putting their DoD STARBASE-inspired skills to use by voluntarily working on the Science Olympiad, staying after school and spending their weekends honing their projects and skills.

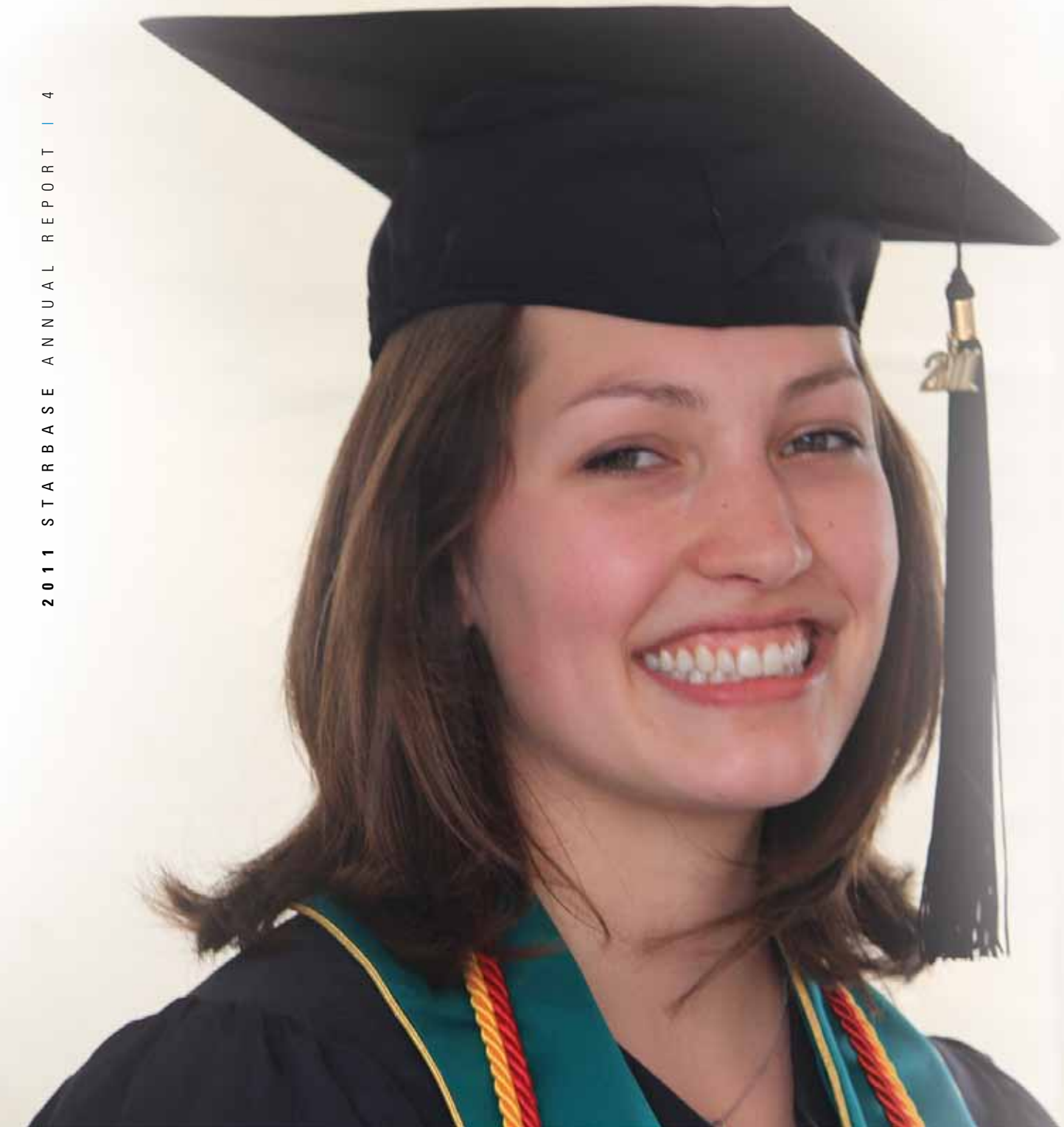
STARBASE Rhode Island Students Win First Place in State Science Olympiad

"Thanks for lighting the sparks for these kids!" Jean Douglas, a parent of a DoD STARBASE graduate, wrote to STARBASE Atlantis-Newport Director Patrick Rossoni after her daughter's team at Wickford Middle School placed first out of more than 40 teams in the Rhode Island Science Olympiad Competition.

In the national competition, the team had its strongest scores in the topics that they had studied at DoD STARBASE. Of the 60 teams in the B Division, comprised of sixth-through ninth-graders, they placed 10th in Technology and Engineering, 18th in Inquiry and Nature of Science, and 19th in Physical Science and Chemistry.

Winning these competitions involved spending after-school hours and weekends engaged in their projects. All reported that they did not mind the hard work because they had a great time learning and working as a team.

DoD STARBASE is proud of its graduates and pleased to be the catalyst that sparked their interest in STEM.



A LETTER FROM A DoD STARBASE GRADUATE, TERESA "SPEEDY" GONZALEZ

Dear STARBASE Vermont,

Thank you for giving me a love for science! The experiences that you gave me captured my interest in science and made it applicable to me as a young student. I still remember the group exercises and the fun that we all had getting to know one another.

I loved learning the basics of flight on the flight stimulators. Making rockets with our individual roles, I think mine was quality control, and then blasting the rockets off at the end of the academy, which was literally the ultimate send- off! I didn't want to give STARBASE up after graduation and decided to return the next year to help. I felt stronger in my abilities to lead and participate.

This foundational program allowed me to experience science, and it created a love for it. Eleven years later, I have earned my BA degree in biology from the University of Vermont and have dedicated my life to the love of science and all the outlets it provides.

I am currently opening a business with my fiancé and am hoping the University will admit me to the Doctor of Physical Therapy program. I want to thank STARBASE for bringing the fun into learning and allowing me to establish my goals at such a young age. Thank you!

Sincerely,

Teresa "Speedy" Gonzalez

"I DIDN'T WANT TO GIVE STARBASE UP AFTER GRADUATION AND DECIDED TO RETURN THE NEXT YEAR TO HELP. I FELT STRONGER IN MY ABILITIES TO LEAD AND PARTICIPATE.

I WANT TO THANK STARBASE FOR BRINGING THE FUN INTO LEARNING AND ALLOWING ME TO ESTABLISH MY GOALS AT SUCH A YOUNG AGE."

DoD STARBASE ACCOLADES

WHAT STUDENTS SAY

"My favorite thing in STARBASE was getting to protect Eggbert on his flight to the moon. My group put our minds together, and Eggbert was fine. It looked like all the hoping, praying, and biting our fingernails worked. I was so happy. We all slapped high fives!"

– STARBASE North Carolina, NC

"The experience was unbelievable. I learned so much; so much that I'm teaching my dad and mom!"

– STARBASE Oklahoma, Tulsa, OK

"STARBASE changed the way I feel about science, as I feel more confident about my answers. Before when a teacher asked a question, I wouldn't raise my hand."

– STARBASE Atlantis-Pax River, Pax River, MD

"I never worked as a team in my life like this before, and when I used to work as a team, I was selfish. But now, I learned about how a real team works. Teamwork made my job easier."

– STARBASE Hartford, Hartford, CT

WHAT PARENTS SAY

"I felt the program opened up a new part of his brain, like a breath of fresh air filled with possibilities."

– STARBASE Minnesota, St. Paul, MN

"This is a great opportunity for kids to learn in an interactive hands-on environment. It gives them a much different learning experience than their classrooms allow. Thank you for doing this and for all your hard work."

– STARBASE Nebraska, Lincoln, NE.

"I'm not sure how this program is funded, but I hope it is continued. It is well worth the cost, whatever it is. To have something that engages children in math, science, and technology in such an interesting and fun atmosphere is invaluable."

– STARBASE Michigan Battle Creek, Battle Creek, MI

WHAT EDUCATORS SAY

"Over the course of our five days at STARBASE, our kids had a fantastic time. Everything they have learned has sunk in, and they are using the information daily. It was an absolute great experience for all of the students. This is a great program to be involved in."

– STARBASE North Dakota, Minot, ND

"STARBASE is a wonderful opportunity for our students. Integrating the STEM concepts creates a wonderful atmosphere for all learners. Students who struggle in my classroom find success at STARBASE. The math and science learning is excellent. The team activities with a wingman or squadron worked well. Thank you for your efforts and encouragement of the children! Thank you for inspiring me in my teaching as well!"

– STARBASE Wright-Patt, Wright Patterson Air Force Base, OH

"This was a fantastic week of learning for our students. The experiences this program provided can rarely be duplicated in a public school setting. Our limited resources or personal skill in the areas of science, math, and/or technology are not always able to provide what you provided. Our students will benefit from this learning for years to come."

– STARBASE Arizona, Tucson, AZ

WHAT MILITARY VOLUNTEERS SAY[1]

"STARBASE is a wonderful program put on by wonderful folks. It's great seeing the kids exposed to technical areas in a manner that breaks down the 'intimidation factor' such that they can get excited about STEM activities. They see, touch, and do learn things that enable them to appreciate the power and beauty of the aerospace field. I feel privileged to be able to support this program in a small way and to help it achieve its goals."

"Military members get great enjoyment out of sharing their profession and experiences. All the people I have spoken with love this program."

"I truly believe this meets the President's intent of investing in our children's education for our country's future."

[1] Opinions were selected from anonymous responses to the 2011 Military Volunteer Survey. Further results of this survey are provided in the assessment section.

"REAFFIRMING AND STRENGTHENING AMERICA'S ROLE AS THE WORLD'S ENGINE OF SCIENTIFIC DISCOVERY AND TECHNOLOGICAL INNOVATION IS ESSENTIAL TO MEETING THE CHALLENGES OF THIS CENTURY, THAT'S WHY I AM COMMITTED TO MAKING THE IMPROVEMENT OF STEM EDUCATION OVER THE NEXT DECADE A NATIONAL PRIORITY."

PRESIDENT BARACK OBAMA
NOV. 23, 2009

DOD STARBASE SUPPORTS OBAMA ADMINISTRATION'S CALL FOR WORK FORCE PREPARATION

In order to meet the country's need for an excellent work force to address the challenges of the 21st century, President Barack Obama has called on the country's leaders to reinvigorate the pipeline of ingenuity and innovation, which is the key to America's security and economic growth. To meet the need for STEM work-force development, he has cited three overarching priorities for STEM education that DoD STARBASE complements.

The three priorities are increasing STEM literacy, so all students can think critically in science, mathematics, engineering, and technology; improving the quality of mathematics and science teaching, so American students are no longer outperformed by those in other nations; and expanding STEM education and career opportunities for underrepresented groups, including women and minorities.[2]

Programs such as DoD STARBASE, which generate interest and change attitudes about STEM, are critical to meet the work-force demands of the 21st century. By the year 2018, there will be 8 million job openings in STEM-related fields, although the next generation of U.S. workers will be unprepared to take advantage of many of those positions.[3] The need is greater when we consider that the 30 fastest-growing jobs require at least some background in STEM.

Adding to these problems is the fact that, according to a recent poll, more than half of Americans between 18 and 34 admitted that they often say they cannot do mathematics. Nearly a third said they would rather clean the bathroom than solve a math problem.[4] This is an attitude prevalent among younger Americans, but after students attend DoD STARBASE, it improves. Students who attend a program become excited about STEM and STEM careers. By encouraging fifth-graders to think about STEM and STEM-related careers, students can begin making educational choices that lead to opportunities in STEM.

The fifth grade is the key year to encourage students in STEM. Empirical data suggests that students must be encouraged to explore STEM fields long before they reach eighth grade because a majority "turn off" to STEM subjects as early as the fourth grade. Students must be encouraged to take courses in STEM as early as eighth grade in order to be ready for the higher-level mathematics and science courses in high school that are the critical stepping stones to college courses needed for STEM careers. Therefore, it is imperative to interest students in the elementary years.

DoD STARBASE leads the way when it comes to changing attitudes. A comment from a student who attended STARBASE-Atlantis in Norfolk, VA indicates the positive impact of the program. He wrote, "I rated STARBASE a 9 out of 10. I learned stuff I never learned before. I like science more now because we got to figure things out with experiments instead of listening to a teacher. I also started to think that you can find out anything when you put your mind to it."

[2] President Obama Launches "Educate to Innovate" Campaign for Excellence in Science, Technology, Engineering and Mathematics (STEM) Education, The White House, Office of the Press Secretary, Nov. 23, 2009.
[3] Center on Education and the Workforce. Georgetown University
[4] http://www.changetheequation.org/why/why-stem/

AN ISSUE OF NATIONAL IMPORTANCE

The DoD STARBASE program is the beginning of the continuum of educational opportunities sponsored by the Department of Defense in Science, Technology, Engineering, and Mathematics (STEM) that culminates in advanced degrees. The Assistant Secretary for Defense Research and Engineering, Zachary J. Lemnios, summed up the reason that DoD has a strong interest in fostering STEM education: "A literate citizenry is critical if the nation is to compete more effectively in the global marketplace. The production of foreign STEM talent is growing exponentially, and U.S. institutions of higher education are facing greater competition for talent. In addition, global access to leading technology allows competitors to field capabilities in dramatically shorter periods than in the past. Those challenges affect U.S. security interest, domestically and internationally, and they affect DoD's ability to optimize discovery and innovation."

In order to ensure a literate citizenry that can compete in the global market place, DoD seeks to foster strong relationships with future scientists and engineers as well as engage teachers in transforming STEM education. The DoD STARBASE program captures students' interest in STEM at the elementary and middle school levels. This is a critical time to intervene to prevent students from losing interest in STEM. At DoD STARBASE, students' awareness of potential careers in these fields increases as they discover jobs that they had never considered. They learn the requirements for a challenging career and why studying and selecting courses in STEM is important to their future goals.

A parent from St. Paul, MN summed up the importance of the program when she wrote, "STARBASE exposes kids to possibilities. It generates excitement and allows students to master skills needed to tackle problems with unknown outcomes. I also appreciate the encouragement of girls in these fields. For too long, they have been denied the expectation that they would be competent in engineering, math, and science. This early exposure to those possibilities is crucial. STARBASE is doing a great job in this area."

DoD has a large footprint in research and engineering that includes 67 DoD laboratories in 22 states that employ 60,000 people, 35,400 of whom are degreed scientists and engineers. In addition, DoD operates 10 Federally Funded Research and Development Centers and 13 University Affiliated Research Centers.[5] Of particular concern is that as many as 60 percent of these individuals will be eligible for retirement in this decade. The need to have well-educated citizens who are able to obtain security clearance is critical for research and innovation to protect the country.

The 2009 Program for International Student Assessment (PISA) reported that the average score in the United States on mathematics literacy was 17th among 33 members of the Organization for Economic Cooperation and Development (OECD).[6] The average score in science literacy, although not appreciably different from the OECD average, was behind 11 other OECD countries.

[5] Statement of Testimony of The Honorable Zachary J. Lemnios Assistant Secretary of Defense for Research and Engineering (ASD(REW)) before the U. S. House of Representatives Committee on Armed Services, Subcommittee on Emerging Threats and Capabilities) March 1, 2011.

[6] The United States average score in mathematics literacy was below Korea, Finland, Switzerland, Japan, Canada, the Netherlands, Norway, France, and the Slovak Republic.

[7] "What are Science and Math Test Scores Really Telling U.S.," Alan S. Brown and Linda LaVine Brown in Tau Beta Phi (engineering honor society) Bent, Winter 2007, pg 13.

[8] "Shut Out of the Military," Christine Theokas, Education Trust, December 2010, pg 1.

Further examination of a similar test, Trends in International Mathematics and Science Scores (TIMMS), found that students in "affluent suburban U.S. school districts score nearly as well as students in Singapore, the runaway leader on TIMMS math scores."[7] The DoD STARBASE program targets at-risk students in order to create an opportunity for those most in need of exposure to vital STEM educational opportunities.

An additional concern for DoD is that one in five high-school graduates do not meet the minimum standard necessary to enlist in the U.S. Army. The scores also show wide disparities in eligibility by race/ethnicity. Since the tests measure a variety of occupational skills, low scores may perhaps mean these applicants are also unlikely to succeed in the civilian workforce, leaving them ineligible for high-level and advancement opportunities.[8]

Through an engaging hands-on educational program, DoD STARBASE prepares students for the jobs of tomorrow and serves as the beginning of a critical pipeline to encourage youth to become the thinkers and innovators critical for stronger national security and economic development.

VISION AND MISSION STATEMENTS OF DoD STARBASE

VISION STATEMENT

TO RAISE THE INTEREST AND IMPROVE THE KNOWLEDGE AND SKILLS OF AT-RISK YOUTH IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS, WHICH WILL PROVIDE FOR A HIGHLY EDUCATED AND SKILLED AMERICAN WORKFORCE WHO CAN MEET THE ADVANCED TECHNOLOGICAL REQUIREMENTS OF THE DEPARTMENT OF DEFENSE.

MISSION STATEMENT

BY EXPOSING YOUTH TO THE TECHNOLOGICAL ENVIRONMENTS AND POSITIVE ROLE MODELS FOUND ON MILITARY BASES AND INSTALLATIONS, WE WILL PROVIDE 20-25 HOURS OF EXEMPLARY INSTRUCTION, USING A COMMON CORE CURRICULUM THAT MEETS OR EXCEEDS THE NATIONAL STANDARDS. WE WILL NURTURE A WINNING NETWORK OF COLLABORATORS AND BUILD MUTUAL LOYALTY.

A HISTORY OF CONTINUED EXCELLENCE

DoD STARBASE originated in Detroit, MI as Project STARS. The curriculum, designed by Barbara Koscak, engaged students in science, technology, and mathematics through the use of hands-on activities based on the physics of flight. Under the guidance of Brig. Gen. David Arendts, 127th wing commander at Selfridge Air National Guard Base, students were invited to Selfridge to witness the application of scientific concepts in the "real world." National Guard personnel demonstrated the use of science, mathematics, engineering, and technology in their fields of expertise and served as role models.

In FY 1993, the U.S. Congress appropriated funds for DoD STARBASE and piloted the program in seven states. In 2010, there were 60 locations in 34 states, the District of Columbia, and Puerto Rico. In 2011, that number expanded to 76 locations in 40 states. In addition, there are four outreach programs to Native American populations.

Today's curriculum is standardized, cutting-edge, research-based instruction that meets national standards and ensures an accurate assessment of curriculum outcomes. It includes the engineering design process, 3-D computer-assisted technology, and scientific frontiers such as nanotechnology. Eleven academies sponsor a structured afterschool mentoring program, STARBASE 2.0, for middle school students. The program relies on collaboration between the sponsoring military unit, the school district, and local communities. Twenty-four academies will sponsor STARBASE 2.0 in FY 2012.

COLLABORATIONS WITH STEM ORGANIZATIONS

WESLEY FONDAL UNDERSTANDS THE IMPORTANCE OF STEM EDUCATION AND THE IMPACT IT CAN HAVE ON THE STUDENTS, TEACHERS, AND SCHOOL DISTRICTS THAT STARBASE ROBINS SERVES, AND HE HAS HELPED INFLUENCE SOME OF THE SCHOOL DISTRICTS' STEM CURRICULUM PLANNING.

DoD's STEM Education and Outreach Strategic Plan includes leveraging networks of collaborators, scientific bodies, and teaching groups to enhance STEM awareness. These relationships help to inspire, develop, and attract a world-class STEM talent pool to develop innovative solutions for the nation's current and future challenges. DoD STARBASE currently collaborates with agencies and organizations such as the National Geospatial-Intelligence Agency, the Civil Air Patrol, the Arnold Air Society, the Air Force Association, and the National Aeronautical Space Administration (NASA). The following stories are examples of how the DoD STARBASE directors connect with collaborators that share their passion, career knowledge, and real-world applications of STEM with the students and teachers participating in the DoD STARBASE program.

Wesley Fondal Jr. is the Director of STARBASE Robins located at Robins Air Force Base, GA In his 13-year tenure at STARBASE Robins, his first year as an instructor then as the director, Fondal has helped to nurture a winning network of collaborators beginning with the Museum of Aviation, where the program is located, and the Museum of Aviation Foundation. He has established relationships not only with local school districts, but also with area businesses and industry including Chick-fil-A, Wal-Mart, Zaxby's, Standard Technology, Wiley Corporation, and the Cascade Corp. This past fiscal year, he wrote a successful proposal for a competitive NASA Summer of Innovation Planning Grant that added a summer component to the DoD STARBASE 2.0 Afterschool STEM Mentoring Program.

Fondal and the STARBASE Robins staff have been successful in piloting several DoD STARBASE programs such as the Stratasys 3-D printer curriculum and DoD STARBASE 2.0. They have increased their summer programming to bring to their community much- needed hands-on instruction in engineering, technology, and robotics. Fondal also collaborated with Georgia Tech and Georgia Peachtree Regional (Georgia FIRST) to host the first-ever FIRST Lego League Regional Tournament,

the Super Regional Tournament in Central Georgia, and the off-season FIRST Robotics competition, GRITS (Georgia Robotics Invitational Tournament and Showcase).

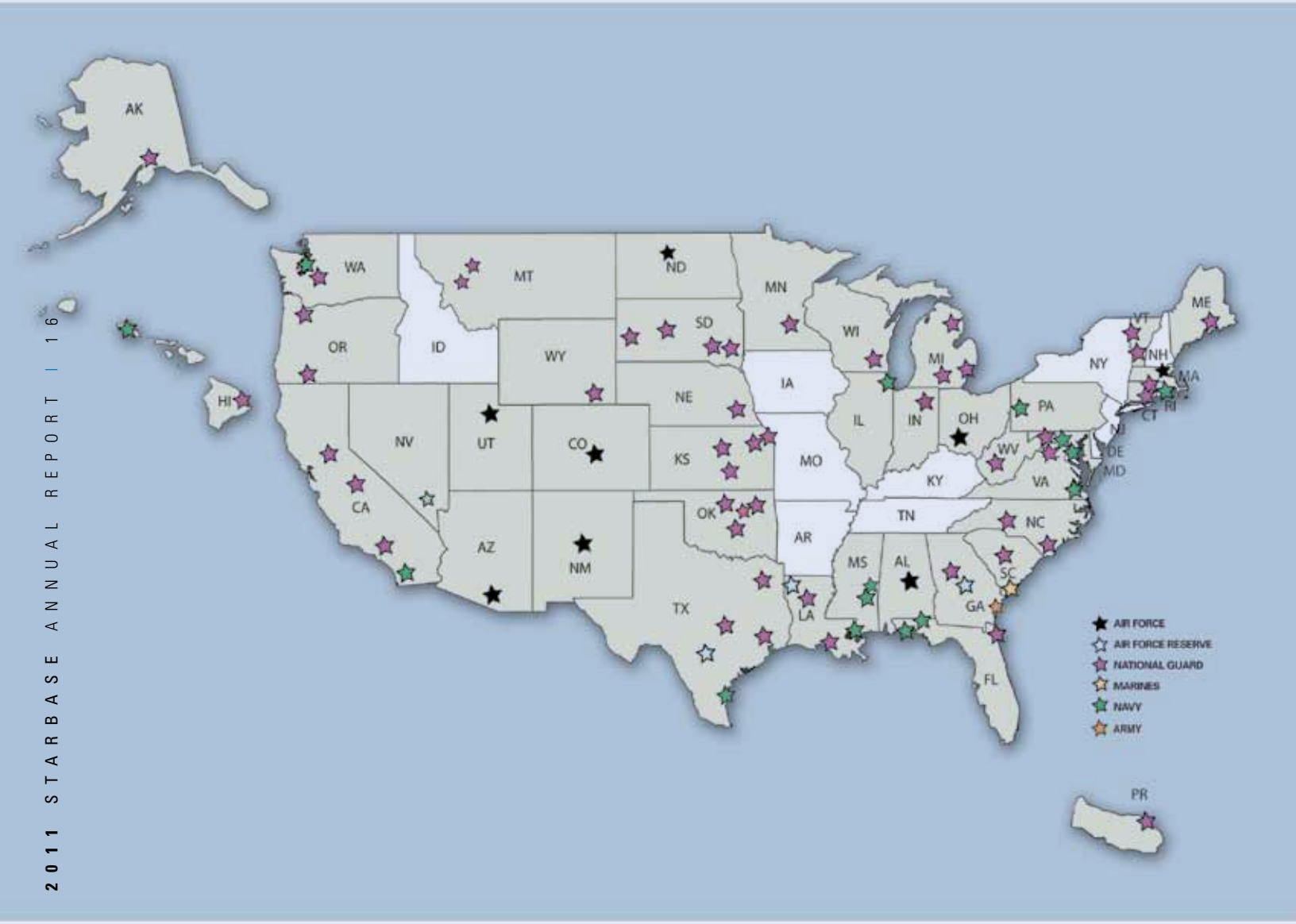
Fondal understands the importance of STEM education and the impact it can have on the students, teachers, and school districts that STARBASE Robins serves, and he has helped influence some of the school districts' STEM curriculum planning. Because of his belief that DoD STARBASE plays a major role in the STEM education community, he advocates for the program in member organizations such as the Association of Supervision and Curriculum Development (ASCD); the National Science Teachers' Association (NSTA), where he has served as the Aerospace Programs Advisory Board Chairman and has recently been nominated for election to the national Board of Directors; and the Triangle Coalition for Science and Technology Education, where he serves on the National Board.

At DoD STARBASE Camp Beauregard located in Louisiana, Director Cheryl Arbour has formed collaborations with local schools in the areas of STEM initiatives. Arbour submitted a successful proposal to the Rapides Foundation and was granted a three-year STEM/CTE grant to Hadnot-Hayes Elementary School based on its affiliation and involvement over the years with the DoD STARBASE Program and the STEM curriculum.

Arbour and her staff at DoD STARBASE Camp Beauregard continue to assist the local schools and parishes in writing STEM grants and providing teachers with additional STEM resources and avenues specifically designed for elementary based schools. Two of their participating schools, Glenmora and Hadnot-Hayes, have achieved the "strive for excellent school" status which provides learning opportunities in a hands-on lab to apply the scientific process and to discover knowledge through research as well as incorporating the EiE Engineering Design process (Ask, Imagine, Plan, Create, Improve) in all areas of the program of study that coincide with the DoD STARBASE curriculum.

These are just a few examples of the ways DoD STARBASE is working to make meaningful connections to participating schools and throughout the nationwide STEM curriculum.

DOD STARBASE AT A GLANCE



- 76 DoD STARBASE locations in 40 states plus the District of Columbia and Puerto Rico
- 4 outreach programs to Native Americans in MS, OK, and SD
- Number of Students since 1993.....679,193
- Number of students served in 2011..... 69,813
- Cost of program.....$18,563,000
- Average cost per location.....$331,482
- Average cost per student.....$266

THE DOD STARBASE CURRICULUM

PHYSICS 3.5 HOURS
- A. Newton's Three Laws of Motion
- B. Fluid Mechanics and Aerodynamics

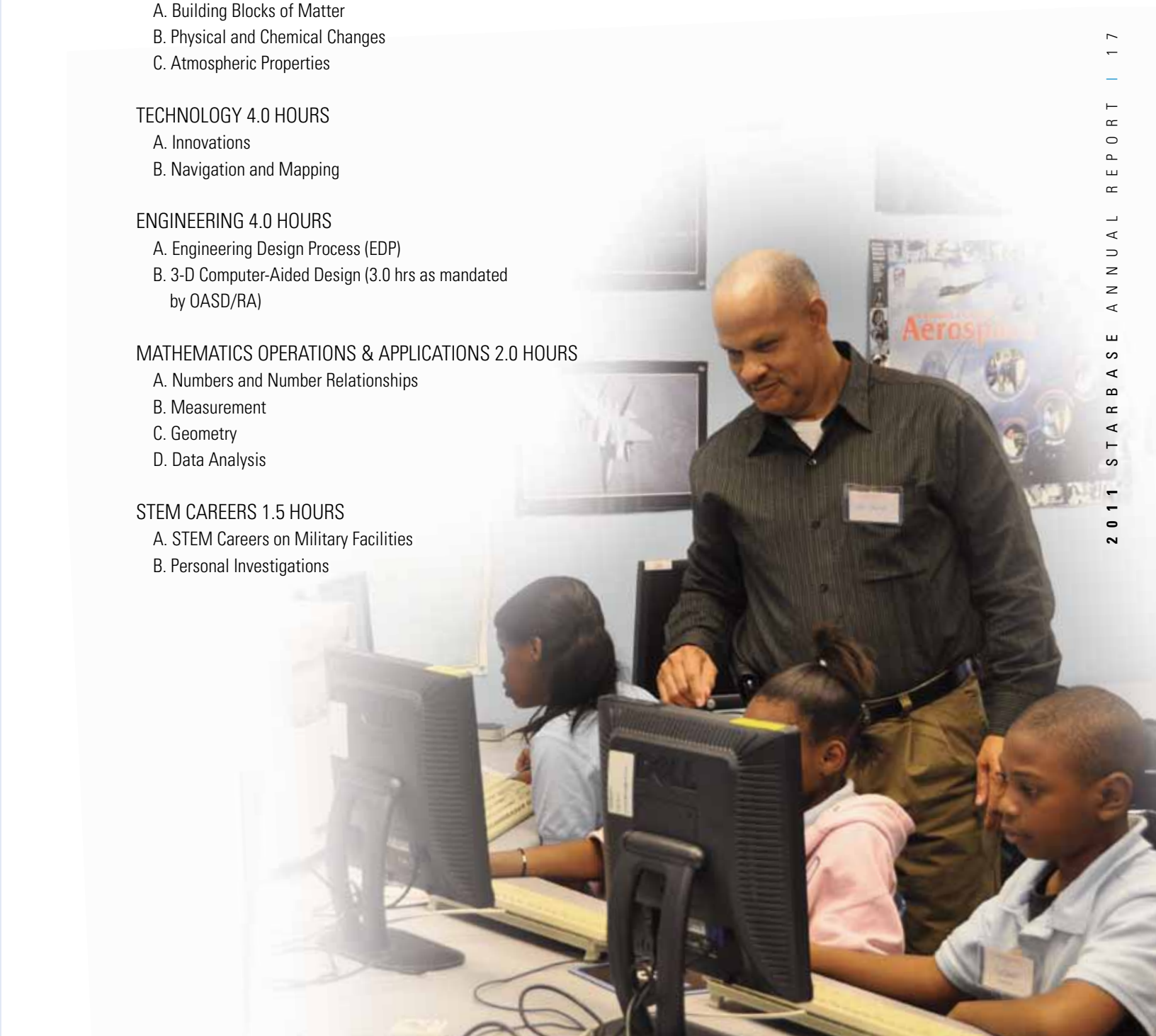
CHEMISTRY SCIENCES 3.5 HOURS
- A. Building Blocks of Matter
- B. Physical and Chemical Changes
- C. Atmospheric Properties

TECHNOLOGY 4.0 HOURS
- A. Innovations
- B. Navigation and Mapping

ENGINEERING 4.0 HOURS
- A. Engineering Design Process (EDP)
- B. 3-D Computer-Aided Design (3.0 hrs as mandated by OASD/RA)

MATHEMATICS OPERATIONS & APPLICATIONS 2.0 HOURS
- A. Numbers and Number Relationships
- B. Measurement
- C. Geometry
- D. Data Analysis

STEM CAREERS 1.5 HOURS
- A. STEM Careers on Military Facilities
- B. Personal Investigations



A LETTER FROM LT. GEN. CHARLES E. STENNER JR., CHIEF OF AIR FORCE RESERVE

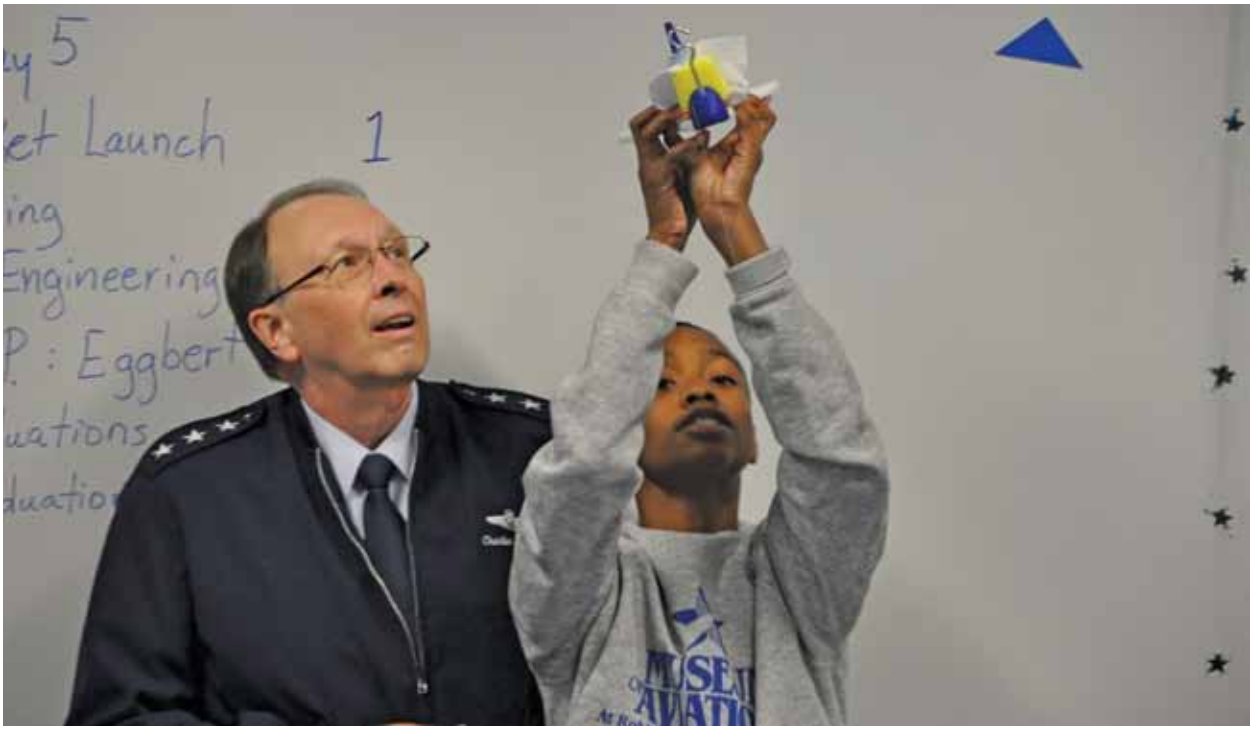
"BY OPENING YOUNG MINDS THROUGH THIS TREMENDOUS EDUCATIONAL PROGRAM, OUR NATION WILL NO DOUBT MAKE GREAT STRIDES IN THE YEARS TO COME. MY EXPERIENCE WITH THIS PROGRAM HAS BEEN EXTREMELY POSITIVE, AND I AM ENCOURAGED BY THE ENTHUSIASM I SEE."

The defense of our nation has long been guaranteed in part by innovation. Historically, bright minds in the fields of science, technology, engineering, and mathematics (STEM) paved the way for securing our country. We were the first to break the sound barrier, travel to the moon, and pioneer the technology behind stealth aircraft. Such breakthroughs have kept our nation on the leading edge and ensured an era of unmatched advantage for the United States.

However, in recent years, America's footing in STEM education and expertise has slipped compared to other nations. Recognizing the need for improvement in these areas, President Obama has made STEM education a national priority. I am confident we can reverse this trend by engaging our nation's youth early and ensuring they have a platform to grow their interests. The DoD STARBASE program does both by offering a solid STEM curriculum to our school-aged kids, and I enthusiastically support it.

Recently, I had the opportunity to meet with a group of local fifth-graders at the Museum of Aviation in Warner Robins, Georgia. This occasion marked the 15th anniversary of STARBASE Robins, which is locally sponsored by the Air Force Reserve Command. I found the kids extraordinarily inquisitive and most certainly primed to excel at DoD STARBASE. Over a five week period, these students are given 25 hours of instruction in the core STEM curriculum, which is reinforced with a great deal of hands-on exposure. Students have received pre-tests at the beginning of the program and post-tests upon program completion. The marked improvement in scores speaks volumes for the program and those teachers and mentors involved.

These programs are thriving at 60 locations in 34 states, and the Air Force Reserve is committed to fostering continued growth. We proudly sponsor multiple DoD STARBASE programs around the country and continually look for additional opportunities. In this capacity, we assist program staff with maintaining a non-profit corporation and provide



facilities and services to support STARBASE academies. DoD STARBASE is also broadening the spectrum of available opportunities with a new initiative: DoD STARBASE 2.0.

This after-school mentoring program targets middle-school students and involves even closer ties with the local military installation, communities, and schools. Through this exchange, our service members have a unique opportunity to reinforce the importance of STEM education as it relates to their own experiences in the military. Moreover, this approach provides an opportunity for the military and local communities to further our collaborative relationships while providing a valuable experience to America's youth. This is a fantastic environment where students are encouraged by the positive influence and encouragement of our military members. Likewise, making a difference in a child's life is an intrinsic benefit our men and women in uniform are all too happy to accommodate.

By opening young minds through this tremendous educational program, our nation will no doubt make great strides in the years to come. My experience with this program has been extremely positive, and I am encouraged by the enthusiasm I see. We have created an environment that invites creativity, cultivates the imagination, and strengthens the tie between the military and local communities. In short, we are charting a course to ensure our nation meets tomorrow's high-tech demands and providing our youth with a more promising future.

A LETTER FROM BRIG. GEN. BROD VEILLON, ASSISTANT ADJUTANT GENERAL-AIR, DIRECTOR OF EDUCATION PROGRAMS, LOUISIANA NATIONAL GUARD

In order to maintain our technological edge as a country and as a military super power, we must continue to develop and guide young people toward science and engineering. Defending our country and protecting our freedom for the future demands that we have people who can design, operate, and maintain the weapons systems of the future. We must have that ability. Our national education system must develop graduates who are on the cutting edge of science, math, and technology.

A core component of the National Guard is our community basing. We live where we grew up and where we now serve. STARBASE allows us to continue that community relationship. STARBASE partnership allows us the opportunity to interact with the local school districts as we assist the staff and teachers with their classroom STEM enrichment activities. STARBASE, a Department of Defense program, promotes and furthers our military personnel's relationship with our local schools and our military installations. My greatest pleasure is watching our STARBASE instructors open the students' minds toward studies in math, science, and technology. It is truly a rewarding experience. Every military member who volunteers their time to assist STARBASE comes away with the knowledge that giving back to the community and seeing the students' excitement for learning makes it a worthy and valuable experience. Our military volunteers come back to STARBASE time and time again. This classroom interaction between members of our uniform services and the students of STARBASE establish a positive, long-lasting impression of those who serve in our military.

After my tour as Wing Commander, I moved to a new job as Special Assistant to the Adjutant General. One of my new responsibilities was to oversee the operation of our Pelican State STARBASE. I was very impressed with the outstanding teaching staff of STARBASE and the level of excitement the students showed toward the classroom STEM activities. I know these activities were laying the foundation for future studies of science, which for some will change their future. I hope all students who have experienced STARBASE will choose studies in math, science, or technology. The spark that STARBASE instills in our young people will pay great benefits for our military and our country for many years to come.

"I'VE ALWAYS BEEN ASSOCIATED WITH AVIATION AND IT IS TRULY A PRIVILEGE TO CONTINUE THAT ASSOCIATION THROUGH STARBASE"

A LETTER FROM REAR ADM. THOMAS MOORE, USN, PROGRAM EXECUTIVE OFFICER, AIRCRAFT CARRIERS

In an increasingly complex and technical world, it is absolutely critical that we as a nation and we in the Navy do everything we can to enhance and broaden opportunities in science, technology, and math for today's youth to open their minds to the possibilities of a career in the world of science and engineering. Today, we are building our newest generation Aircraft Carrier, the GERALD R. FORD (CVN 78). The FORD is the first of a class of ships that will be the centerpiece of American Naval Combat Power and Projection for most of the 21st century! These mighty warships are technological marvels that include many new technologies such as the Electromagnetic Aircraft Launching System (EMALS) that will launch aircraft such as the F/A-18E/F Super Hornet, the F-35C Joint Strike Fighter, and a whole generation of new unmanned vehicles. The design and building of these ships is a testament to the continuing need for science and technology expertise in this country. At the same time, we are also building our next generation of science and technology leaders who will undoubtedly one day be the individuals charged with the design, build, and maintenance of these ships for the rest of the 21st century.

The DoD STARBASE program is the exact kind of hands-on engineering program that we need today to build that next generation of leaders. The program provides real hands-on experience in science and engineering and demonstrates to these students the exciting possibilities that exist in the world of science and engineering today. I've been fortunate enough to visit a STARBASE classroom and see firsthand the wonderful opportunities the program provides.

STARBASE's theory-to-practice approach to engineering using 3D computer models, bridge building using homemade materials, and model rocket building and testing hits a home run with the students. This type of learning was the cornerstone of how I learned to appreciate science and engineering in high school and college and led me to where I am today. My personal experiences as an engineer in the Navy's nuclear power program, as a graduate student studying nuclear engineering, and my many years as naval officer working on the Navy's aircraft carriers were all products of my early exposure to the marvels of science and engineering that the DoD STARBASE program is providing today.

My special thanks to those who have built the program and especially to the wonderful teachers who are making a difference in the classrooms with our students today. I look forward to seeing the seeds that are being planted today grow to be our next generation of science and technology leaders.

"IN AN INCREASINGLY COMPLEX AND TECHNICAL WORLD, IT IS ABSOLUTELY CRITICAL THAT WE AS A NATION AND WE IN THE NAVY DO EVERYTHING WE CAN TO ENHANCE AND BROADEN OPPORTUNITIES IN SCIENCE, TECHNOLOGY, AND MATH FOR TODAY'S YOUTH TO OPEN THEIR MINDS TO THE POSSIBILITIES OF A CAREER IN THE WORLD OF SCIENCE AND ENGINEERING."

A LETTER FROM PAULA HARRIS, PRESIDENT, BOARD OF EDUCATION, HOUSTON INDEPENDENT SCHOOL DISTRICT

On behalf of the Board of Education of the Houston Independent School District (HISD), it is my pleasure to express our strong support for the Department of Defense STARBASE program.

Since 1994, students and teachers in HISD have participated in STARBASE. Our students have benefited by experiencing hands-on, cutting-edge science and technology lessons and innovative instruction. At the same time, our teachers have learned and seen best practices and methods which they have been able to emulate in their own classrooms.

I have had the opportunity to personally attend Texas STARBASE, and I am impressed not only with the creative curriculum, but also with the dedicated instructors, who really challenge the students to hone their thinking skills and keep them engaged and interested in every activity.

As an engineer in the energy industry for more than 20 years, I am a huge advocate of STEM (Science, Technology, Engineering, and Mathematics) education–and I'm really proud that our district can offer such a high quality program that instills a deep interest in this subject matter.

I am pleased that the Department of Defense and members of Congress continue to share our view on the critical importance of STEM education in public schools and remain fully committed to this program. I am confident that the seeds STARBASE is planting today will produce the great engineers and scientists we will depend on in the future.

On behalf of the Board of Education, the students, and teachers of HISD, thank you for your continued funding and support of the STARBASE program.

Sincerely,

Paula M. Harris
President, HISD Board of Education

"Where Our National Security Begins..."
www.usgif.org

The United States Geospatial Intelligence Foundation (USGIF) represents nearly 200 government, industry, and academic organizations sharing interest in national security. We wholeheartedly endorse DoD STARBASE efforts to foster exploration of and participation in science, technology, engineering and mathematics (STEM) careers among the many young minds who experience this valuable enrichment program.

Geospatial intelligence (GEOINT) is happening all around us. With the near-ubiquity of precision location data, facilitated primarily by smart phones and other devices with Global Positioning System (GPS) capabilities embedded, and the growing dependence on location-baseed services, 'where' has never been more meaningful or available in history. It's not just using geospatial technologies, data and tradecraft to understand our world. It's no longer about finding one's place on a map, but rather using the existing and emerging tools to understand where things are in relation to us. The 'where' of anything, as it relates to us – on the move – is now available in our hands. The potential of these technologies and their application is only limited by the imagination and education of our next generation of professionals.

The GEOINT Community is experiencing growing demand for professionals with skills in STEM disciplines, and an insufficient supply of well-educated STEM professionals threatens our nation's ability to maintain the competitive edge required to address the increasing complexity of our national security challenges. Thankfully, the DoD STARBASE program is providing meaningful leadership towards mitigating that trend.

USGIF is excited about our growing relationship with DoD STARBASE. Recently USGIF's Young Professionals Group connected with two STARBASE-affiliated schools in San Antonio, TX. as part of our GEOINT 2011 Symposium. These young professionals introduced about 50 5th and 6th grade students to the power of remote sensing and geospatial information during an innovative, educational GPS-based scavenger-hunt event. The excitement and curiosity the children displayed was refreshing and encouraging. Their innate ability to adapt the technology to the mission at hand was awe-inspiring.

For the past century, U.S. colleges and universities have led the world in STEM research and education. Statistical comparisons among industrialized nations clearly reveal evidence of declining emphasis on STEM education in the United States. The trend of declining enrollments among American citizens in collegiate STEM programs can be traced to declining interest among students in elementary and secondary education. Without ongoing investment in STEM education, our international prominence will surely fade making us a less innovative, competitive and secure nation. USGIF fully supports the efforts of DoD STARBASE to prepare the next generation for STEM careers in the greater interests of our national security.

Sincerely,

Keith Masback
President

2011 ANNUAL REPORT

2011 ASSESSMENT

Executive Summary

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

The FY 2011 assessment process obtained information via knowledge and attitudinal tests, structured interviews, questionnaires, program visits, and conversations with program participants. Assessments, interviews, and/or questionnaires were received from 1,530 students, 196 military volunteers, 1,510 teachers, and all DoD STARBASE directors. A brief overview of the assessment highlights some of the key findings of the analysis.

HIGHLIGHTS

- The majority of the students attending the program this year are fifth-graders.
- The average class size for the 2011 program year is 25 students.
- The DoD STARBASE program conducts 2,431 classes this program year serving 1,161 schools across the country.
- The majority of the DoD STARBASE locations (72%) serve school districts within a 50-mile radius of their program site.
- The Hawaiian Native or Pacific Islander student population demonstrates the greatest increase with a net gain of +21.52% with an overall total student profile of 2%.
- The gender composition is 48% female and 52% male.
- Contractor affiliations make up the majority (46%) of the employment relationships.
- The number of part-time employees remained the same, while full-time employees increased by 3% over the past year.
- The overall turnover rate in FY 2011 is 16%, which is the same as FY 2010.
- On the average, it took four to six weeks to replace a staff member in FY 2011, which is a considerable decrease from the 15 to 19 week average reported in 2010.
- A total of 9,706 volunteers contribute a total of 102,798 hours to the program.
- Not-for-profit organizations support the DoD STARBASE locations in obtaining $821,800.
- Collaborations between the local military base, schools, and local STEM programs enhance and strengthen the program.
- The newly upgraded DoD STARBASE curriculum was adopted and implemented.
- About one-third of all DoD STARBASE locations will be involved in the DoD STARBASE 2.0 effort by FY 2012.
- The average cost per location is $331,482.14 in FY 2011.
- The average cost per student increased 3% to $308.27 in FY 2011.
- On average, staff costs account for 83.5% of each location's budget.
- Field-testing of the student knowledge and attitudinal tests will continue in FY 2012.
- Demographically, the program reaches the desired and targeted grade level with 84.4% of students from the fifth grade and 85.5% of students at 10 to 11 years of age.
- Student performance is similar to past years with an average mean gap score increase of +5.76 points between the pre- and post- test.
- All test items display positive increases with the largest increase of +3.17 in the area of chemistry science.
- Mathematics and technology have the smallest pre-post increases at +0.76 and +0.44 respectively.
- Almost all of the attitudinal items have statistically significant gap difference results.
- Those students who score high on military experience attitudinal ratings have higher positive attitudinal scores in math, science, working in a group, experiencing new things, and positive referrals to the DoD STARBASE program.
- Across the military branches, students display significant differences about the military.
- Those students who had prior military experience have six significantly different positive attitudinal responses in the pre-test and four in the post-test.
- Students who have prior knowledge about DoD STARBASE have more positive attitudes than those who do not know about the program.
- There are 13 significant differences across the five regions on the majority of attitudinal items.

- Students from smaller classes tend to score lower on the knowledge test and have less positive attitudes than those students from larger classes.
- Boys score significantly higher in both knowledge and attitudinal pre-post assessment than girls.
- Analysis of gender-based responses is different than past years. On attitudinal ratings, girls are more significantly positive on six items than boys, while the boys only have one item more positive in the post-attitudinal assessment.
- Nearly 100% of teachers claim that the DoD STARBASE curriculum helps them attain their state requirements.
- Close to 90% of teachers recommend DoD STARBASE to others.
- A good majority of teachers utilize DoD STARBASE materials in their classroom and/or as take-home activities.
- Those teachers who utilize DoD STARBASE materials and refer DoD STARBASE to others have more favorable overall attitudinal responses.
- A location performance system will be installed during FY 2012.

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:

- Program Overview
- Program Growth
- Program Oversight
- Fiscal Analysis
- Assessment Results
- Considerations
- Appendices
- DoD STARBASE Program Directory

2011 ASSESSMENT

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

THE MILITARY

The military houses and supports DoD STARBASE programs.[1] Through this relationship, DoD STARBASE locations access resources and services that most school systems cannot. Classroom space, utilities, and security are the primary services provided by the base. State-of-the-art equipment and technology are also provided. DoD STARBASE operates at the discretion of the base commanders who view this program as a venue for their military personnel to positively interface with their community. Military personnel are encouraged to volunteer their time to the program as mentors, expert speakers, tour guides, and other support activities.

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

THE SCHOOL DISTRICT

School districts provide the students who participate in the DoD STARBASE program. 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. The school's curriculum is enhanced, and students are better prepared for standardized state testing as the DoD STARBASE curriculum is aligned with national and many state standards.

THE COMMUNITY

Public and private organizations support and enhance the DoD STARBASE curriculum and operation. Community leaders may volunteer their time by serving on boards, assisting with gaining access to community facilities, and/or raising financial support. They also view the program as benefiting the community by promoting better life choices, problem-solving skills, and future job opportunities. Community leaders identify DoD STARBASE as a mechanism to promote interest in science, math, engineering, and technology that will enhance the future of their communities.

[1] Most of the locations 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 or in a military unit tenant.

THE PROGRAM ELEMENTS

The Department of Defense Instruction (DoDI) outlines the guidelines and operational requirements for the DoD STARBASE program. The DoDI covers operational requirements such as budget, desired grade level, class size, scheduling hours, curriculum topics and coverage, the desired demographics, documentation requirements, testing, and program location. Any exceptions to the DoDI requirements by a location must be requested in writing from OASD/RA through the service representative.

GRADE LEVEL

The DoD STARBASE program is authorized to serve students who are in kindergarten through grade 12. Because of the dramatic decline in math and science performance by U.S. students after the fourth grade, the DoD STARBASE curriculum and standards are developed for the fifth-grade level. Some locations provide programs to other grade levels, but more than half (52%) of the students attending the program this year were fifth-graders.

CLASS SIZE

Smaller class size is particularly important to the inquiry-based instruction used at DoD STARBASE locations. The DoDI requires two STARBASE teachers per class, or an average teacher to student ratio of 1:15, with 20-35 students as acceptable class sizes. The average class size for the 2011 program year was 25 students. Three locations reported averages below 20 students.[2] The highest reported average class size was 36 students.

CLASS SCHEDULE

The DoD STARBASE program conducted 2,431 classes this year serving 1,161 schools across the country and 385 school districts (see Exhibit 1). DoD STARBASE locations may schedule four-day or five-day programs as long as 20 to 25 hours of instruction is completed. As in the past, the overwhelming choice is the five-day program, which provides more options and depth of content coverage. However, some locations prefer the four-day program. Over 55,000 students attended a five-day program, making up 91.8% of the student body.

DoD STARBASE 2008-2011
School System Demographics[3]
Exhibit 1

	2008	2009	2010	2011	Annual Change	Percent Annual Change
Number of Students	54,106	58,879	59,902	60,216	+314	+.52%
Number of Classes	2,327	2,569	2,575	2,431	-144	-5.59%
Number of Schools	973	1,254	1,086	1,161	+75	+6.91%

[2] DoD STARBASE sites in District of Columbia, Maine, Minnesota, and Mississippi-Choctaw reported averages of less than 20 students.
[3] Numbers shown are for four- and five-day programs and do not include other programs.

PROGRAM SERVICE AREA

The majority of the DoD STARBASE locations (72%) serve school districts within a 50-mile radius of their program sites. Locations that extend beyond a 50-mile radius generally have made special accommodations to reach more students, such as the Native American outreach programs.

RACIAL COMPOSITION

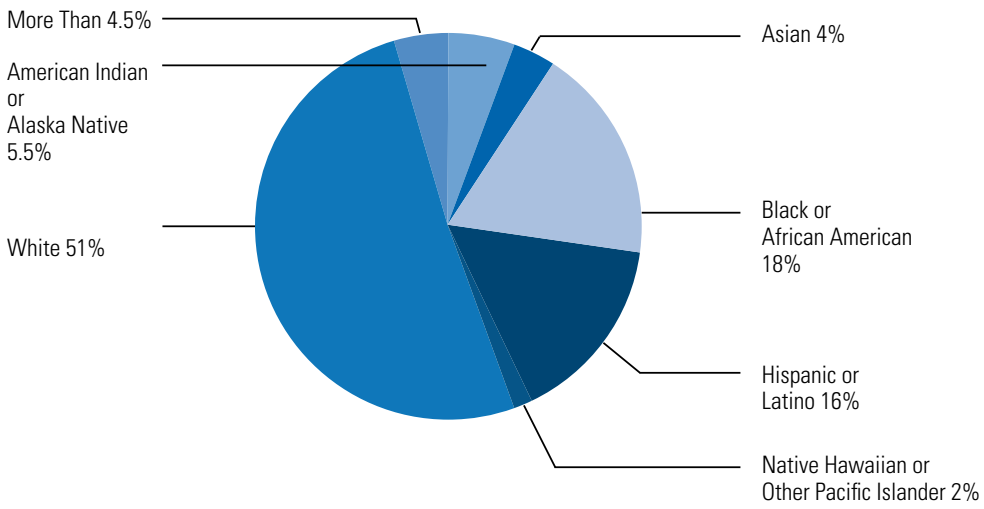
The following table shows the racial composition of the DoD STARBASE student population over the past two years (see Exhibit 2). Hispanic or Latino students along with the Native Hawaiian or Pacific Islanders and White populations display positive growth in the program over the past year. The Hawaiian Native or Pacific Islander student population demonstrates the greatest increase with a net gain of +21.52% with an overall student profile of 2%.

The American Indian (or Alaskan Native), Asian, and Black (or African American) student populations experienced the greatest net decline with -6.61%, -9.67%, and -5.35% respectively. The largest segments of the total student population are 51% for the White students, 18% for the Black or African American students, and 16% for the Hispanic or Latino students (see Exhibit 3).

Racial Composition of Students 2010–2011
Exhibit 2

Race/Ethnicity	2010	2011	Annual Change	Percent Annual Change
American Indian or Alaskan Native	6%	5.5%	-237	-6.61%
Asian	4%	4%	-233	-9.67%
Black or African American	19%	18%	-616	-5.35%
Hawaiian Native or Pacific Islander	1%	2%	+170	+21.52%
Hispanic or Latino	16%	16%	+142	+1.52%
White	50%	51%	+972	+3.28%
More Than One Race	4%	4.5%	+116	+4.44%

Racial Composition of DoD STARBASE Student Population 2011
Exhibit 3



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 48% female and 52% male.

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 employees' affiliation determines their salary administration, hiring requirements, benefits, personnel policy and practices, and reporting relationships. Contractor affiliations make up the majority, 46%, of the employment relationships.

However, over the past several years, there has been movement toward state affiliations (see Exhibit 4). Since 2006, state employees have increased by 39%, while federal employees have increased by 13%. Federal and state affiliations often provide retirement and health benefits, which increase a location's personnel costs and use a greater portion of the location's operating budget.

2006–2011 Employment Affiliations
Exhibit 4

Organizational Affiliation	Number of Employees					
	2006	2007	2008	2009	2010	2011
Federal Employee	54	60	61	66	60	61
State Employee	69	78	86	91	95	96
Contract Employee	110	105	120	135	130	134
Total Employees	233	243	267	292	285	291

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 also is the basis for an annual budget for each location. Personnel costs are the major ongoing expenditure for a DoD STARBASE location.

The staffing model includes four full-time paid staff equivalent positions: a director, a deputy director/program instructor, a program 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 respectfully.

Several locations have adjusted the prototype staffing model. The primary reason for this adjustment is budget constraints. On average, staff costs account for 83.5% of a location's budget. Fiscal management and integrity are a constant concern for DoD STARBASE directors.

The most common personnel changes in the staffing model are additions to instructional staff and classroom support. Some locations restructure the administrative position to include instruction. Other locations have used the following solutions: 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. If a location changes its personnel model, it must submit a written request for a waiver to OASD/RA.

The following chart (Exhibit 5) describes the 2011 staffing profile for full- and part-time personnel. The number of part-time employees remained the same, while full-time employees increased by 3% over the past year.

2011 Staffing Profile
Exhibit 5

Position	Number of Staff	Full-Time	Part-Time
Director[4]	50	49	1
Deputy-Director	46	43	3
Instructor	119	82	37
Office Manager	51	40	11
Other	22	4	18
Total	288	218	70

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

[4] The director at DoD STARBASE Portland was .8 in 2011.

STAFF DEVELOPMENT

DoD STARBASE instructors train to stay current in program content, methodologies, and curriculum. Eighty-two percent of the DoD STARBASE locations offer staff development opportunities. Regional and national professional association programs, university offerings, online trainings, visits to other locations, and in-service workshops are all used as professional development. While almost all instructors are experienced in math, science, and technological applications, ongoing professional development keeps teachers up-to-date on emerging technology, curriculum, resources, and instructional modalities.

New staff members are typically trained on the job. New instructors, prior to teaching at DoD STARBASE, may observe experienced instructors who also serve as mentors. Continued mentoring is conducted by the director or the deputy director. Continuing education and staff development opportunities are also available for the director. DoD STARBASE directors attend an annual workshop sponsored by the OASD/RA. The Professional and Curriculum Development Committees of DoD STARBASE design and develop national and regional workshops for delivery on computer-assisted design and updates to the DoD STARBASE curriculum. The next national directors' and instructors' workshops are planned for the spring of 2012 and the summer of 2013 respectively.

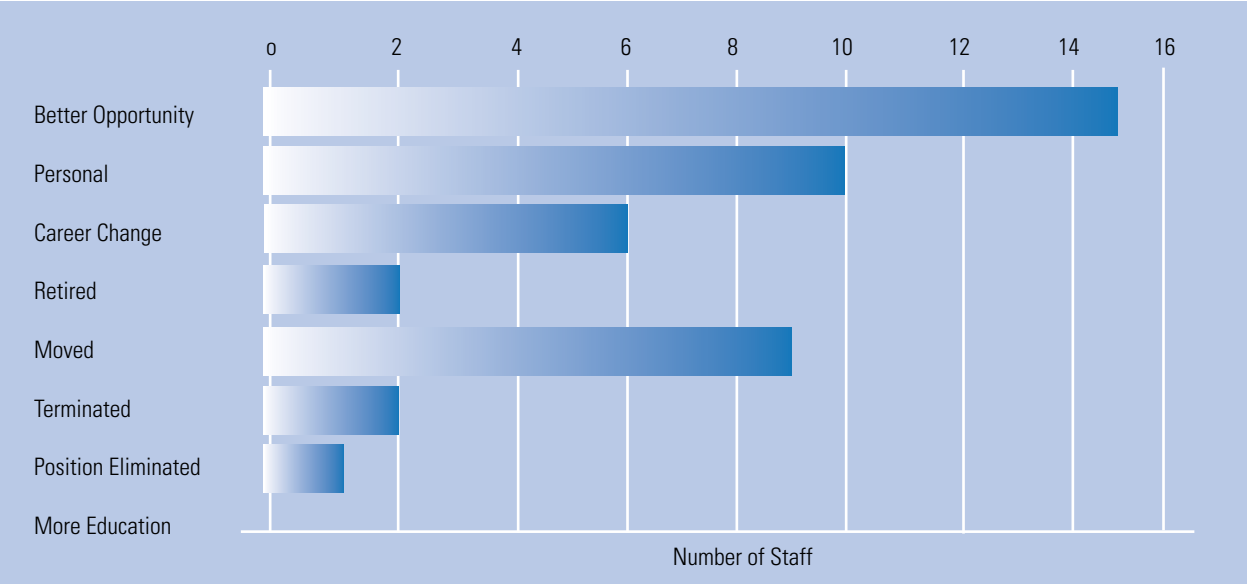
STAFF CHANGES AND DEPARTURES

There were 46 staff changes out of 291 staff positions in FY 2011. The majority, 67%, of the changes were at the instructor level. Office manager positions were the next highest with a 13% turnover rate followed by directors and deputy directors at 11% each. The overall turnover rate in FY 2011 is 16%, which is the same as FY 2010 (see Exhibit 6). Of those staff members who left the program, 33% indicated that better opportunities were the reason for their decision to leave DoD STARBASE, while 22% cited personal reasons for leaving (see Exhibit 7).

Staff Departure Rate FY 2003-2011
Exhibit 6

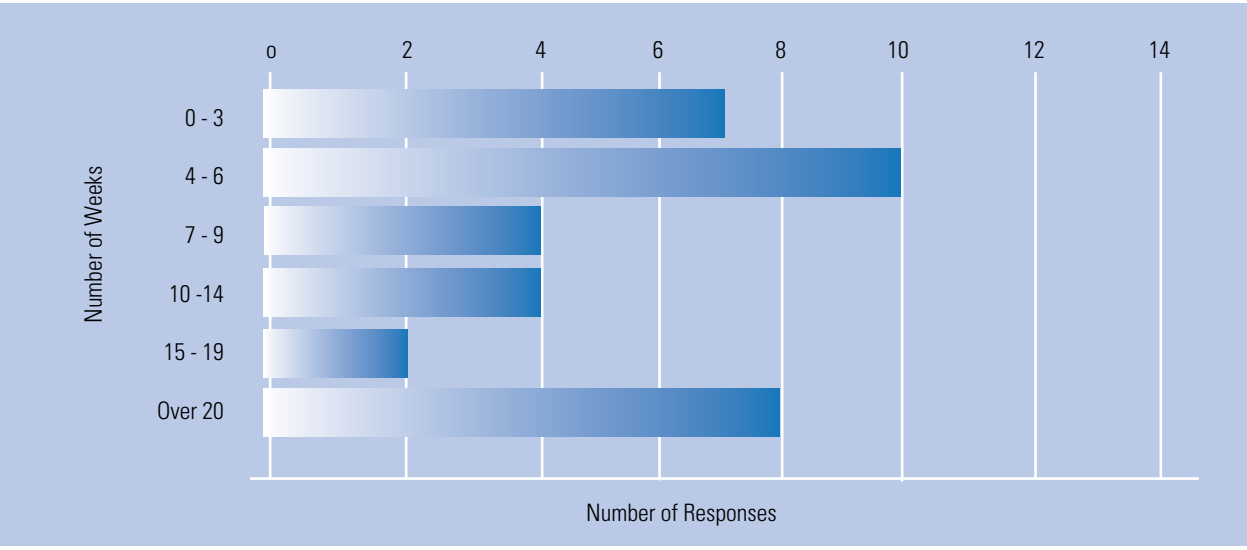
Fiscal Year	2003	2004	2005	2006	2007	2008	2009	2010	2011
Number of Staff	168	238	231	233	243	267	292	285	291
Number of Departures	10	30	39	36	37	34	34	45	46
Turnover Rate	6%	13%	17%	15%	15%	13%	12%	16%	16%

Reasons for Staff Departure
Exhibit 7



On the average, it took four to six weeks to replace a staff member in FY 2011 (see Exhibit 8). This timeframe has decreased considerably from the 15 to 19 week average reported in 2010. The Navy locations averaged 23 weeks to fill eight vacancies (five positions remain open); the National Guard locations averaged 10 weeks to fill 25 vacancies (three positions are still open); the Air Force locations averaged four weeks to fill three positions (one position is still open); and the Reserve locations immediately filled two positions, but one position remains open.

Time to Fill a Vacant Position 2011
Exhibit 8



VOLUNTEERS

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

The DoD STARBASE locations documented a total of 9,706 volunteers who contributed a total of 102,798 hours to the program (see Exhibit 9). Military personnel accounted for 3,146 volunteers. Parents accounted for 4,005 volunteers for a total of 47,006 hours, and teachers added 33,825 hours with 1,796 volunteers. Other community and volunteer groups added 4,998 hours through 759 volunteers.

2011 Volunteer Participation
Exhibit 9

	Volunteers	Hours
Military	3,146	16,969
Teachers	1,796	33,825
Parents	4,005	47,006
Other [5]	759	4,998

NOT-FOR-PROFIT ORGANIZATIONS

Not-for-profit organizations support DoD STARBASE locations in a number of ways. The Secretary of Defense and the secretaries of the military departments are authorized under Section 2193 (b) subparagraph (f) to accept financial support as well as other types of support from not-for-profits and other private sector organizations. Board members provide guidance, access to community resources, fundraising, and other activities to enhance individual locations. In FY 2011, not-for-profit organizations supported the locations in obtaining $821,800. Funding sources included state and federal funds, grants, and donations. The amounts per location varied from $3,500 to $229,600.

DoD takes no position regarding not-for-profit organizations. Most of the not-for-profits were established before 2001, when the program was piloted and ongoing financial support was uncertain.

[5] Other volunteers include STEM groups, firefighters, board members, Air Force Research Laboratory, etc.

2011 Use of Not-for-Profits by Military Component
Exhibit 10

Military Component	# Academies	# Not-for Profits	% Academies With Not-for-Profits
Air Force	5	2	40
Air Force Reserve	3	3	100
Marine Corps	1	1	100
National Guard	37	24	65
Navy	15	0	0
Total	61	30	49*

*Percentage of all academies with not-for-profits.

Services Provided by Not-For-Profits 2005–2011
Exhibit 11

Service	2005	2006	2007	2008	2009	2010	2011
Marketing/Fundraising	80%	68%	72%	83%	80%	76%	87%
Grant Writing/Submissions	57%	42%	38%	65%	57%	55%	70%
Program Planning/Review	47%	58%	52%	76%	57%	48%	26%
Budget Planning and Review	47%	58%	41%	52%	43%	34%	37%
DoD Compliance Review	27%	52%	52%	45%	33%	34%	37%
Review of Potential Staff	23%	23%	38%	48%	47%	34%	33%
Subcontractor Relations	23%	23%	27%	31%	13%	31%	27%
Other	27%	13%	21%	10%	33%	34%	33%

PROGRAM GROWTH

LINKING WITH STEM COLLABORATORS TO FORM A STEM PIPELINE

Over the history of DoD STARBASE, there have been a number of collaborative efforts by the DoD STARBASE locations. Many of these collaborations have been very popular. They provided the basis for establishing linkages with local schools, communities, and service groups to improve STEM education in their area and bring attention to DoD STARBASE as a viable and useful service. Most of these efforts were locally driven, utilized staff time and resources in off-hours, functioned as summer sessions when class sessions were open, and were often conducted outside of the base. The following section is meant to describe the focus, process, and objectives in establishing linkages through collaborations and referrals under the aegis of DoD STARBASE.

DoD STARBASE encourages linkages with other programs, agencies, and services but requires that connections be made under circumstances that support DoD STARBASE objectives with the interests of the students, its core constituency, being served in the near term and downstream. Potential collaborators require a proper review of the quality of the agency and services and their fit with DoD STARBASE objectives and resources as well as an examination of the positive potential for the student, the role of the participants, and a process by which validation of the experience can be obtained for tracking positive results.

There are a number of DoD STARBASE locations that are at various stages in the process of linking with STEM collaborators, from simply identifying potential collaborators to actual collaborative and joint program participation. One such site, STARBASE Atlantis – TTF Bangor in joint participation with the North Kitsap School District, was awarded a DoDEA science grant to send their classroom teachers to participate in developing inquiry-based science skills and applications, to fund field trips to the military bases for students on scientific applications, and to bring military scientists and engineers to the schools and classrooms for demonstrations and applications. The program is designed to piggyback existing DoD STARBASE instructional curriculum and expand the participation of sponsoring groups.

In Albuquerque, NM, DoD STARBASE collaborations with the Rocket Society and Team America have been constant over the years. Recently, some of their former students participated in the high performance rocket competitions at the national level. While this was not a formal linkage with constant collaboration, it did identify an opportunity to examine how their program can best utilize these relationships in science/rocketry activities. They propose to examine these options and, in the future, expand their student involvement after the fifth grade experience.

CURRICULUM ENHANCEMENTS AND UPGRADES: THE IMPLEMENTATION OF THE NEW CURRICULUM ACROSS ALL DoD STARBASE LOCATIONS

The installation of the new core curriculum has been under way over the past two years. The curriculum was enhanced and standardized to obtain a more focused and expanded utilization of the STEM subjects (science, technology, engineering, and math). Several popular content areas of instruction from the past curriculum such as Eggbert, the application of Bernoulli's Principles of fluids and pressure, and Newton's Laws of Motion have been upgraded and enhanced with additional activities and performance objectives. The curriculum uses professional engineering software, introduces nano-technology and nano-engineered materials, and has students reading and interpreting satellite maps provided by the National Geospatial-Intelligence Agency.

An outline of the DoD STARBASE curriculum is shown in the introduction section of this report. Each student-centered core topic contains a number of hands-on experiments, team-problem-solving questions, inquiry-based applications, and/or computer-aided design and development, where the student utilizes the concepts of scientific reasoning and/or engineering design. There is sufficient additional time beyond the core areas for the use of local topics and resources that apply the curriculum to real-life applications.

Selected lesson plans were approved by the Curriculum Committee, composed of DoD STARBASE directors. Each DoD STARBASE location is required to teach the basic core curriculum using the minimum time requirements for each objectives. Additional lesson plans are submitted to the committee by the DoD STARBASE locations for review, revisions, and approval. Each submission must retain unit and lesson plan objectives and should have transportability to other DoD STARBASE locations. The initial review process proved to be too time consuming for the committee to take on in addition to their other duties. Future lesson plans will be reviewed and formatted by an outside organization and then forwarded to the curriculum committee for approval.

Classroom teachers are very pleased with the changes in the new curriculum, as there is now a more cohesive fit with State and National standards. Corresponding ratings on the Teachers' Survey indicate this satisfaction (see Teacher Survey Results).

DOD STARBASE 2.0

DoD STARBASE 2.0 is a STEM-based afterschool mentoring program. The program is conducted as a collaborative relationship with the school system and applies pro-social, team-building, and broad-based technical skills. For several years, there has been a concern by the sponsors and participants of DoD STARBASE about what happens to the students after their experiences at DoD STARBASE. Were students building on their newly acquired skills, self-esteem, and confidence levels after their positive DoD STARBASE program exposure? DoD STARBASE 2.0 is designed to create a bridge from the DoD STARBASE fifth grade, STEM-based program to middle school, and beyond.

A pilot DoD STARBASE 2.0 program was implemented in 2010 at five locations. Since then, two additional locations have added a DoD STARBASE 2.0 with a third location to follow later in the 2011-2012 program year. Ten locations are scheduled for the fourth stage of this venture. When all stages of the pilot are complete, about one-third of all DoD STARBASE locations will include a DoD STARBASE 2.0 program.

Responses to DoD STARBASE 2.0 from the students, participant school systems, and parents have been very positive. DoD's vision for this effort is that by the middle of this decade all DoD STARBASE programs will sponsor a DoD STARBASE 2.0 program which will affect more than 5,000 students per year at more than 120 school system participants and involving nearly 2,000 mentors. This initiative to grow STARBASE 2.0 programs offers valuable assessment capability to track student participation in STEM-related projects.

In the past, tracking student assessment in the school system over time has been limited to one local longitudinal analysis conducted by the Wilder Research Group with DoD STARBASE Minnesota graduates and samples of comparative groupings throughout their school. The study was focused only on school data indicators and self-reported external programs. While the Minnesota Study provided several useful insights and analyses for future longitudinal applications and identified the need to work with school districts to track students' activities in STEM-related projects, working with schools to track nationwide student participation in STEM-related projects would be a major step toward conducting a more thorough assessment to validate the impact of DoD STARBASE.

DOD STARBASE 2.0 AFTER-ACTION ASSESSMENT

All five DoD STARBASE 2.0 locations were interviewed about their experiences with the program. This input and feedback addressed their perceptions and experiences in all aspects of the program from training, implementation, program operations, to post-implementation experiences including:

- Dare Mighty Things staff training applications
- Memorandum of Understanding interactions with school sponsors, mentor selection and training
- Student selection and student comments on program experiences
- Experiences in the application of Scalextrics, robotics, team-building, etc.
- Installation
- Coordination with school participants
- Mentor experiences and retention
- Operational and program challenges
- Expectations for future sustainability of the program

In addition, all participants were asked to respond concerning areas of program improvement, school demand, and support, and attendees were asked for recommendations on best practices and key challenges. The results cover issues, problem-solving, common challenges, and practical efficiencies and were obtained and transferred to the next DoD STARBASE 2.0 training attendees. This knowledge will prove invaluable for future training groups. Those locations with a DoD STARBASE 2.0 program will be an essential resource in the training/mentor process and can now be key agents for future DoD STARBASE 2.0 training and implementation.

At the conclusion of this section of the report, there are several "considerations" which were developed from the three after-action reports. The "considerations" were generated from the challenges and experiences the initial DoD STARBASE 2.0 programs faced in their installation and operations. While these after-action reports provide a much greater detail and useful observations on program operations than this short overview can provide, the capture of those experiences and their transfer to other locations in the next training wave was one of the more useful applications of the assessment.

The response by the school systems, the students, the parents, and all the participants has been extremely positive. All programs have been successfully implemented, even the South Dakota NOVA program that experienced a staffing problem. Several initial markers of the success of the DoD STARBASE 2.0 pilot have been identified:

- School sponsor and participant demand is high
- Sustainability into the next program year is substantial in all locations
- Other school grade levels are requesting continuation
- Growth of the program in students, mentors, and new locations is expected
- New program applications are now being introduced
- Mentor clubs are now being established, and several are now competing at local and state levels in selected program areas

However, most importantly, the program has been a key start in identifying and linking STEM programs as key resources in many communities. Work in the future will require greater focus on participant involvement and responsibility.

LINKAGES TO OTHER STEM PROGRAMS

The mentor program provides a rich venue for identifying STEM linkages with programs around the community, personnel, and resources. As recruitment efforts, marketing, and program applications are obtained, the identification of sources of quality activities in the environment can also be acquired. These sources require a systematic assessment and evaluation for future collaborations, partnerships, and referrals. Currently, there is no procedure or requirement across the locations for that assessment; however, an inventory of local STEM programs and a brief assessment of possible linkages with DoD STARBASE is required in Level II of the Performance Assessment System (further outlined below). Those linkages are important for the resources, potential to build student skills, knowledge, and involvement in the STEM areas.

PROGRAM OVERSIGHT

COMPLIANCE

The Office of the Assistant Secretary of Defense for Reserve Affairs (OASD/RA) has the overall responsibility for the management of the DoD STARBASE program. The responsibilities are comprehensive and include:

- Securing program funding
- Managing the overall program installation and administrative operation
- Developing and implementing regulatory guidelines
- Monitoring program compliance with regulations
- Assessing the program's effectiveness in meeting stated goals and objectives
- Ensuring effective installation of new programs
- Coordinating activities and responsibilities between the participant groups and sponsors
- Submitting an annual report to Congress on program performance
- Providing administrative oversight as needed

Before 2000, DoD STARBASE was a pilot program. During this period, each location operated with a certain degree of independence. While there were common characteristics in the core curriculum topics, delivery techniques, and instructional philosophy, the intensity and emphasis varied with each location and differed in procedures, practices, and often in curriculum content. There was a great deal of uncertainty in funding during this period which resulted in sponsors and staff efforts to obtain funding from other sources. Several of the locations were moderately successful, but in order to obtain funds, there were modifications in content, delivery, and operational applications to accommodate the new sponsors' mission and objectives.

In late 1999, DoD STARBASE received congressional authorization and funding to make DoD STARBASE a permanent DoD program under the management of OASD/RA, who immediately developed a basic set of standard procedures, practices, and policies to regulate the program. The result was the Department of Defense Instruction (DoDI) 1025.7 which provides the policies and procedures that essentially guide the current DoD STARBASE program in each of the 60+ locations. The DoDI directs the locations on such operational requirements as the number of classes, classroom hours, student numbers, target student population, participant eligibility, program site location for instruction, core curriculum, fiscal and property audits and frequency, and reporting requirements.

COMPLIANCE PROCEDURES

Over the last decade, a compliance program was designed and developed to ensure that the DoD STARBASE locations adhere to the DoDI requirements as well as administrative directions and reporting requirements. The program is reviewed each year for efficiencies, verification applications, and the corrective action plans that are now being integrated with a new performance system. DoDI compliance requirements reside in the Level I performance assessment. (See the Program Assessment System section of this report.)

Over the past two years, the core curriculum was enhanced and implemented throughout all locations. The proper installation of its content and application is required and must be properly verified by reporting systems and site visitations. Approximately a third of those verifications have been accomplished this program year.

During this past year, almost a third of the locations installed DoD STARBASE 2.0, an afterschool mentoring and STEM-related program essential to the downstream linkage initiatives the DoD STARBASE program encourages. This effort also requires oversight and documentation for inclusion in the location net impact assessment. The expansion of DoD STARBASE initiatives in curriculum, collaborative efforts, and enhancements of program offerings all require oversight, verification, and documentation.

Compliance visitations under DoDI are conducted at least once every three years for each DoD STARBASE location. The visitation involves a three-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 to review the preliminary results of the review and to discuss if any corrective action is required. A plan-of-action is developed and a schedule for completion is mutually agreed upon. A written report is then sent to the OASD/RA program manager upon completion of the visitation. OASD/RA may share the key points of the report with the director and/or the base commander. A written summary of progress made by the DoD STARBASE director is sent to OASD/RA as corrective tasks are obtained, and copies may be forwarded to sponsors and military service representatives. Occasionally, a follow-up visitation is scheduled to document that follow-up 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, and to answer any questions and concerns the staff and sponsors may have.

COMPLIANCE ADHERENCE

The DoDI has been an effective tool in obtaining basic operating and meeting basic performance objectives. There are a small number of locations that face challenges in student numbers, hours of instruction, audit schedules and completions, and meeting reporting requirements in a timely fashion. The new Performance Assessment System, which is described in the following section of this report, addresses those locations in the marginal status as well as those who are more assertive in their desire to become a high performing DoD STARBASE location. The DoDI and its accompanying operational requirements are now a basic requirement of performance.

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

PERFORMANCE ASSESSMENT SYSTEM

The annual reports of the last three years have described the development of a system to track performance of DoD STARBASE locations. The sections below outline the criteria of the proposed Performance Assessment System presented to OASD/RA for approval and implementation.

BACKGROUND AND ASSESSMENT OBJECTIVES

The Performance Assessment System is comprised of three progressive levels of program and organizational performance. The system requires obtaining several levels of program activity ranging from demonstrating the basic adherence to DoDI requirements and program installation (Level I); to achieving desirable operational applications (Level II); and finally to exhibiting advanced strategic, program design with downstream linkages for promoting student performance in STEM-related activities (Level III).

This assessment system will require the attainment of these objectives and then their maintenance and sustainability over time. An assessment process performed through site visitations and reporting validates continued performance. If there is any shortfall in required activities, a scheduled set of corrective actions will be developed. The status of the performance level under review would be held in abeyance until the activities are re-established.

Another characteristic of the performance system is that a DoD STARBASE location can only advance to higher levels of performance after it successfully attain a positive assessment in the current level (i.e. a location must meet all required activities in Level I before it can claim any activities in Level II and so on). While a program should move toward the activities supportive of Level II and III, a location will not be reviewed for acceptance until the prior level has been successfully obtained. The objective of installing the Level I-III program is to allow each location to follow a realistic strategy to achieve higher levels of performance and improve its program by developing quality instructional applications for student performance.

The system provides a set of prescribed activities that distinguishes a location from others by outlining a set of desired end objectives. The successful attainment of these selected levels of performance provides OASD/RA and the military service representative a way to determine whether a DoD STARBASE location should be selected and/or considered for special programs at the national level. Furthermore, this system not only distinguishes those locations that operate at higher levels of performance to their sponsors and to their participant groups, but also promotes higher levels of performance to the target groups of students, the local community, the school system, and the military base sponsor.

The last two years concentrated on identifying and validating the range of activities that can be attained by all locations in Levels I and II and can be properly assessed in a specified time. The first two levels should be attainable by all currently operating locations within 12 to 24 months. Each location's available resources and current condition will determine the timeframe to attain Levels II and III.

The assessment of level status will be obtained through several venues such as self-reporting, visitations, and periodic interviews and surveys. The OASD/RA office may choose to emphasize particular considerations as priorities from each performance level. To maintain Levels II and III, items will be assessed for retention of level status. This will require an upgrade and individual profile assessment on the items for each location at Level II and Level III.

LEVEL I-III DESCRIPTIONS

Level I: The Basic/Fully Operating Location

A Level I location meets all basic DoDI requirements and operating guidelines stipulated by OASD/RA. These include required program activities such as student numbers, classroom hours, core curriculum content, military base program delivery, target student population, required documentation, and reporting within scheduling requirements and several other administrative responsibilities. The major condition, over this past period, has focused on successful installation of the new core curriculum without alterations. There are, at this time period, several locations that still need proper review for Level I validation; however, most locations have achieved Level I status.

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 and fiscal program operations. These are a combination of organizational and administrative requirements set by OASD/RA to obtain desired program delivery and operational effectiveness. These activities include, but not exclusively, participant group involvement, program enhancements, quality of service, STEM program inventories and assessment that enhance student participation, budget management planning and review, personnel management plans, equipment status assessment, "children-at-risk" review, staff development/personnel plans, transfer of leadership plan, management resource manuals, and several other considerations that upgrade management and operating performance. More details on the criteria for obtaining this level of performance are provided below:

- Budget Management Plans – This document plans for the design and development of operations; staffing; and program delivery of expenditures, potential expense increases, and/or reductions. This assessment plan should identify areas of shortfalls and proactive/reactive plans of action for anticipated areas of corrective action. The management plan will be an ongoing instrument, with notification to participant parties on budget condition reported on a continual basis.
- Program Budget Revisions – This activity is related to the above but will be part of the ongoing management reporting system (monthly or quarterly), and expenditures will be pro-rated over the program year to identify short falls, surpluses, and adjustments. If the budget is anticipated to over-run, and corrective action is required, the director will report the desired and appropriate action to OASD/RA and key participant sponsors.
- Management Succession Plan– This document, or set of documents, includes all required DoDI installation documents; overview of scheduling commitments; list of key contact names and phone numbers; property inventories; personnel records, financial and budget documents; strategic plans; curriculum and lesson plans; all documents relative to program operations, exceptions to standard practice, personnel evaluations, and staff development plans; and any other documents that are necessary. All documents should be readily available to transfer from one director to another staff member in case of emergency or change in leadership. This also includes copies of board member meetings (if a not-for-profit exists) and all external funding and financial arrangements with third parties. If a leadership change occurs, the new director, after review of the materials, would sign off on the documents' completeness and availability. Any shortfalls should be noted and identified for search and availability. The resource management document also serves as the basic document for visitation compliance review and accounts for the documentation for Level I location performance requirements. While most of the operating documents (i.e. scheduling, lesson-plans, contact lists, etc.) can be put into one source manual, personnel records should be on file and their location and accessibility should be identified in the main document. Other documents such as copies of MOUs, audits, etc., should be handled in a similar manner.
- Personnel and Staff Development Plan – This plan includes an annual review and assessment of personnel, skill, and resource development activities each staff member is directed to complete and key assignments and challenges for the program year. This plan also includes certification requirements, turnover procedures, out-placement steps, and exit interviews.

- Equipment and Physical Resource Assessment Inventories – These inventories are part of the managers' resource document for the purpose of providing audits, and an annual equipment and physical resource review to identify upgrades and replacement is essential for timely and effective delivery of program instruction as well as the safety of students. Budget considerations and program upgrades are linked to the inventory, and the results are forwarded to the OASD/RA program manager. Periodic audits of property will be incorporated into these assessments.
- Annual Review of Target Population – This is a review of the student population served in the location's community. This assessment should be shared with the school's administrator for concurrence in order to reach desired objectives.
- STEM-Related Project/Program Inventory and Assessment – This activity is key to the next step at Level III. It is the basis for the creation of a plan for a higher level of activity in the STEM area after DoD STARBASE. A requirement for Level II status is to obtain an inventory of STEM programs in the community, including the military base, that provide programs, services, resources, and activities related to STEM that could be linked to the student population for referral, collaborative activities, partnership relationships, and formal linkages. Locations should not only build an inventory, but also assess the fit with the DoD STARBASE STEM objectives and whether future collaboration is appropriate. The product at this stage is to create an inventory, obtain a complete description and requirements of the STEM program, and build a potential relationship that creates linkages for the target population to further their interests in the STEM area.

There are several other operational and program development activities that require attention at Level II. They will emerge as visitations and reviews are conducted to identify key concerns across DoD STARBASE locations. The OASD/RA program manager will review the considerations for inclusion after field-testing and observation.

Level III: A High Performing Location

Before pursuing any program enhancements in Level III, the highest level of performance, sites must have achieved Level I and Level II status. Level III requires the development of an activity or set of activities that advance the core curriculum, advance STEM-related activities, and incorporate DoD STARBASE methodologies and instructional modalities. This includes the use of supplemented non-DoD resources, in whole or in part, that result in positive review and testing by OASD/RA for acceptance and transportability to other locations. Operational enhancements, higher-level problem-solving techniques, time-sensitive improvements, and efficiencies in operations could be included in the assessment of Level III activities. The activity must have significant potential to reach the student population. It must be STEM-related and be sustainable. It should be transportable to other locations, and it should be able to be implemented and operating within an 18- to 24-month period.

The validation of the activity's installation and sustainability as well as operational potential for transportability would be assessed by the visitation evaluation team and reported to OASD/RA.

Consideration in Performance Application

It is expected that before these levels are formally applied, they will be reviewed for location-wide application, appropriate level designations, the temporal period in which they can be successfully attained, the fairness and equity in installation in all locations given local resources and capabilities, the level of magnitude in affecting performance, and position for downstream sustainability. These criteria require some manner of field-testing and careful review with recommendations to the OASD/RA program manager before implementation.

The performance criteria as presently constructed are based on a comprehensive review of DoD STARBASE program operations and delivery. OASD/RA will determine appropriateness and fit to the above criteria and the overall mission of the program. The considerations that give rise to this assessment process come from several sources: DoD STARBASE staff, steering committees, school administration, teachers,

past assessment guidance/findings, program participants, and military service arm managers. It is expected that over time, critical events, growth considerations, fiscal implications, new technologies, and linkages with other program and STEM organizations will alter and enhance the program. The process will be refined and expanded as these activities are incorporated into the program as partners, referral agents, and collaborators.

Current States of Assessment

Given the introduction of the new curriculum coupled with the current review process by the curriculum committee of lesson-plan revisions and their accessibility, there are several locations that will require corrective action. All locations are currently in Level I conditional status until visitations and reporting documentation is completed. It is expected that a significant number of locations will successfully obtain Level II status within this coming program year. The visitation reports of 2011 have confirmed this reality in most of those locations reviewed for compliance and assessment.

Summary

The implementation of a Performance Assessment System is an extension of the research assessment process with a progressive set of activities guiding locations to higher levels of performance. The system is designed to be achievable by all operating locations in a reasonable period of time with minimal pressure to dramatically increase their budgetary endeavors. As the visitations of the locations indicate, many locations are in a favorable position to obtain Level III status within a practical time period (e.g. some within 24 to 36 months). The above criteria have been established to guide the locations on their journey. The criteria await approval by OASD/RA and have yet to be implemented.

FISCAL ANALYSIS

A Congressional appropriation to the Department of Defense (DoD) funds the operation of DoD STARBASE. The Office of the Assistant Secretary of Defense for Reserve Affairs (OASD/RA) oversees the program and administers the funds. In 2011, the total program budget was $27,451,000. OASD/RA allocated $18,563,000 (67.6%) for location operations, which is the amount used for the analysis in this report, and $5,430,275 (19.8%) for new and enhanced DoD STARBASE programs.[6] The remainder of the appropriations was used for evaluation/assessment activities, staff development and training programs, and overall program design and development activities.

In 2011, the average operating costs per location were $331,482.14 (see Exhibit 12). This is a 3.5% increase from 2010 and a 21.7% increase from the average cost per location in 2004. The average cost per student increased to $308.27 this year. This is almost a 3% increase from the 2010 average cost per student and 5.4% from the average cost per student in 2004. If the students attending a summer and/or a supplemental program are included, the average cost per student is $265.90. Supplemental programs typically occur during the summer months, after DoDI requirements have been met, and vary in length and curriculum.

Cost per Academy/Student 2004–2011
Exhibit 12

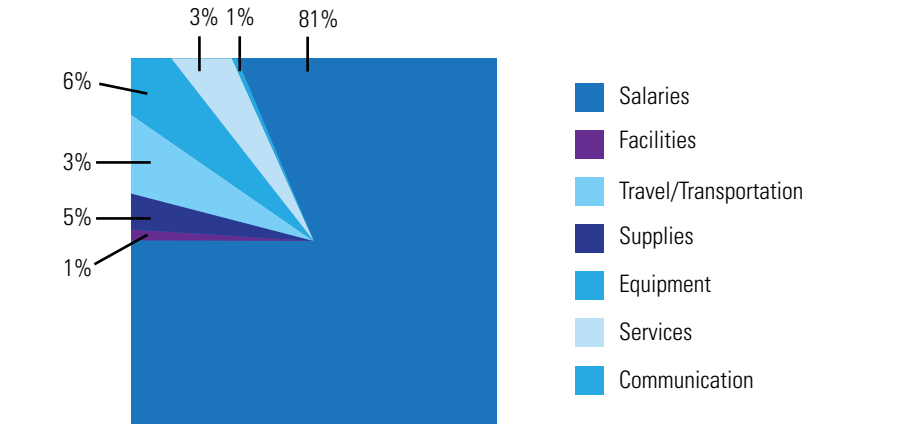
Year	Average Cost Per Location	Average Cost Per Student*
FY'04	$272,469	$292
FY'05	$273,040	$262
FY'06	$293,584	$293
FY'07	$301,773	$299
FY'08	$310,895	$328
FY'09	$317,638	$302
FY'10	$320,304	$299
FY'11	$331,482	$308

*Include students attending a four- or five-day program.

Operational costs differ between DoD STARBASE locations. Overall expenditures of DoD funds allocated to each program site are shown in Exhibit 13. Staff costs range from 62% to 98% of the location's budget and on average accounts for 83.5% of the site budget.

[6] This includes 16 new programs in CA-3, GA, IN, LA, MI, MT, TX-2, WA, WI, NV, CO, UT, and MA.

2011 Expenditures of DoD Funds
Exhibit 13



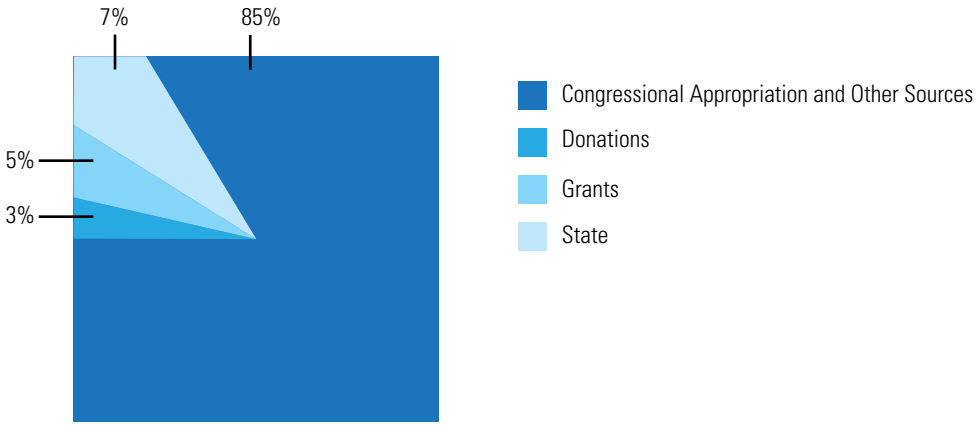
Several factors contribute to the cost variances, including geographic location, outreach programs, and salary scales. OASD/RA reviews each location's budget to maintain an equitable distribution of funds. The following exhibit compares the average cost per location by the military affiliation.

2011 Average Cost per Academy by Military Affiliation
Exhibit 14

Military Affiliate	Number of Academies	Average Cost Per Academy
Air Force	5	$308,200
Air Force Reserve	3	$327,667
Marine Corps	1	$326,998
National Guard	36	$422,265
Navy	15	$288,997

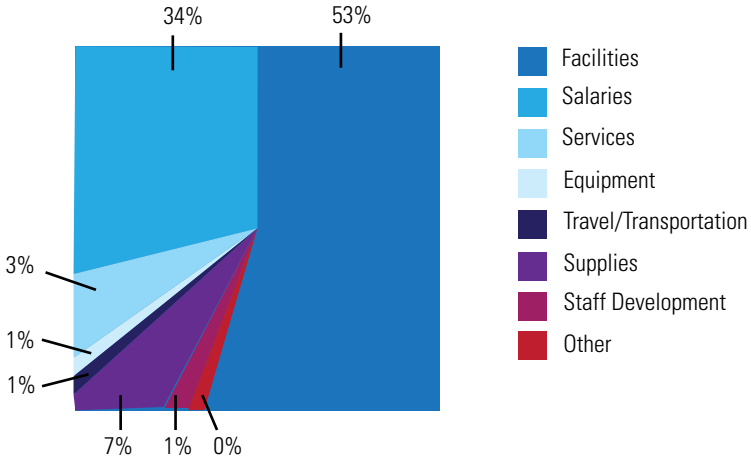
Nineteen of the 56 locations obtained supplemental funding from non-DoD sources. The total raised in supplemental funding was $2,638,115 (see Exhibit 15). The average raised by other locations that secured additional funding through state allocations, grants, and donations was $14,168.96. The monies received by these sources were $186,000, $123,800, and $94,967 respectively.

Source of Supplemental Funding 2011
Exhibit 15



The largest supplemental funding expenditure was for facilities ($2,137,215) followed by staff salaries ($1,376,252), supplies ($284,754), and services ($78,635.11) as shown by Exhibit 16 below.

Expenditures of Supplemental Funding 2011
Exhibit 16



ASSESSMENT INSTRUMENTS

For over a decade, student and teacher assessment has been an integral part of the DoD STARBASE program. However, 2010 was an exception when only attitudinal testing was analyzed for the annual report as the result of major revisions in the DoD STARBASE curriculum. This year the student knowledge test was updated and field-tested for the 2010-2011 program year. The test items that were inconsistent with the new core curriculum content objectives were redesigned.

During that process, the installation of the curriculum was in progress, which resulted in field-test scheduling disconnects. The field-test program of the student assessment continues into the 2011-2012 program year, as the core curriculum changes are fully implemented across all DoD STARBASE locations. The pilot field test presented in this report and a copy of the updated student and teacher assessment instruments are provided in the Appendices. The attitudinal instruments for both groupings were unchanged, but new attitudinal items reflective of program changes will be added for the 2011-2012 program year.

OVERVIEW

There are two tests that are administered to students in collaboration with the school administration. One test focuses on the students' knowledge and skills related to the concepts and content of the core curriculum presented during the DoD STARBASE program. Another test assesses social citizenship, military and community awareness perceptions and attitudes. The two tests are administered in collaboration with classroom teachers prior to the start of the program (pre-program) and then repeated at the program's conclusion (post-program). The analysis tracks differences and shifts that correlate with program participation.

The program constructs used in the assessment instruments include:

- Knowledge and skills presented in the DoD STARBASE core curriculum.
- Attitudes toward math, science, technology, and engineering (STEM).
- Citizenship, community awareness, and pro-social behavioral attitudes.
- Attitudes toward the military (i.e., personnel, environment, and careers).
- Perception of DoD STARBASE experiences and effectiveness.
- Impact of the program on students and their future behavioral decisions.

Each year the student assessment instruments are revised and updated with new or modified items to reflect changes in curriculum, coverage balance in STEM topical areas, language appropriateness, and item difficulty. Rating scale reliability and student understanding of the scales are checked through selected test items, and the analysis indicates that the students understand the scales and how to use them. Feedback and suggestions by staff and program participants are solicited on the test, test items, and administration and often results in refining and/or replacing items. Changes in test items and testing procedures do occur as a result of this process, and these adjustments are encouraged. The test program over the past decade had remained relatively stable and, in most cases, provided a rich base for trend analysis on the majority of assessment construct. However, the recent change in the core curriculum will reduce the range of trend item comparability on several constructs.

There is a constant need to develop a larger pool of items that cover the basic content and objectives of the curriculum, so the test can be systematically changed without further field-testing while still retaining essential coverage of the basic program constructs. With an expansion of the field test this coming year, it is expected that this potential will be met. Replenishing selected items each year will help to improve the validity of the assessment instruments.

The following section describes the design, administration, methodology, analysis, and challenges in the pilot testing process with regard to the new core curriculum. This process is the first step in a major revision of the testing instrument that has been in place for more than a decade.

The process of administration and general approach is similar to previous year procedures. This initial experience presented several new challenges and considerations in design and item construction for building a testing process that is both reliable and valid while assessing those elements and objectives desired in the instructional experiences.

TEST ADMINISTRATION LOGISTICS

In collaboration with school administrators, the student assessment was administered to 1,530 DoD STARBASE students in the spring of 2011. The student assessment instruments were sent to DoD STARBASE locations with instructions for test administration. The instructors were asked to administer the student assessment instruments on the first and last days of the program.

All questionnaires were returned to Vangent Inc. for processing and analysis. The tests were processed via scan-form technology. There were 55 locations that responded to the pilot field test, which obtained the responses of the 1,530 students previously mentioned.

The vast majority of students completed most of the items. There were a few who did not complete some of the attitudinal items on the post-test, but those were few in number.

The pre-test described a student population that possessed a wide range of ability and understanding which suggests that for some students the concepts presented during their DoD STARBASE instruction were not novel. The pre-test program knowledge and attitude assessment provides a baseline of what the students know about content areas and their attitudinal frame before they attend the DoD STARBASE program. The post-test provides an assessment of their knowledge, understanding, and perceptions at the completion of the program by plus or minus adjustments as described by gap measurement and significance tests.

INSTRUMENT DESIGN

The development and selection of test items for the student knowledge assessment is linked to the core curriculum objectives, instructional skill, and problem-solving applications that are standard to the DoD STARBASE program. Test items are multiple-choice response items that attempt to cover all core content areas. The attitudinal test assesses student pro-social, citizenship, community awareness, and perception on items, skills, and abilities necessary to be successful in personal challenges. The attitudinal items are rated on a seven-point scale and analyzed on pre-post attitudinal shift (i.e. gap) analysis on the following content construct areas:

- Math, science, technology, and engineering (STEM)
- Military, military personnel, military careers, and the military base experience
- Community awareness, citizenship, and pro-social attitudes
- Program effectiveness
- Program impact

The recent and extensive core curriculum changes and upgrades focus on the standardization of core curriculum objectives. The revision included significant changes in content emphasis, particularly on STEM topics, and learning results' objectives. Of the 33 items that currently comprise the knowledge test format, 24 are new items that reflect a greater emphasis on the new curriculum and "results" objectives,

especially those on STEM topics. The carry-over items primarily relate to the fifth grade school curriculum to obtain a base level of where student knowledge resides upon program entry.

At the time of the test development, there were still changes in the curriculum under review. Therefore, the current pilot test required further review for obtaining content coverage, balance, and reliable changes in program objectives and emphasis. This is the first pilot test and changes, upgrades, and new items will be added to reflect program content, skills application, and core unit objectives.

ASSESSMENT CHALLENGES AND INSTRUMENT REVIEW PROCESS

Curriculum content and emphasis in program delivery are in constant change, which emphasizes the need for practitioner input and periodic review and analysis to be systematically applied and scheduled. Requests for review and comments by field personnel are an essential part of test construction and review. It is recommended that a test development review committee (panel group) composed of location personnel, OASD/RA representatives, and military service managers be used to assist in the development process prior to field-testing. This will include the fit of test items to core content areas, coverage of content, quality, and degree of item difficulty. In some cases, the committee will assist test design specialists by creating suggestions for item design.

The following considerations will guide the new knowledge test development:

- Coverage of core curriculum objectives and student performance expectations as articulated in the lesson-plan results section.
- Balance of test item difficulty with attention to creating base-line school performance objectives at pre-program understanding, so shifts in part-program assessments can be established. Gap performance analysis should guide the item design approach.
- Reduce, replace, and eliminate as many "knowledge-only" test items with conceptual and/or problem solving item applications.
- Analyze reading level prior to field-testing items.
- Ensure the ongoing review of curriculum standards, objectives, and instructional applications as well as the fit of test item construction and coverage with attention to the degree of difficulty compatibility if item replacement is required.

The above are basic guidelines. OASD/RA will provide further guidance in general test design. The objective is to develop an instrument that measures student performance across the locations based on their understanding and skills in the use of concepts and applications of the DoD STARBASE curriculum.

There are a number of methodological and analytical challenges in developing a single assessment instrument, such as the student knowledge test in the assessment process. The challenges emerge in the variances in the composition of the student population across the program regions, regional and state curriculum requirements, instructor emphasis on content and applications, and in the resources and physical environments in which the program operates.

While there are several other challenges to the knowledge testing instrument, the one instrument that garners the greatest attention is that of student performance on the core curriculum content. Students arrive at the program with differential knowledge in key learning constructs. It would be more reasonable from an experimental basis to prequalify students upon entry and apply multiple assessments or to put the assessment on a controlled experimental design where students are randomly assigned to DoD STARBASE and control groups. This method would be costly and is not feasible with the breadth and scope of a large field operation such as DoD STARBASE.

The assessment process utilized a standardized curriculum, pre-post testing, total impact assessment, staff training on instructional

modalities, and analytical applications of the data obtained. Emphasis on a standardized curriculum and a triangulated verification process from other critical observers on the program's impact on students and participant groups ensured additional rigor.

As previously indicated, revisions to the student assessment instrument occur on an annual basis. This is necessary as new items are added for content changes. While annual review is protocol, the recent revision in the total curriculum required a similar revision of the student testing process. The next pilot field test will be scheduled in the middle of this upcoming program year, so a near-to-complete test assessment system will be in place by the 2012-2013 program year.

DOD STARBASE STAFF FEEDBACK ON THE STUDENT ASSESSMENT FIELD TEST (2011)

There are several procedures involved in the field-testing of the student assessment instruments. They include the empirical applications of item analysis, reliability and validity of the testing process, test administrative procedures, language level, fit of items with curriculum objectives and emphasis, coverage of curriculum content, and level of test difficulty. An important step in field-testing involves instructor/staff feedback on several of these procedures. DoD STARBASE location staffs are the prime test administrators, and their experiences, perceptions, and observations of student responses, administrative procedures, and test item relevancy to curriculum objectives are critical to the design and development of a reliable and valid testing instrument.

The DoD STARBASE program has recently revised and upgraded its core curriculum. These program changes necessitated a concurrent modification and upgrade of the testing instruments both in content, objectives, and in the validity/reliability of the testing process. A key element in test development, and one that DoD STARBASE has promoted on an ongoing basis throughout all program years, is to obtain staff input and suggestions on the test and the testing process. DoD STARBASE staff members are encouraged to submit, at any time, comments and suggestions on the test and the testing process. Over the years, many of the changes made to the testing instrument were the result of staff input. During the field-testing of a new test, the feedback is more structured. Using an online survey, each location is asked to provide comments as a group on the test and its administration.

For the most recent field test, a survey instrument was forwarded to each DoD STARBASE location for its input to the process. It included ratings on 10 items as well as soliciting unstructured comments about the assessment. The survey ratings covered test administration and curriculum content. In all, 44 DoD STARBASE locations responded to the survey. It is important to note that the field-testing process will continue since the full implementation of the curriculum and agreed-upon standards in the curriculum content is still in progress. The following are the responses to the first field test from DoD STARBASE personnel.

SURVEY ADMINISTRATION

There were four survey administration items measured on a six-point rating scale:

- Clarity and ease of instructions
- Ease of pre-coding instructions
- Student understanding of items and survey completion
- Student completion of test in allotted time

The results, as seen in Exhibit 17, are presented as rating range, mean average rating, and standard deviation. Overall, the DoD STARBASE staff responded that the survey administration was clear and easy to follow; the students' ability to understand the items and complete the survey were moderately high; and that while the item related to student completion of the survey in the allotted time was positive, it rated

the lowest of the four. The latter two items (i.e. student understanding and student timely completion of assessment) provided the greatest number of comments and suggestions. Due to the STEM-rich vocabulary inherent to the DoD STARBASE curriculum, the reading level of the test is above the fifth-grade level. Several comments suggested a time limit (i.e., allotted time period for the test).

Staff Survey Ratings on the Survey Administration Items
Exhibit 17

	N	Min	Max	Mean	Std. Deviation
Survey Administration Items					
The survey administration instructions were clear and easy to follow.	44	5	6	5.41	.50
The survey pre-coding instructions were easy to follow.	44	3	6	5.45	.66
The student's understood the survey items and how to complete the survey.	44	2	6	4.64	1.30
The students were able to complete the survey within the allotted amount of time.	44	1	6	4.16	1.41

TEST CONTENT RESPONSE

There were six STEM survey items related to the content of the test, each covered by the following areas of test construction:

- General curriculum coverage
- Level of assessment
- General test comments
- Curriculum content areas omitted
- Items not applicable to curriculum
- Comments on specific items

The five core curriculum areas (i.e., chemistry, engineering, math, physics, and technology) along with the overall curriculum coverage were the basis of the assessment. The ratings (seen in Exhibit 18) were least satisfied with the coverage of engineering and technology and the comments, in most cases, were very specific.

Staff Survey Ratings on Content Items
Exhibit 18

	N	Min	Max	Mean	Std. Deviation
Survey Content Items					
Overall, the survey measures important areas of the curriculum.	44	2	6	4.23	1.08
Chemistry Science	44	2	6	4.84	1.12
Engineering	44	1	6	3.43	1.44
Mathematics	44	1	6	4.48	1.21
Physics	44	2	6	4.45	1.19
Technology	44	1	6	3.68	1.25

The design and development of this initial field test on the student assessment was put into place during the curriculum committee's review of several lesson plans and during the installation of the newly standardized core curriculum. While there were a number of lesson plans and content not fully in place, there was sufficient program content to proceed with the process. In addition, the program year for student accessibility was limited.

The value of obtaining test results for a large portion of the curriculum over-rode the problems of a completed program in place. The results in both the test and the feedback from location staff proved valuable for the revisions and changes in the testing process. The 20 pages of itemized comments and suggestions will be reviewed and evaluated for inclusion in the next field test scheduled for early 2012. The DoD STARBASE process encourages and utilizes location staff feedback on all research and evaluation content and procedures. Their value and impact on the improvement of the program in a systematic and observable level is essential to obtain that objective.

2011 STUDENT ASSESSMENT

The following highlights of this year's student assessment results were obtained by pre- and post-comparative analysis of knowledge and attitudinal shifts. The overall analysis indicates that students demonstrate significant positive gains in knowledge and understanding of DoD STARBASE concepts, and they have positive attitudes about their DoD STARBASE experience. A more detailed presentation on the program's basic concepts and results follow in the analysis section on knowledge and attitudinal assessment.

The analysis suggests several areas in which the assessment and testing applications can be enhanced and made more powerful. This includes more extensive coverage of the technology component in the knowledge assessment, where the content curriculum was incomplete at the time of test development.

Enhancements in other areas of program operations were identified in regard to military branch and geographic differences, as well as location operational maturation. These elements will be discussed in more detail in the analytical presentation. The data demonstrates very distinct and significant differences in knowledge and attitudinal shifts on several demographic characteristics. Core curriculum differences and their impact across the DoD STARBASE locations are substantial and significant in several areas.

PILOT FIELD TEST: ADMINISTRATION, METHODOLOGY, ANALYSIS, RESULTS, CONSIDERATIONS, AND NEXT STEPS

The test administration process and data collection covered the period from March 2011 through June 2011.

The analysis focused on the following indicators and also provides the major themes in the presentation of the study results:

- Pre- versus post-program comparisons
- Gender comparisons
- Age and grade level comparisons
- Length of location operation comparisons
- Branch and region comparisons
- Profile of high and low performers
- Profile of high and low military attitudes
- Item difficulty
- Identification of program strengths
- Identification of program developmental needs
- Discovery of drivers of opinion (preferred outcomes)

The analytical focus of the student performance assessment is to document the shifts in knowledge and skills on a pre-post basis that correspond to program participation. The above analytical constructs resulted in producing wide variations in assessment results. Overall, students arrived with variant experiences to the DoD STARBASE program and emerged at its conclusion with different perceptions and knowledge than they had upon entering the program.

These analyses are designed to provide insights on the strengths, needs, and opportunities that the study results provide to the various sponsors and participants of the DoD STARBASE program. As consumers and participants, interests and program support vary with each grouping.

For the instructor/practitioner, the results provide a number of useful insights into program delivery, operational considerations, instructional modalities, and curriculum impact on various core curriculum applications. Participant/sponsor groups, such as the school system, may see DoD STARBASE as a vehicle for supplementing their own program operations and state standards as well as utilizing elements of the DoD STARBASE methodologies in their own system. Sponsors may use the results as a validation of their continued support through the documentation of program effectiveness and the impact on their own institutions and their mutual constituency, the students. Considerations that are derived from this analysis are given more detailed discussion at the end of this report along with other operational, compliance, and location performance suggestions.

The report documents a large variance in the student and teacher responses on the curriculum and student performance across the DoD STARBASE locations. Although responses were consistently positive, they demonstrated highly variant differences across the locations and military sponsor groups. For those consumers of the DoD STARBASE program, the discussion of program drivers in this report can be useful to focus efforts on those activities that provide the greatest impact on desired and preferred outcomes.

STUDENT DEMOGRAPHICS

There were 1,530 students responses captured in the pre- and post-program analysis. Exhibit 19 presents the basic demographics on student age, grade level, gender, regional location, and military sponsor group affiliation. Analysis offered the following overall conclusions:

- The demographics are very similar to past years. Gender differences between boys and girls were almost equally split at 49.3% and 48.4% respectively.
- More than 85% of the students represented the 10- to 11-year-old age group.
- There was an increase in grade level to the fifth grade (an increase to 84.4% from the 79% last year).
- Regional representation was good across the states with higher concentrations in the Southeast at 26.6% and the Midwest at 26.8%.
- The sponsoring military branches displayed greater concentrations with the National Guard comprising the majority of students at 64.7%.

Demographic Profile of Student Sample
Exhibit 19

Item	Response	Frequency	Percent
Age	8	0	0
	9	17	1.1
	10	490	32.0
	11	818	53.5
	12	132	8.6
	13	7	.5
	14	2	.1
	15	1	.1
	17	1	.1
	19	1	.1
	Unknown/No answer	61	4.0
Grade	3	1	.1
	4	50	3.3
	5	1291	84.4
	6	147	9.6
	7	2	.1
	8	0	.0
	9	4	.3
	Unknown/No answer	35	2.3
Gender	Boy	755	49.3
	Girl	741	48.4
	Unknown/No answer	34	2.2
Region	East	230	15.0
	Southeast	407	26.6
	Midwest	410	26.8
	South	252	16.5
	West	231	15.1
Sponsoring Branch	Air Force	98	6.4
	Air Force Reserve	75	4.9
	Marines	41	2.7
	National Guard	990	64.7
	Navy	326	21.3

The analysis of students' prior experience and knowledge about the military demonstrates several differences in student knowledge/skill performance and attitudinal assessment. The results regarding prior experience and knowledge of the military and the DoD STARBASE program are provided below. The majority of students (over 60%) had met military service members before coming to DoD STARBASE. Approximately the same number had heard of DoD STARBASE (62.5%) or knew someone who participated in a DoD STARBASE program (61.9%) prior to their attendance. The differences between prior exposure to the military and knowledge about DoD STARBASE are also evaluated in a later section. This year's student population had higher numbers who had met military personnel, 60.7% as compared to 56% last year.

Students' Prior Experience with Military and DoD STARBASE
Exhibit 20

Item	Response	Frequency	Percent
I have met military people before coming to STARBASE			
	No	555	36.3
	Yes	928	60.7
	Unknown/No answer	47	3.1
I heard about STARBASE before I knew I was coming here			
	No	526	34.4
	Yes	957	62.5
	Unknown/No answer	47	3.1
I know someone who went through STARBASE before me			
	No	535	35.0
	Yes	947	61.9
	Unknown/No answer	48	3.1

RESULTS OF THE STUDENTS' KNOWLEDGE AND SKILLS ASSESSMENT

The student knowledge assessment test underwent significant changes this past year in response to the introduction of the new curriculum. The pilot test utilized 33 multiple choice items, most of which are outlined in the following exhibit. These results are also provided in the appendices with frequencies, average means, and significance levels.

The FY11 test included seven items retained from the prior test that focus on establishing baselines for fifth-grade knowledge levels of basic concepts. Two additional items from the previous test were modified to fit current curriculum objectives, and 24 new items were added that focus on application-based knowledge. The prior test items were modified allowing for some comparability and trends from previous assessment years. The following exhibit displays each test item's sequential number and its status in terms of its recurrence or retention from previous assessments. Each of the knowledge items is organized by each curriculum's core curriculum STEM area.

Knowledge Items by Curriculum Area
Exhibit 21

CHEMISTRY SCIENCE (E3.1.1.2)		
Atmospheric Properties	**Item #**	
On hot days potato chip bags seem to "inflate" even though they have not been opened. What causes this?	4	New
Which pie chart represents the correct composition of air?	5	New
Air presses down 14.7 pounds on every inch of our bodies. Why don't we feel this pressure?	6	Original
Which of the following has properties similar to the properties of air?	18	New
The air is composed mostly of what element?	31	Original
How thick is Earth's atmosphere?	32	Original
Building Blocks of Matter		
The diagram below shows one possible way that matter can be composed of molecules. What state of matter is shown by the molecules in the diagram?	1	New
Which of the following is an example of a compound molecule?	2	New
Water is formed by bonding the elements of Hydrogen and Oxygen (H_2O). What does this bonded substance represent?	29	New
Physical and Chemical Changes		
Which of the following is an example of physical change?	3	New
In what state of matter do molecules have the least amount of energy or motion?	17	Original
Which of the following is an example of chemical change?	26	New
To change a substance from a liquid state to a gaseous state, you could:	27	New
ENGINEERING (E3.1.1.4)		
3-D Computer-Aided Design		
Which of the following best shows the alignment of horizontal objects?	22	Original
Compared to the first solid trapezoid, select the trapezoid that has been rotated 90 degrees.	25	New
MATHEMATICS OPERATIONS & APPLICATIONS (E3.1.1.5)		
Data Analysis		
An experiment calls for 150 milliliters of water. If you are performing the experiment three times, what is the total amount of water you will need?	10	New
An engineer is testing how well three different towels absorb liquids over three trials. For the three trials, Towel A absorbed 25, 22, and 28 milliliters of water, Towel B absorbed 34, 40, and 38 milliliters, and Towel C absorbed 45, 51, and 47 milliliters. Select the graph that correctly represents the results of the experiment.	23	New
Geometry*		
In the graph above, find the letter that is at the coordinates (3,-2). Is it A, B, C, or D?	11	New
Measurement		
When measuring the amount of liquid in a bottle of water, what unit of measurement is most commonly used?	12	New
What is the volume of the above container?	28	New
What is the length of the leaf in centimeters?	30	New
If the diameter of the circle is 10 meters, what is the radius?	33	Modified

Continued

Numbers and Number Relationships		
A red blood cell is about 10,000 nanometers in diameter. What would this be in meters?	13	New
PHYSICS (E3.1.1.1)		
Fluid Mechanics & Aerodynamics		
Based on Bernoulli's Principle, what happens when air or water is forced between two objects?	7	New
One reason an airplane is able to gain lift is because the air moving across the top of the wing….	14	Original
Newton's Laws of Motion		
What scientific law is operating that makes it important to wear a seat belt?	15	Modified
If you launched two rockets, one with a mass of 50 grams and one with a mass of 100 grams, using the same amount of force, which rocket would go highest?	16	Original
A plane sits on a runway in a state of rest. Of the four main forces that act on aircraft, which one is most likely to cause the forward motion as an airplane moves along a runway?	8	New
Once the airplane is airborne and at a constant state of motion, which force is equal to the force of thrust?	9	New
TECHNOLOGY (E3.1.1.3)		
Innovations		
A student wants to find out which type of sponge holds the most water. He uses four identical containers with holes in the bottom. He puts a different type of sponge in each container and pours the same amount of water in each container. How can he find out how much water each sponge absorbs?	19	New
What conclusion can be drawn from the above bar chart?	20	New
Navigation and Mapping		
Which of the mountains below correspond to the contour map above?	21	New
You are biking on a path and stop at GPS coordinates of 31° 50′ 48″ N and 74° 20′ 18″ W. Which direction should you head if you want to reach coordinates of 31° 50′ 48″ N and 74° 0′ 0″ W?	24	New

**One of the new items (Item 11) on geometry had a graphing error and corrective action and explanation on subsequent analysis is described in Appendix A. For presentation purposes, the item was removed from the overall index and the mathematics area analysis.*

PRE/POST KNOWLEDGE ASSESSMENT MEAN SCORES BY CORE CURRICULUM AREAS

The 33 student assessment items were organized into the four core curriculum constructs of chemistry sciences, physics, mathematics, and technology for calculating pre-and post-test mean scores and gap scores (i.e., difference between pre-program and post-program test scores). The chart clearly demonstrates that all post-program means were higher than the pre-program means, resulting in positive gap scores for each item as well as for core area constructs. All post-program measures were statistically significantly higher than the pre-program means.

The chemistry science item construct was highest in the gap score at +3.17; physics was second with a gap score of +1.31; mathematics at +0.76; and technology at +0.44, as seen in Exhibit 22. These mean scores were much lower than previous years due to the increased difficulty of the test and also the recent installation of the new curriculum and its anticipated work-out adjustments. This same experience occurred when testing was first introduced to the program over a decade ago. Adjustments in the development of the test and in the full implementation of the program curriculum will most likely see improved scores.

However, it is significant to note that the overall gap scores have retained the same ratio as in past years. In fact, the following presentation of knowledge scores demonstrates that the average gap score was one of the highest over the past several years, and if scores were adjusted because of test item numbers, it would rank first and a second for that period.

Pre/Post Knowledge Assessment Mean Scores by Curriculum Areas
Exhibit 22

Curriculum Area	# of Items Mean Score	Pre-Program Mean Score*	Post-Program	Gap
Chemistry Sciences (Subtotal)	**13**	**5.36**	**8.53**	**+3.17**
Building Blocks of Matter	3	1.38	2.05	+0.67
Physical and Chemical Changes	4	1.61	2.35	+0.74
Atmospheric Properties	6	2.40	4.14	+1.74
Physics (Subtotal)	**6**	**2.59**	**3.90**	**+1.31**
Fluid Mechanics and Aerodynamics	2	.45	1.14	+0.69
Newton's Three Laws of Motion	4	2.14	2.76	+0.62
Mathematics Operations and Applications[a] (Subtotal)	**8**	**4.14**	**4.90**	**+0.76**
Data Analysis	2	1.28	1.48	+0.20
Geometry[b]	1	.50	.63	+0.13
Measurement	4	2.54	2.99	+0.45
Numbers and Number Relationships	1	.37	.43	+0.06
Technology (Subtotal)	**4**	**2.02**	**2.46**	**+0.44**
Innovation	2	1.39	1.55	+0.16
Navigation and Mapping	2	.66	.91	+0.25
Engineering: 3-D Computer-Aided Design	**2**	**1.20**	**1.42**	**+0.2**

**Post-program means are statistically significantly higher than pre-program means.*
a Item 11, Geometry, was removed from this total due to the smaller sample size of valid responses.
b Only valid responses to this item were included

PRE/POST KNOWLEDGE ASSESSMENT SCORES

This year's overall student knowledge assessment means were positive and statistically significant. The analysis was based on 1,241 students whose scores were included for analysis (note: a number had to be dropped on the overall score because of incomplete responses by several of the students on the post-tests). Over the past nine-year period, this year's gap score was one of the highest at +5.76.[7] The only year higher was in 2006 when the test had a greater number of items and the rating had to be adjusted.

The following chart indicates that the pre-and post-test scores for the assessment were lower than previous years while student performance on the gap scores (i.e. improvement from pre-to post-test) were higher. The program assessment scores and the pre-post analytical application demonstrate that students have a greater understanding of the material presented in the DoD STARBASE curriculum at the conclusion of the program.

[7] The knowledge assessment did not occur in 2010 because the new curriculum was in the process of adoption and implementation throughout all DoD STARBASE locations.

2002 – 2011 Pre/Post Knowledge Test Mean Scores
Exhibit 23

	2002	2003	2004	2005	2006*	2007	2008	2009	2011**
Pre-Test Score	18.44	19.12	19.09	17.81	18.02	19.05	20.62	21.15	15.77
Post-Test Score	22.67	24.42	24.25	23.28	24.08	24.31	26.23	26.62	21.53
Gap	+4.23	+5.30	+5.16	+5.47	+6.06	+5.26	+5.61	+5.47	+5.76

Note: means for 2002 through 2007 are based on 30 items. The tests for 2008 and 2009 had 33 items, and the 2011 mean is based on 32 items.
**2006 scores were adjusted because of higher item numbers.*
***Knowledge items were updated in 2011 and reflect new content areas based on current curriculum STARBASE standards.*
The total knowledge scores for 2011 do not include item 11 of the assessment.

STUDENT PRE/POST KNOWLEDGE SCORES

Pre-program overall mean average scores indicated students entered the program with some knowledge of the basic concepts taught at DoD STARBASE. The students had an average mean score of 15.77 on a 32-item test, which meant that they arrived at DoD STARBASE with an understanding of the concepts of about half of the material (49.28%). The pre-program scores also indicated there are students who have had exposure to the applications but probably not at the depth or scope as they experienced during the DoD STARBASE program. However, the percentage of students who answered an item correctly increased for all items pre- to post-test. And, at the completion of the program, post-test scores demonstrated an increased understanding of more than two-thirds of the material (67.28%) or, in gap score terms, +5.76.

Items related to student knowledge and the application of concepts that were unknown to students at the pre-test showed a much larger increase at the end of the program experience. An example of this observation can be found in the item regarding "the correct composition of air" where correct student responses increased from 14% to 75% from pre- to post-test scores. On the other hand, concepts that students were more familiar with, such as determining "the length of a leaf in centimeters," increased by only 3% (93% at pre-program to 96% at post-program). The following chart, Exhibit 24, provides a rank-order listing by gap percentage difference (+/-) from pre-to post-test responses on correct responses. The differences are in percentages rather than mean scores to demonstrate shift change for each item.

The greatest shifts are usually found in the lower scores at entry (i.e., new concepts) with the exception of one item dealing with a GPS mapping question that is currently under review for modification, instructional clarification, and/or deletion in future testing.

Pre/Post Knowledge Test Percentage Correct and Shift Change
Exhibit 24

Knowledge Items	Pre-Program	Post-Program	% Difference
Which pie chart represents the correct composition of air?	14%	75%	61%
Based on Bernoulli's Principle, what happens when air or water is forced between two objects?	12%	60%	48%
Air presses down 14.7 pounds on every inch of our bodies. Why don't we feel this pressure?	28%	70%	42%
The air is composed mostly of what element?	45%	76%	31%
What scientific law is operating that makes it important to wear a seat belt?	38%	64%	26%
The diagram below shows one possible way that matter can be composed of molecules. What state of matter is shown by the molecules in the diagram?	57%	82%	25%
In what state of matter do molecules have the least amount of energy or motion?	51%	74%	23%
One reason an airplane is able to gain lift is because the air moving across the top of the wing...	33%	54%	21%
Water is formed by bonding the elements of Hydrogen and Oxygen (H2O). What does this bonded substance represent?	50%	71%	21%
How thick is Earth's atmosphere?	56%	76%	20%
Which of the following is an example of physical change?	32%	51%	19%
Which of the following is an example of a compound molecule?	34%	52%	18%
Which of the mountains below correspond to the contour map above?	40%	58%	18%
What is the volume of the above container?	40%	58%	18%
To change a substance from a liquid state to a gaseous state, you could:	39%	56%	17%
Which of the following best shows the alignment of horizontal objects?	58%	73%	15%
If you launched two rockets, one with a mass of 50 grams and one with a mass of 100 grams, using the same amount of force, which rocket would go highest?	72%	86%	14%
If the diameter of a circle is 10 meters, what is the radius?	50%	64%	14%
Which of the following is an example of chemical change?	40%	54%	14%
Once the airplane is airborne and at a constant state of motion, which force is equal to the force of thrust?	32%	46%	14%
Which of the following has properties similar to the properties of air?	43%	57%	14%
In the graph above, find the letter that is at coordinates (3,-2). Is it A, B, C, or D?*	50%	63%	13%
An engineer is testing how well three different towels absorb liquids over three trials. For the three trials, Towel A, B, C, absorbed... Select the graph that correctly represents the results of the experiment.	55%	67%	12%
A student wants to find out which type of sponge holds the most water. He uses four identical containers with holes in the bottom. He puts a different type of sponge in each container. How can he find out how much water each sponge absorbs?	59%	69%	10%
A plane sits on a runway in a state of rest. Of the four main forces that act on aircraft, which one is most likely to cause the forward motion as an airplane moves along a runway?	72%	81%	9%
An experiment calls for 150 milliliters of water. If you are performing the experiment three times, what is the total amount of water you will need?	74%	82%	8%
When measuring the amount of liquid in a bottle of water, what unit of measurement is most commonly used?	74%	82%	8%
A red blood cell is about 10,000 nanometers in diameter. What would this be in meters?	36%	43%	7%
What conclusion can be drawn from the above bar chart?	80%	87%	7%
Compared to the first solid trapezoid, select the trapezoid that has been rotated 90 degrees.	62%	69%	7%
You are biking on a path and stop at GPS coordinates of 31 50 48 N and 74 20 18 W. Which direction should you head if you want to reach coordinates of 31 50 48 N and 74 0 0 W?	27%	33%	6%
On hot days potato chip bags seem to inflate, even though they have not been opened. What causes this?	57%	60%	3%
What is the length of the leaf in centimeters?	93%	96%	3%

**Value calculated using responses known to be administered using the corrected graphic design.*

YEARLY COMPARISONS OF STUDENT POST-PROGRAM KNOWLEDGE ASSESSMENT

About two-thirds of the student knowledge items were replaced with new items in 2011, so a clean comparison to previous years on the mean average scores is selective and problematic. However, the tests are linked to standard curriculum, and the number of items for each year resides in the 30-item size. The curriculum still covers many of the same basic concepts of previous years, only now with greater emphasis on STEM concepts and problem-solving.

Mean success in the post-program knowledge test have continually increased since 2005 except for 2011, as seen in Exhibit 25, where the post-program knowledge scores were much lower due to testing items, a more challenging curriculum, and the fact that curriculum installation was still in progress at the time of the pilot test. It is important to note the very high gap increase of the 2011 student population.

Mean Scores on Post-Program Knowledge Test 2003-2011
Exhibit 25

Year	2003	2004	2005	2006	2007	2008	2009	2011
Post-Program Mean Score	24.42	24.25	23.28	24.08^	24.31	26.2	26.62	21.53

Note: means for 2003 through 2007 are based on 30 items. The tests for 2008 and 2009 had 33 items, and the 2011 mean is based on 32 items.
^ 2006 mean scores were adjusted because of higher item numbers.

GAP SCORE USAGE IN STUDENT KNOWLEDGE ASSESSMENT

To further emphasize the use of gap scores compared to raw percentage scores in assessing student performance, the following chart presents the knowledge measures over the past three years using the pre-post program means and the average (percentage) student correct scores along with the gap score index. Exhibit 26 demonstrates that while pre-post program means and average student percentage scores were substantially higher in 2008 and 2009, the gap score difference in 2011 was still higher. The use of gap score differences suggests that the 2011 students successfully mastered many of the knowledge constructs presented in the DoD STARBASE program.

Gap and Mean Scores on Pre-/Post-Knowledge Test 2008-2011
Exhibit 26

Program Year	Pre-Program Mean	Post-Program Mean	Average Student %	Gap Score
2008	20.62	26.23	79.5	+5.61
2009	21.15	26.62	80.7	+5.47
2011	15.77	21.53*	67.3*	+5.76

**The score and percentage is based on 32 items (item 11 was excluded from the total score).*

RETAINED ITEMS FROM PRIOR YEARS IN STUDENT KNOWLEDGE ASSESSMENT

Nine items were retained from the previous version of the student knowledge test. The following exhibit provides a correct response percentage for each of the last four years and a gap score difference between 2009 and 2011. A knowledge assessment did not occur in 2010 because the new curriculum was in the process of adoption and implementation. Most of the post-program percentages on correct responses were about the same (or near range) with a few exceptions.

The largest difference percentage gap between the two years was the item identifying "the scientific law behind wearing a seatbelt" which displayed a 12% decrease. However, two possible answer choices in the response to this question were modified from the pilot test versions in 2007-2009. The new curriculum still applies much of the content for this knowledge area as well as the application and utilization of the basic concepts of the laws of motion.

Post-Program Percentage Correct Responses for Recurrent Knowledge Items (2007-2011)
Exhibit 27

Year	2007	2008	2009	2011	
Post-Program Knowledge	% Correct	% Correct	% Correct	% Correct	Gap Score (2011-2009)
The air is composed mostly of what element?	68	68	68	76	+8
Which of the following best shows the alignment of horizontal objects?	New item	69	68	73	+5
In what state of matter do molecules have the least amount of energy or motion?	70	70	73	74	+1
If you launched two rockets, one with a mass of 50 grams and one with a mass of 100 grams, using the same amount of force, which rocket would go highest?	87	87	86	86	0
How thick is Earth's atmosphere?	79	75	78	76	-2
If the diameter of the circle shown below is 10 meters, what is the radius?	New item	59	67	64	-3
One reason an airplane is able to gain lift is because the air moving across the top of the wing	53	55	59	54	-5
Air presses down 14.7 pounds on every inch of our bodies. The reason we don't feel this is	77	76	76	70	-6
What scientific law is operating, that makes it important to wear a seat belt?	74	73	76	64	-12

GENDER DIFFERENCES ON STUDENT KNOWLEDGE ASSESSMENT

Over the past several years, from 2004 through 2009, female student knowledge assessment gap scores were higher than the male students with differences ranging from +.17 in 2004 to +.72 in 2007. This year, the male student knowledge assessment gap score was higher by +.14, see Exhibit 28.

Pre/Post Knowledge Test 2011 Mean Scores by Gender
Exhibit 28

	Sample Size	Pre-Program Score*	Post-Program Score*	Individual Gap Score
Male	624	16.11	21.94	+5.83
Female	617	15.43	21.12	+5.69

**Male and female means are significantly different.*
Note: Includes all cases with no more than three missing survey responses.

In 2011, male students achieved their highest pre-post mean gap increase in the knowledge test over the past seven years at +5.83 as compared to the female students at +5.69, as seen in Exhibit 29. The female student gap score was below their gap average over that same time period.

Gender Gap Score Difference (2004-2011) Knowledge Test Scores
Exhibit 29

Gender	2004	2005	2006^	2007	2008	2009	2011
Male	+5.08	+5.33	+5.6*	+5.09	+5.37	+5.19	+5.83
Female	+5.25	+5.64	+6.1*	+5.81	+5.80	+5.74	+5.69
Difference	+.17	+.31	+.50	+.72	+.43	+.55	-.14

Note: Means for 2004 through 2007 are based on 30 items. The tests for 2008 and 2009 had 33 items, and the 2011 mean is based on 32 items.
^2006 scores were adjusted because of higher item numbers.

LENGTH OF OPERATION AND KNOWLEDGE TEST PERFORMANCE

Past assessments of a DoD STARBASE location's length of operation and student performance displayed a number of differences. The questions that relate to the influence of the length of operation were of interest because of the major restructuring of the core curriculum for all locations over the past two years from the past curriculum that was in place for more than a decade.

Three site classifications were constructed to assess performance differences:

- Mature – Those locations that started operation between 1991 and 1997.
- Established – Those locations that started operations between 1998 and 2001.
- New – Those locations that started operations between 2002 to the present.

The following exhibit indicates that the "established" group attained the highest pre-program score and the lowest gap score, while the "newest" group provided the lowest score for both pre- and post-program scores. The "mature" group displayed the higher performance differences with the highest post-program and largest individual gap score. In previous years, the results were inversed: the "new" group had the higher gap scores, and the "mature" group had the lowest.

Knowledge Means by Length of Operation
Exhibit 30

	Sample Size	Pre-Program Score	Post-Program Score	Individual Gap
Mature	506	15.80	21.62	5.82
Established	414	15.97	21.38	5.41
New	373	15.26	21.00	5.74

Note: The knowledge score means are not significantly different across length of operation.

Analysis was conducted to see if there were differences across locations of different maturity on post-program knowledge items that would suggest differences in content delivery, emphasis, and instructional applications. However, while there were significant differences, there were more similarities evident across the items, see Exhibit 31. There did not appear to be a constant performance trend demonstrated by these indicators.

Knowledge Item Variation Across Locations of Different Operational Maturity*
Exhibit 31

Knowledge Items
• Which of the following is an example of a compound molecule?
• Which pie chart represents the correct composition of air?
• Air presses down 14.7 pounds on every inch of our bodies. Why don't we feel this pressure?
• Based on Bernoulli's principle, what happens when air or water is forced between two objects?
• Which of the following has properties similar to the properties of air?
• Which of the following is an example of chemical change?
• What is the volume of the above container?
• How thick is the Earth's atmosphere?
• An engineer is testing how well three different towels absorb liquids over three trials. For the three trials, Towel A, B, C, absorbed...
Select the graph that correctly represents the results of the experiment.

** Mean values of percent correct responses to items by group were omitted for simplicity and are available upon request.*

HIGH VERSUS LOW STUDENT PERFORMANCE ON KNOWLEDGE TEST

Students enter DoD STARBASE with different skills, abilities, and basic understanding of the concept areas. Two key questions for DoD STARBASE developers and practitioners relate to what differentiates the high and low performers and whether or not the program has a variant impact on their performance at the end of the experience.

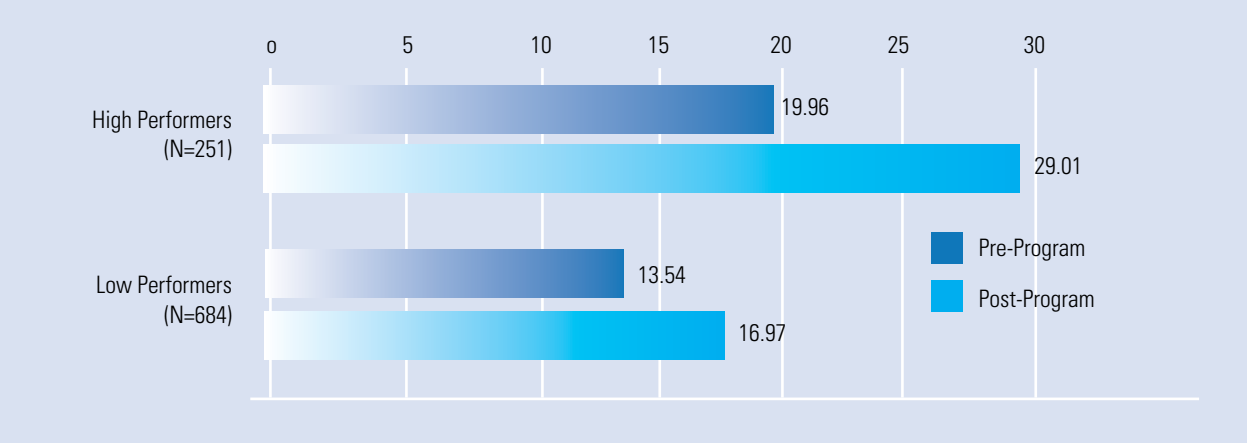
The criteria for identifying high and low student scores was to take one standard deviation plus or minus from the total post-program mean of 21.53; thus, those with scores equal to or less than 16 were designated "lower performers," and those with scores greater or equal to 27 were designated "high performers." These markers assigned 42% of the total sample as "high performers."

Differences were then assessed on the improvement of the two groupings from the pre-program to the post-program performance. There was not much improvement for the "low performers" from the pre-to-post experiences where the average gap score was 3.4 points as compared to the "high performers" whose gap scores reached 9 points, as seen in Exhibit 32. The same results were obtained for the "low performers" in the attitudinal assessment results, but they were not as dramatic with a gap attitudinal difference of 5.54 for the "lower performers" and 5.87 for the "high performers."

Military branch affiliation of the students also displayed some highly variant differences in the high and low performance group. The Air Force Reserve and the National Guard had larger sample representation in the low performance group than the other military branches, while the Navy, Marines, and Air Force had higher sample rates in the high performance group. There were a larger number of female students represented in the lower performance group than male students (53.5% female and 44.8% male), and more male students made up the high performers group with 57%.

The overall results were similar to the previous year's assessment on high-low performers. The high performance group attained a gap score of 9.05 compared to 3.43 for the low performing group, which suggests that the DoD STARBASE program has a greater effect on the high performers and less of an impact on the lower performers. While low performers still improved, the change was not as dramatic.

High Versus Low Performers on Knowledge Test*
Exhibit 32



** The pre- and post-program scores did not include item 11.*

STUDENT ATTITUDINAL RESULTS

Overall, the students who attend DoD STARBASE are both eager to participate in the program and have positive attitudes about their future and new experiences. At the end of the program, they gain more favorable attitudes about DoD STARBASE, the military, learning, and trying new things.

For the pre-program assessment, the students arrived with positive attitudes. The pre-program mean score of 5.77 on a seven-point rating scale suggests that students have high expectations of the program and its potential impact on them. At the conclusion of the program, an average overall mean score of 5.93 indicated that the program met the expectations of the students.

PRE/POST OPINION MEANS

The 2011 averages across all the attitudinal items were similar to 2009 results, although scores indicated slightly lower average mean scores both in the pre- and the post-assessments, see Exhibit 33. The average mean score for the post-assessment was 5.93 and was significantly higher than the 5.77 mean rating at the pre-program level. The attitudinal items have not changed with the new curriculum implementation; however, there were slightly smaller increases in the attitudinal items from pre- to post. New items related to the developing curriculum will be introduced to assess curriculum changes on the 2012 attitudinal assessment.

Pre- and Post-Program Opinion Means
Exhibit 33

	2009 Mean*	2009 Std. Deviation	2011 Mean*	2011 Std. Deviation
Pre-Program Survey	5.80	0.66	5.77	0.66
Post-Program Survey	6.00	0.65	5.93	0.71

** Pre- and post-program means are significantly different.*
For the survey average, items 21 and 24 were reverse-scored before the average was calculated.

The following exhibit rank orders the items on the post-program means from most favorable to less favorable based on the 2011 results. Bolded items indicate that the items are significantly different from pre-to-post assessment. While not all items are significantly different, the majority displayed favorable increases between pre-and-post assessments. The top three rated items; *"I think I can graduate from high school," "STARBASE Instructors are kind and helpful,"* and *"you can learn a lot by trying things;"* were also the same top three in 2009. Over the years, these same items have consistently obtained top rankings in the attitudinal assessment.

Overall, the student responses indicated that they are eager to participate in the DoD STARBASE program, have positive attitudes about their future, and are open to new experiences. Results indicating more positive perceptions about the military, learning, trying new things, and the DoD STARBASE program all demonstrate more favorable levels of attitudinal increases.

Pre/Post Ranking and Mean Scores of Student Attitudinal Responses
Exhibit 34

Pre-Program N=1,485		Attitudinal Items	Post-Program N=1,459	
Mean	Rank		Mean	Rank
6.51	1	I think I can graduate from high school.	6.55	1
6.21	3	STARBASE Instructors are kind and helpful.	6.47	2
6.35	2	You can learn a lot by trying things.	6.40	3
Post Only	Post Only	At STARBASE, I learned a lot of things that I can use.	6.36	4
6.12	6	Military people do lots of different things.	6.29	5
Post Only	Post Only	I am enjoying coming to a military base.	6.24	6
6.19	4/5	I like to make new things.	6.20	7
6.19	4/5	I think about what I want to be when I grow up.	6.17	8
6.11	7	You can have fun working in a group.	6.05	9
Post Only	Post Only	I would tell my friends to come to STARBASE.	5.92	10/11
5.99	8	I like to think of new ways to use things.	5.92	10/11
5.80	9	You can accomplish a lot in a group.	5.88	12
5.68	12	I can make my dreams come true.	5.83	13
5.67	13	Learning can be fun.	5.82	14
5.74	11	I set goals for myself.	5.78	15
5.60	15	I like science.	5.75	16
5.78	10	I am good at following directions.	5.73	17
5.62	14	I make good decisions.	5.72	18
5.21	18	Military bases are fun.	5.61	19
5.30	16	I am good at science.	5.56	20
5.27	17	Learning is easy for me.	5.47	21
5.19	19	I am good at math.	5.40	22
5.14	20	The military is a good place to work.	5.37	23
4.94	21	I like math.	5.03	24
Post Only	Post Only	**STARBASE is boring.	1.82	25/26
2.14	22	**I do not think STARBASE will help me do better in school.	1.82	25/26

*** Note that the final two items are phrased in an unfavorable context for control purposes.*

A FIVE-YEAR COMPARISON ON POST-PROGRAM ATTITUDES

The attitudinal assessment instrument did not undergo the changes the knowledge test experienced this year, so the trends and changes in rankings and assessment evident in these results may have more meaning with regard to the DoD STARBASE experience. The following exhibit displays rank order of the top eight post-program attitudinal items. These items focus on the military, the student's future, and attitudes about experiencing new things. These ratings over the past five years are exceptionally high on a seven-point scale.

Highest Ranked Post-Program Attitudes (2006-2011)
Exhibit 35

	2006		2007*		2008		2009		2011	
Attitudinal Items	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	
I think I can graduate from high school.	2	6.53	1	6.53	3	6.54	3	6.50	1	6.55
STARBASE instructors are kind and helpful.	1	6.61	2	6.51	1	6.61	1	6.57	2	6.47
You can learn a lot by trying things.	3/4	6.51	3	6.47	4	6.51	2	6.51	3	6.40
At STARBASE, I learned a lot of things that I can use. (post only)	3/4	6.51	4	6.46	2	6.55	4	6.49	4	6.36
Military people do lots of different things.	7	6.26	8/9	6.23	7	6.28	7	6.24	5	6.29
I am enjoying coming to a military base. (post only)	6	6.28	8/9	6.23	6	6.31	6	6.28	6	6.24
I like to make new things.	8	6.24	7	6.25	8	6.27	8	6.20	7	6.20
I think about what I want to be when I grow up.	5	6.36	5	6.39	5	6.36	5	6.36	8	6.17

** The item ranked sixth in 2007 was not among the top ranked items in the other years, and thus is not included for comparison.*

OVERALL COMPOSITE PRE/POST ATTITUDINAL MEANS (2004-2011)

Over the past seven years, the overall composite attitudinal means have remained relatively stable and positive. The increase from pre- to post-assessment this year was somewhat smaller than previous years at a gap shift of +.16 as compared to last year at +.20 and the largest in 2007 at +.25.

2004 – 2011 Composite Pre/Post Opinion Means
Exhibit 36

Composite Attitudinal Mean Scores	2004	2005	2006	2007	2008	2009	2011
Pre-Program Survey	5.78	5.83	5.81	5.75	5.84	5.80	5.77
Post-Program Survey	5.97	6.06	6.05	6.00	6.06	6.00	5.93
Score Shift +/-	+.19	+.23	+.24	+.25	+.22	+.20	+.16

POST-PROGRAM ATTITUDINAL MEAN SCORES (2004-2011)

The following exhibit provides a seven-year display on all 26 items. The largest favorable increase from 2009 to this year focused on the military items with shift positive increases of +.17 for *"the military is a good place to work"* and a + .12 positive shift for *"military bases are fun."* Those items that shifted downward but still maintained positive ratings were *"I can make my dreams come true"* (-.32); *"I like math"* (-.26); *"I would tell my friends to come to STARBASE"* (-.20); *"I set goals for myself"* (-.20); and *"STARBASE is boring"* (+.20). There were more downward shifts this year as compared to last year's assessment across the 26 items.

Post-Program Attitudinal Mean Scores (2004-2011)

Exhibit 37

Post-Program Attitudes	2004 Mean	2005 Mean	2006 Mean	2007 Mean	2008 Mean	2009 Mean	2011 Mean
I like math.	5.33	5.39	5.25	5.16	5.32	5.29	5.03
I am good at math.	5.27	5.35	5.28	5.36	5.36	5.35	5.40
I like science.	5.67	5.78	5.72	5.65	5.76	5.79	5.75
I am good at science.	5.43	5.50	5.53	5.42	5.50	5.50	5.56
I am good at following directions.	5.70	5.79	5.82	5.74	5.78	5.76	5.73
Learning is easy for me.	5.55	5.54	5.48	5.49	5.48	5.51	5.47
Learning can be fun.	6.15	6.12	6.03	5.93	6.02	6.00	5.82
You can learn a lot by trying things out.	6.51	6.57	6.51	6.47	6.51	6.51	6.40
I think I can graduate from high school.	6.47	6.54	6.53	6.53	6.54	6.50	6.55
Military people do lots of different things.	6.29	6.30	6.26	6.23	6.28	6.24	6.29
I set goals for myself.	6.07	6.07	6.14	6.09	6.05	5.98	5.78
I make good decisions.	5.73	5.79	5.86	5.72	5.83	5.73	5.72
STARBASE instructors are kind and helpful.	6.54	6.54	6.61	6.51	6.61	6.57	6.47
I can make my dreams come true.	6.17	6.23	6.21	6.28	6.23	6.15	5.83
You can accomplish a lot in a group.	6.29	6.10	6.11	5.98	6.05	5.99	5.88
You can have fun working in a group.	6.34	6.24	6.20	6.11	6.19	6.18	6.05
I like to make new things.	6.29	6.36	6.24	6.25	6.27	6.20	6.20
I think about what I want to be when I grow up.	6.38	6.37	6.36	6.39	6.36	6.36	6.17
The military is a good place to work.	5.40	5.40	5.38	5.25	5.34	5.20	5.37
Military bases are fun.	6.02	5.93	5.94	5.84	5.93	5.49	5.61
I do not think STARBASE will help me do better in school.* (post only)	N/A	1.97	1.89	1.97	1.94	1.86	1.82
I like to think of new ways to use things.	6.17	6.13	6.00	6.06	6.10	6.02	5.92
At STARBASE, I learned a lot of things that I can use. (post only)	6.53	6.53	6.51	6.46	6.55	6.49	6.36
STARBASE is boring.* (post only)	1.56	1.64	1.55	1.68	1.59	1.62	1.82
I would tell my friends to come to STARBASE. (post only)	6.21	6.15	6.19	6.07	6.23	6.12	5.92
I am enjoying coming to a military base. (post only)	6.35	6.30	6.28	6.23	6.31	6.28	6.24

** Due to the non-favorable wording, higher mean values reflect lower endorsement levels when reverse scoring is applied. These items are designed for reliability in rating usage and understanding of the rating scale.*

SHIFTS IN STUDENT ATTITUDES

Attitudinal shifts from the pre-to-post assessment were generally positive. The largest positive increases related to military items, science, math, and learning. The following exhibit illustrates the rank ordering based on mean pre-to-post shifts. The largest positive shift by the students was a +.40 mean increase on *"military bases are fun."* Of the top 10 items, three relate to positive perceptions about the military. Science, math, and learning follow in the highest shift rankings.

The Top 10 Ranking of Attitudinal Shifts from Pre- to Post-Program 2011
Exhibit 38

Shift Ranking	Attitudinal Item	Mean Shift
1	Military bases are fun.	+0.40
2/3	STARBASE Instructors are kind and helpful.	+0.26
2/3	I am good at science.	+0.26
4	The military is a good place to work.	+0.23
5	I am good at math.	+0.21
6	Learning is easy for me.	+0.20
7	Military people do lots of different things.	+0.17
8/9/10	I can make my dreams come true.	+0.15
8/9/10	Learning can be fun.	+0.15
8/9/10	I like science.	+0.15

MATH AND SCIENCE ATTITUDINAL RATINGS

The new curriculum focuses on STEM-related activities and content. The following two exhibits compare math and science pre- to post-assessment and the gap scores for this year's assessment and post-program attitudinal mean scores over the past seven years. The pre-post assessment indicates that students feel more positive about math and science at the completion of the DoD STARBASE program. *"I am good at science"* had the largest shift of the four items in the math/science assessment with an increase of +.26 from the pre-to-post gap shift.

The comparison of attitudinal means over the past seven years of post tests on these same items illustrated slightly higher ratings in *"being good at math and science"* in 2011 than in 2009 but slightly lower for liking math and science. The shifts in those items referring to being good at science and math were higher than the shifts in liking the topics in 2011 from 2009.

2011 Math and Science Attitudinal Mean Scores
Exhibit 39

Math and Science Attitudinal Items	Pre-Program Mean	Post-Program Mean	Gap Score
I like science.	5.60	5.75	+0.15
I am good at science.	5.30	5.56	+0.26
I am good at math.	5.19	5.40	+0.21
I like math.	4.94	5.03	+0.09

Post-Program Attitudinal Mean Scores (2004-2011)
Exhibit 40

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

MILITARY-RELATED ATTITUDES

Shifts in Military-Related Attitudes

Four items in the attitudinal assessment relate to student perceptions about the military. All four items indicate positive attitudinal shifts from the pre-to-post assessment and that the program has a positive effect in relation to those perceptions (see Exhibit 41). One of the items was only administered at program completion but had a high overall ranking.

Attitudinal Shifts on Military-Related Items 2006-2011
Exhibit 41

Military Attitudinal Items	2006 Shift	Rank	2007 Shift	Rank	2008 Shift	Rank	2009 Shift	Rank	2011 Shift	Rank*
Military bases are fun.	+.43	2	+.46	1	+.41	1	+.40	1	+.40	19
I am enjoying coming to a military base.	+.31	4	+.37	2	+.34	2	Post Only	6	Post Only	6
The military base is a good place to work.	+.24	6	+.32	5	+.18	6/7/8/9	+.19	5	+.23	23
Military people do lots of different things.	+.20	8	+.21	9	+.15	12	+.13	10	+.17	5

** 2011 rank based on post-program item mean.*

COMPARISON OF HIGH AND LOW MILITARY ATTITUDE GROUPINGS

Difference between those students who had high ratings on the previous items and those who had lower ratings were grouped into the dichotomy of *"high military attitude"* and *"low military attitude."* Those results from the *"high military attitude"* grouping were calculated on scores of 20-21 on these items: bases are fun, a military base is a good place to work, and military people do lots of different things. The *"low military attitude"* group was comprised of those who had a total of 13 or less.

There was no significant difference on the knowledge test scores between the *"high military attitude"* groups and the *"low military attitude"* groups (see Exhibit 42). However, those in the *"high military attitude"* group did have significantly higher attitudes across all attitudinal items (see Exhibit 43). There are a few items that display large gap differences between the two and in favor of the *"high"* group.

Overall, the *"high military attitude"* respondents have higher positive attitudes regarding math, science, working in groups, experiencing new things, and willingness to recommend DoD STARBASE to others. In short, the *"high military attitude"* group had a high positive attitude on all elements of the program, themselves, and others. The comparison revealed a highly differentiated grouping. In addition, the separation of these two groupings on the military attitudinal dimension also captured a sample size that was more than double for the *"highs"* than the *"lows,"* 361 to 150 respectively in the knowledge test analysis and 428 to 170 in the attitudinal test.

Pre/Post Knowledge Means for High and Low Military Attitudes
Exhibit 42

Military Attitudes	Sample Size	Pre-Program Mean*	Std. Deviation	Post-Program Mean*	Std. Deviation
High Military Attitudes	361	15.38	4.54	20.92	5.46
Low Military Attitudes	150	15.57	4.16	21.10	5.28

**High vs. low military attitudes knowledge mean scores are not significantly different.*

TEAM BUILDING OBJECTIVES

Team building objectives are an integral part of the DoD STARBASE instructional modality. A comparison of the gap differences between the means for the *"high military attitude"* group and the *"low military attitude"* group falls into the top five rankings with positive gap score differences of 1.34 and 1.16 for the *"high"* grouping.

Pre/Post Knowledge Means for High and Low Military Attitudes
Exhibit 43

Attitude Item	Low Military Attitudes (n = 428)	High Military Attitudes (n = 170)	+/- Gap
Post-Program Attitudes	**5.16**	**6.37**	**1.21**
I am enjoying coming to a military base	4.99	6.85	1.86
I would tell my friends to come to STARBASE	5.02	6.38	1.36
You can accomplish a lot in a group	5.00	6.34	1.34
I like science	4.83	6.10	1.27
You can have fun working in a group	5.30	6.46	1.16
I like math	4.41	5.48	1.07
I like to think of new ways to use things	5.30	6.37	1.07
I like to make new things	5.54	6.59	1.05
I am good at science	4.91	5.94	1.03
Learning can be fun	5.21	6.24	1.03
I set goals for myself	5.24	6.17	0.93
At STARBASE, I learned a lot of things I can use	5.82	6.72	0.90
STARBASE instructors are kind and helpful	5.88	6.77	0.89
I think about what I want to be when I grow up	5.62	6.48	0.86
I can make my dreams come true	5.43	6.21	0.78
Learning is easy for me	5.05	5.82	0.77
You can learn a lot by trying things	5.99	6.61	0.62
I make good decisions	5.35	5.96	0.61
I am good at math	5.04	5.64	0.60
I am good at following directions	5.44	5.98	0.54
I think I can graduate from high school	6.20	6.74	0.54
STARBASE is boring^	2.50	1.53	-0.97
I do not think STARBASE will help me do better in school^	2.38	1.53	-0.85

^ These two items are negatively worded; therefore, a smaller average reflects a more positive attitude.

GENDER COMPARISONS AND ATTITUDINAL DIFFERENCES

The differences between male and female students on attitudinal responses are displayed on specific attitudinal items this year and illustrated almost no difference on overall composite attitudinal mean scores. In the past, female students revealed higher overall mean scores than male students and showed the greatest increases in areas that were not traditionally considered of their interest. The 2011 results on specific items are similar to past years as the following exhibits demonstrate.

The overall composite attitudinal mean between the male and female students on pre- and post-program ratings are very similar with gap scores with males at +.18 and females at +.15. The female students had slightly higher scores at program entry and at program conclusion, and the male students had a slightly larger performance gap score (Exhibit 44).

Gender Differences on Pre/Post Attitudes
Exhibit 44

	Sample Size	Pre-Program Mean*	Post-Program Mean*	Performance Gap Score
Male	688	5.72	5.90	+.18
Female	682	5.79	5.94	+.15

* Male and female mean differences are not significantly different.

Pre-post analysis indicated that female students were significantly more positive on six items (shown in bold type in Exhibit 45), while male students were more positive on one item. The table lists the top 10 ranked items for the males on the right with a gap difference score between the two on the far right. There were three items added that were not ranked in the top 10 for the females. The results are very similar to last year's results. Female students express more positive responses to interpersonal and pro-social items, while the male students gave more positive responses on the military, math, and science. The greatest gain for both genders was *"military bases are fun"* with an increase by the males at +.38 and +.43 for the females. For a complete exhibit on all items on pre- and post-attitudes, including gap scores, see the appendix.

Gender Differences on Pre/Post Attitudes
Exhibit 45

Attitude Item	Female Rank	Female Mean	Male Rank	Male Mean	*Gap Difference
Favoring Female					
I think I can graduate from High School.	**1**	**6.62**	**1**	**6.46**	**.16**
STARBASE Instructors are kind and helpful.	2	6.51	2	6.43	.08
You can learn a lot by trying things.	**3**	**6.45**	**3**	**6.35**	**.10**
At STARBASE, I learned a lot of things that I can use	4	6.38	4	6.34	.04
I like to make new things.	6	6.24	7	6.14	.10
I think about what I want to be when I grow up.	7	6.22	8	6.11	.11
You can have fun working in a group.	9	6.09	9	6.01	.08
I am good at following directions.	**10 (tie)**	**5.93**	**20**	**5.54**	**.39**
Learning can be fun	**10 (tie)**	**5.93**	**16**	**5.69**	**.24**
I can make my dreams come true	**13**	**5.91**	**15**	**5.73**	**.18**
I make good decisions	**16**	**5.86**	**19**	**5.57**	**.29**
Favoring Male					
Military people do lots of different things.	5	6.25	5	6.32	.07
I am enjoying coming to a military base.	8	6.19	6	6.28	.09
I am good at math	**23**	**5.28**	**21**	**5.51**	**.23**

*Bolded items indicate statistically significant differences.

PRIOR EXPERIENCE WITH THE MILITARY

Having prior experiences with the military had an impact on pre- and post-program perception. Students who had prior military experiences demonstrated more positive attitudes both at entry and at the conclusion of the program as compared to those with no prior experiences. Six pre-program responses and four responses at the program's conclusion were significantly different for the students who had prior military experiences, as seen in Exhibit 46.

Items Illustrating Significant Differences in Attitudes
Based on Prior Military Contact*
Exhibit 46

Pre-Program	Post-Program
I think I can graduate from High School.	I think I can graduate from high school.
Learning is easy for me.	I am enjoying coming to a military base. (Post only)
Military people do lots of different things	Military bases are fun.
I can make my dreams come true.	The Military is a good place to work.
I do not think STARBASE will help me do better in school.	
The military is a good place to work.	

* Mean values of item responses by prior military contact group are omitted for simplicity and are available upon request.

GENDER DIFFERENCES AND PRIOR EXPERIENCES WITH MILITARY PERSONNEL

At the pre-program level, gender made a difference for those who had prior experience with the military but had no difference at the post-program assessment. On the attitudinal assessment (see Exhibit 47), the composite score based on prior military experience demonstrates no significant difference, although the post-program composite score on the knowledge assessment for male students was significantly higher (see Exhibit 48).

Prior Experience with the Military Attitudinal Differences by Gender
Exhibit 47

	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	
Male	5.64	5.84	5.76	5.94	+.10
Female	5.73	5.89	5.84	5.98	+.09

Note: Female pre-program means are significantly different from each other.
Male pre-program means are significantly different from each other.

Prior Experience with the Military Knowledge Differences by Gender
Exhibit 48

	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	
Male	14.89	20.91	16.56	22.33	+1.42
Female	15.00	20.40	15.68	21.37	+0.97

COMPARISON BASED ON PRIOR KNOWLEDGE OF DOD STARBASE

Students who had heard about DoD STARBASE before coming to the program tended to have more positive attitudes about themselves and the program than those who had no knowledge prior to attendance.

COMPARING ATTITUDES OF STUDENTS WHO HAD PRIOR KNOWLEDGE OF DOD STARBASE AND THOSE WHO DID NOT

The majority of students had prior knowledge of DoD STARBASE before they arrived, which might indicate that other students, teachers, and participants had talked about the program. After a location has been in operation for more than a few years, most students know that it is their turn to attend when they reach the fifth grade. Those students with prior knowledge also tended to have more positive attitudes than those who had not heard about the program before attending.

ATTITUDINAL DIFFERENCES AND LENGTH OF LOCATION OPERATION

There were more similarities than differences for attitudinal items among those locations that have been in operation for different lengths of time (i.e., new locations compared to more mature locations as previously defined). The length of time a location has been in operation does not seem to produce a more positive attitudinal profile. While there were a number of post-program attitudinal items that were revealed as significant at some of the locations of different operational ages, no importance could be correlated to length of operation.

STUDENT AGE AND GRADE USER IMPACT ON ATTITUDES/TEST SCORES

Correlation analysis was conducted on student age and grade in school with items in the attitudinal survey, composite results, and performance test assessment. As seen in the following exhibit, results revealed that the age of the student significantly aligned with the desire to learn and the feeling that learning is fun. The correlation can be drawn that as the student gets older positive responses to these items tend to decline.

Grade level in school displayed significant correlations in both negative and positive directions. For example, on the positive side, as grade in school increases, students tend to have more contact with military personnel, respond favorably to math, and score better on the curriculum content items. On the other hand, it is also evident that as grade in school increases, responses to the pro-social items tended to decrease. These results may be of particular interest to practitioners and location personnel.

Relationships of Age and Grade Post-Program Responses
Exhibit 49

	Correlation	
	Grade	Age
I have met military people before coming to STARBASE.	11**	
I heard about STARBASE before I knew I was coming here.	-.09**	
I know someone who went through STARBASE before me.	-.09**	
I like math.	.07**	
Learning can be fun.		-.06*
STARBASE instructors are kind and helpful.	-.11**	
I do not think STARBASE will help me do better in school.	.07*	
At STARBASE, I learned a lot of things that I can use.	-.10**	-.06*
STARBASE is boring.	.12**	
I would tell my friends to come to STARBASE.	-.11**	
Post-program score	.11**	

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

VARIANCES AND DIFFERENCES ATTRIBUTABLE TO LOCATION

Analysis of variances and differences as they are attributable to each location is an area of analysis that needs more attention in practice, in compliance situations, and in the assessment process. The analysis strongly supports this focus in that all but one of the attitude items and the knowledge test scores demonstrated statistically significant variation between one or more of the locations. While all programs received positive responses from teachers and students, each of the locations placed emphasis on different aspects of the curriculum and the program.

The DoD STARBASE locations demonstrate a wide variance and range of knowledge scores. The largest pre-post program gap score by a location was +12.96 (see Exhibit 50). For the attitudinal variances, one location had a decrease in attitudinal means of -.19 (see Exhibit 51). All items but one, *"learning is easy for me,"* were significantly different across the locations, which demonstrates the high variability in both knowledge performance and student perceptions about themselves, the DoD STARBASE program, and their environment.

Range of Knowledge Scores Across Locations
Exhibit 50

	Pre-Test Score	Post-Test Score	Individual Gaps
Minimum	10.00	15.61	2.17
Maximum	20.89	29.62	12.96

Range of Attitudinal Means Across Locations
Exhibit 51

	Pre-Survey Mean	Post-Survey Mean	Individual Gaps
Minimum	5.21	5.32	-0.19
Maximum	6.13	6.27	0.47

VARIANCES AND DIFFERENCES ATTRIBUTABLE TO REGION

For analytical purposes, the locations are aggregated into five regions: East, Southeast, Midwest, South, and West. Thirteen of the attitudinal items demonstrated statistically significant differences across the regions. The Southeast region, with the largest number of DoD STARBASE locations, had the highest post-program knowledge score rating. For a full set and distribution of all attitudinal items by region, see the appendix.

ATTITUDINAL COMPARISONS BY MILITARY BRANCH SPONSORSHIP

There were eight items that were significantly different across military branch affiliations in the attitudinal assessment. While student attitudes are positive across all items, students differ in their views of the military and the impact of DoD STARBASE across the military branch sponsored locations. The differences, especially in the knowledge test, can potentially be attributed to curriculum emphasis and content coverage. The post-program scores on the knowledge test for the Air Force are slightly higher than the other branches. Exhibit 52 provides a ranking of the post-program attitudinal items across the military branch locations and the variances in those rankings for each item.

Ranking of Student Post-Program Responses by Branch
Exhibit 52

	Air Force	Air Force Reserves	Marines	National Guard	Navy
I am enjoying coming to a military base.	9	1	1	7	5
At STARBASE, I learned a lot of things that I can use.	11	2	3	4	3
Learning can be fun.	13	15	22	13	12
Military bases are fun.	20	12	21	19	19
I would tell my friends to come to STARBASE.	21	7	12	10	11
The military is a good place to work.	22	18	23	23	23
I like math.	24	24	24	24	24
STARBASE is boring.	25	26	25	25	26
Post-test knowledge score*	**22.99**	**20.32**	**22.93**	**20.81**	**21.37**

*Values are post-program test scores with less than 4 missing items.

CLASS SIZE COMPARISONS ON KNOWLEDGE AND ATTITUDINAL ASSESSMENT

Class size comparison is always of interest and, for purposes of parsimony, this analysis used a three-level grouping of classes: classes with student numbers less than 20, classes of 20 to 26 students, and classes of 27 students or more. The sample for each grouping was of a size that was well-represented.

Size of class is an important variable in DoD STARBASE since the DoDI limits the size of a class, and almost all locations use size as a requirement for program entry. There are occasions when exceptions must be requested and recorded to OASD/RA, such as when classes have a student or two added after scheduling.

The estimates of class size and the grouping designation were made using the number of post-program assessments for each class at each DoD STARBASE location. This provided the basis for estimating the cut-off points for the three broad designators for class size. The following exhibit shows that students in the smaller classes tend to have slightly less positive attitudes and do not perform as well on the knowledge tests as students from larger classes. While the class size constructs were arbitrary and the demarcations were largely based on sample size considerations, the size factor had some effect on assessment instrument results, both knowledge and attitudinal. The appendix provides greater detail for each knowledge-based item by class size grouping.

Comparison of Post-Program Knowledge Scores and Attitudinal Means by Class Size
Exhibit 53

Assessment	Class Size = Less Than 20 (n = 384)	Class Size = 20 to 26 (n = 543)	Class Size = 27 or More (n = 601)
Knowledge Test	19.43	21.79	22.19
Attitudinal Survey	5.86	5.95	5.94

Note: The knowledge test scores are significantly different.

COMPARISON OF NATIVE AMERICAN STUDENTS ON KNOWLEDGE AND ATTITUDINAL ASSESSMENT

Three DoD STARBASE locations that serve predominantly Native American students were assessed and compared with the scores of the other locations for descriptive purposes only. The delivery systems and applications vary in degree as well as in emphasis, so comparative conclusions were not made.

The results in the knowledge tests indicate that the Native American students demonstrate improvement in program knowledge on a pre-post program assessment with a gap score of 4.22; however, the other DoD STARBASE locations illustrated gap scores at the 5.74 level. The differences in post-program means were 17.75 in the knowledge test for the Native American students and 21.57 for the remaining locations. The attitudinal means for both groupings at the pre-program level were similar, but the improvement for Native American students was small (gap of +.01) compared to the other locations (+.17). Exhibit 54 and Exhibit 55 indicate that Native American students scored lower in both pre- and post-program assessments and lower in attitudinal means. However, Native American students did demonstrate overall knowledge improvements.

Comparison of Native American vs. Other Knowledge Means
Exhibit 54

	Sample Size	Pre-Program Mean	Post-Program Mean*	Performance Difference
Native American Locations	77	13.53	17.75	+4.22
Remaining Locations	1,216	15.83	21.57	+5.74

*Native American means are significantly different.

Comparison of Native American vs. Other Attitudinal Means
Exhibit 55

	Sample Size	Pre-Program Mean	Post-Program Mean*	Performance Difference
Native American Locations	76	5.75	5.76	+.01
Remaining Locations	1,364	5.76	5.93	+.17

HISTORICAL TRENDS FOR NATIVE AMERICAN STUDENTS IN ASSESSMENTS (2007-2011)

The historical trends for Native American students on the knowledge and attitudinal assessments were fairly consistent for the years 2007 through 2009. The significant decrease in the knowledge test results in 2011 can be attributed to the changes in curriculum content and the difficulty of the test as it was shifted to an application-based instrument. The attitudinal responses in 2011 indicate a more positive pre-program perception as compared to the previous year, which yielded a more positive attitude at program entry.

Native American Averages by Year
Exhibit 56

	2007 (N=112)	2008 (N=91)	2009 (N=135)	2011 (N=77)
Knowledge Items				
Pre-Program Mean	18.48	18.43	19.16	13.53
Post-Program Mean	25.34	23.77	22.32	17.75
Attitudinal Items				
Pre-Program Mean	5.34	5.29	5.54	5.75
Post-Program Mean	5.88	5.64	5.85	5.76

*In the knowledge assessment, there are 32 items for 2011, 33 items for 2008 and 2009, and 30 items for 2007.

DRIVERS OF OPINION

"Drivers of Opinion" are a list of non-overlapping statistical predictors of target attitudes rank-ordered by their relative impact on the driver of the target attitude, see Exhibit 57. For example, if the condition in the list is present, it is very likely the target attitude will also be present. These lists can prioritize action items by DoD STARBASE personnel for improving target attitudes.

There are drivers that are repeated and can therefore have a broader impact on target attitudes. For example, "You can have fun working in a group" can be used to help students build work group relationships that potentially increase their positive attitudes toward learning, DoD STARBASE, and the military. The latter activities are cluster attributes.

Another related driver, "I am enjoying coming to a military base," refers to the exploration of activities and resources on the base that can expand the student's curiosity, enjoyment, and their attitudes about the military. This latter driver is rated as having the most potential for impacting four target attitudes. The remaining drivers impact target attitudes. All the drivers can indirectly influence the others.

Drivers of Key Target Attitudes Post Responses
Exhibit 57

Target Attitude	Drivers of Target Attitude	Adjusted R Square
At STARBASE, I learned a lot of things that I can use. Post respondents (n=1,222)	• STARBASE is boring.	.225
	• You can learn a lot by trying things.	.300
	• STARBASE Instructors are kind and helpful.	.348
	• I am enjoying coming to a military base.	.378
	• I like to think of new ways to use things.	.399
I would tell my friends to come to STARBASE. Post respondents (n=1,222)	• STARBASE is boring.	.291
	• I am enjoying coming to a military base.	.362
	• STARBASE instructors are kind and helpful.	.390
	• I like to think of new ways to use things.	.406
	• Learning is easy for me.	.413
	• I like science.	.416
I can make my dreams come true. (n=1,217)	• I think I can graduate from high school.	.112
	• I set goals for myself.	.164
	• You can accomplish a lot in a group.	.193
	• Learning is easy for me.	.214
	• I think about what I want to be when I grow up.	.231
	• I make good decisions.	.239
Military bases are fun. (n=1,192)	• I am enjoying coming to a military base.	.329
	• The military is a good place to work.	.438
	• STARBASE Instructors are kind and helpful.	.454
	• You can accomplish a lot in a group.	.461
	• I like to think of new ways to use things.	.465
Military people do lots of different things. (n=1,219)	• The military is a good place to work.	.084
	• I like science.	.118
	• You can accomplish a lot in a group.	.139
	• I am enjoying coming to a military base.	.151
	• I think about what I want to be when I grow up.	.162
Learning can be fun. (n=1,212)	• You can learn a lot by trying things.	.217
	• I like math.	.293
	• Learning is easy for me.	.330
	• STARBASE is boring.	.355
	• You can have fun working in a group.	.371
	• I am good at following directions.	.384

Note: 2011 post-program student attitudinal assessment.

TEACHER ASSESSMENT

OVERVIEW

Classroom teachers are a key participant group in the DoD STARBASE program. Their role in the program is multifaceted:

- They serve as critical observers of student behavior and performance before, during, and after the DoD STARBASE experience.
- They influence student expectations about the program experience.
- They link the program to parents, school administrators, and the community.
- They serve as monitors and facilitators of the curriculum.

Their role as agents in reinforcing the use of DoD STARBASE materials, methods, and curriculum applications has become an important objective of the DoD STARBASE program.

The following assessment captures their observations on student behavior and performance before, during, and after the DoD STARBASE experience. The teacher's role in influencing and reinforcing the program applications and methods back in the classroom; applying his or her own use of the materials; and referring his or her experiences to other teachers, parents, and administrators is well documented.

Teachers are provided opportunities to express their views and observations in survey form as well as in interviews with the assessment team. Their views about DoD STARBASE are often made more explicit by their continued re-enrollment of their classes in the program and continued desire to be in the front of the queue for next year's program. While the survey instrument documents the strong support for the program by the teachers, which has been historically consistently strong, it also captures the role that they play as advocates and promoters of the program within their school system and to their peers.

This is important in that teachers are long-term program participants and are in a position to report on downstream student results, linkages to other STEM activities, and then as referral agents to other programs that build on the experiences provided in DoD STARBASE. It is because of these attributes that the DoD strategy is to focus on the teacher and their diverse experiences and skills in the promotion of program objectives in STEM-related opportunities. The following assessment substantiates the importance of this critical role in program objectives.

ASSESSMENT APPROACH

As previously indicated, the key instrument in obtaining systematic classroom teacher input on the impact of the program on students, the school system, the curriculum, and their own behaviors is obtained in the DoD STARBASE Teacher Survey. This assessment is buttressed by data obtained through interview schedules during compliance visitations and the less structured informal feedback from instructors during the program year. Each DoD STARBASE location was requested to provide at least 10 completed teacher surveys online during the 2010-2011 program year to Vangent, Inc. A copy of the survey is available in the appendices of this report.

This year, more than 1,500 teachers responded, an average of 25+ per location (1,510 respondents from 59 locations). This was slightly lower than the 1,600+ responses collected last year but more than expected given the major changes in data collection requirements due to curriculum changes over the past two years.

The survey captures basic demographics on the teachers such as years of experience, grade level taught, military base familiarity/ experience, and number of years participating in the DoD STARBASE program. The survey also obtains teachers' personal views about the DoD STARBASE program as a whole, the curriculum, the impact on their views, and instructional modalities, as well as their own performance. The assessment focuses on the impact on the students, the school system, the curriculum, use of program materials, state

testing systems, and community awareness. These views and results are also compared to student views, collected in a separate student instrument, on many of these same dimensions. Given that this program has been operating for over two decades, several trends are highlighted where the data provides comparisons and key observations on changes in program performance.

OVERALL TRENDS

The teachers have consistently registered positive attitudes about the DoD STARBASE program, student performance, and themselves over the past several years. This reflects the reliability of the survey responses over each program year. Greater detail is provided on each topical area in the following analysis.

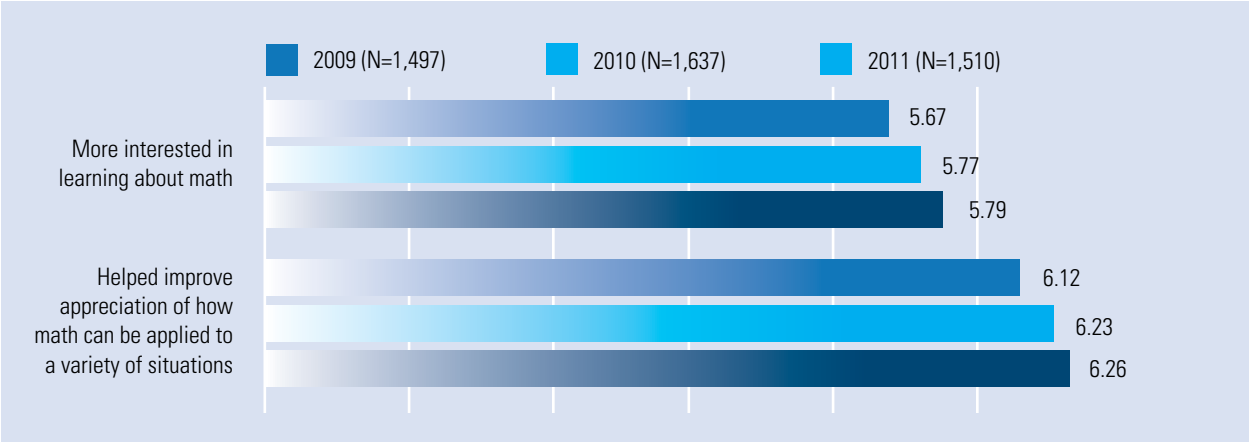
Teacher profiles are also very consistent with past years in that respondents are predominantly fifth-grade teachers with more than two years of experience and few had exposure to the military environment prior to their DoD STARBASE involvement. The analysis indicates that the more vested the teachers and the schools are in the program, as reflected in such ways as utilizing program materials in their class and referrals to other schools and administrators, the more favorable the teacher's attitudinal overall responses.

SELECTED HISTORICAL TRENDS AND CHANGES

Teachers have scored consistently high on most of the attitudinal dimensions of the survey, particularly on science and technology concepts, attitudes toward the military, military personnel, and program effectiveness.

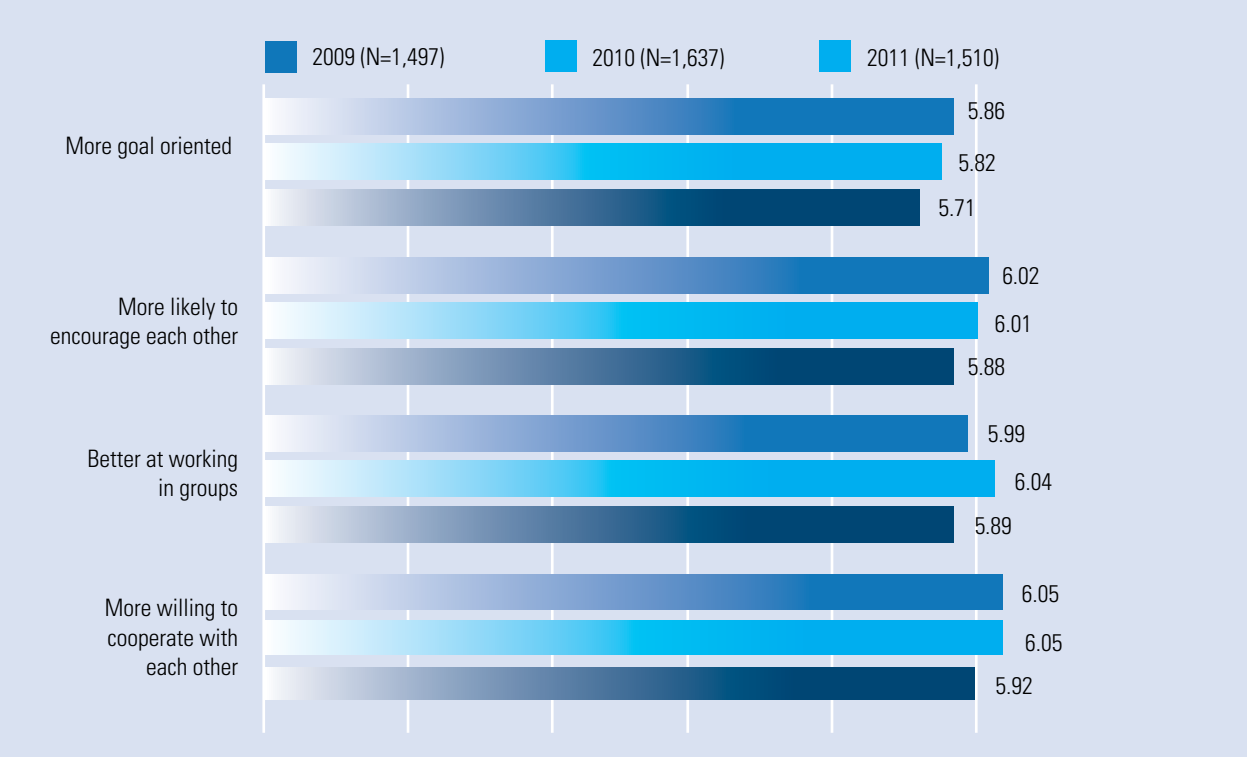
There was a positive shift from scores in 2009 in the teachers' perception on the increases in students' interest in math and an appreciation of how math could be applied (see Exhibit 58). This upward shift in student math attitudes, however, was offset by an attitudinal decrease in those constraints measuring citizenship and pro-social attitudes. Teachers rated the following constructs less favorably than in previous years: willingness by students to cooperate, working in groups, encouraging others, and being goal-oriented. These changes could reflect the program curriculum changes that focus more intensely on math, science, technology, and engineering. It is important to note that those lower scores are relative since they still remain significantly high on a seven-point scale (5.71-5.92 range).

Classroom Teacher's Perception on Math Items Over the Past Three Years (2009-2011)
Exhibit 58



These shifts over time show a significantly positive ratio on a seven-point scale. Not only do they substantiate the stated and desired STEM-related objectives, but they also promote a slight shift downward on other desirable program aspects, such as team-building, citizenship, and pro-social attitudes. The latter are not primary curriculum content objectives but are key behavioral program applications. The following chart shows shifts in citizenship and pro-social attitudes. Again here, note the high positive ratings in the 5.71-5.92 range.

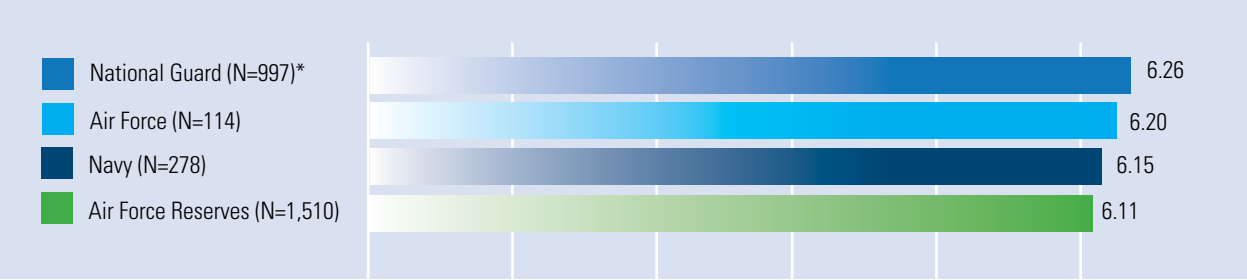
Classroom Teacher's Perception on Citizenship Items Over the Past Three Years (2009-2011)
Exhibit 59



MILITARY SERVICE BRANCH AND REGIONAL DIFFERENCES

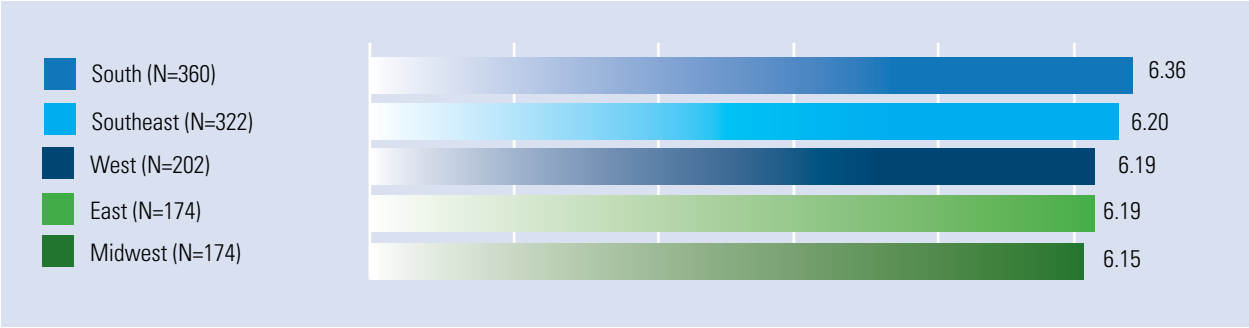
The National Guard hosts the majority of the DoD STARBASE locations and has representation in all five regions. Navy DoD STARBASE locations have similar regional representation but are fewer in number. Responses from four different military branches and five regions were compared (see Exhibits 60 and 61). The teacher responses were highest from the National Guard locations both in numbers (66%) of the total respondents (N=997) and in the favorable attitudinal ratings (6.26) across all items. The Southeastern region had the highest favorable teacher ratings (6.36). And, the Midwest had a lower rating than other regions but was still at a high 6.15 rating level. These overall positive ratings are both significant and very favorable toward the program.

Military Service Branch Overall Attitudinal Ratings
Exhibit 60



*Sample size was impacted by lack of location codes, identification of source, and small sample size (i.e. Marines).

Regional Representation Overall Attitudinal Ratings
Exhibit 61



There was a good distribution of teacher responses by region (174 responses 442 responses). Other than the Southeastern locations, the attitudinal scores were strongly clustered (6.15-6.20) and were high on the seven-point scale. This reflects consistency in similar attitudes across locations.

CLASSROOM TEACHER DEMOGRAPHICS

More than three-quarters of the 1,510 teachers surveyed are fifth-grade instructors (76.4%), which is the target grade for DoD STARBASE (see Exhibit 62).

Teacher Demographics (2009-2011)
Exhibit 62

	2009 (N=1,497)		2010 (N=1,637)		2011 (N=1,510)	
Response	Frequency	Percent	Frequency	Percent	Frequency	Percent
Grade Taught						
Grade 3	13	0.9%	5	0.3%	1	0.1%
Grade 4	122	8.1%	110	6.7%	99	6.6%
Grade 5	1059	70.7%	1,255	76.7%	1,154	76.4%
Grade 6	134	9.0%	123	7.5%	103	6.8%
Grade 7	6	0.4%	3	0.2%	8	0.5%
Grade 8	11	0.7%	9	0.5%	10	0.7%
I am a special class teacher	29	1.9%	27	1.6%	24	1.6%
I am a teaching assistant	17	1.1%	33	2.0%	27	1.8%
I am an administrator	5	0.3%	5	0.3%	11	0.7%
Other *	101	6.7%	67	4.1%	73	4.8%
Ever visit a military base prior to your current STARBASE involvement?						
Never, this is my first STARBASE Program	330	22.0%	299	18.3%	252	16.7%
Yes, for prior STARBASE programs only	302	20.2%	400	24.4%	420	27.8%
Yes, for activities not related to STARBASE	447	29.9%	468	28.6%	384	25.4%
Yes, for STARBASE and non-STARBASE activities	349	23.3%	451	27.6%	405	26.8%
Other **	69	4.6%	19	1.2%	49	3.2%
Number of years with STARBASE						
This is my first year	713	47.6%	614	37.5%	527	34.9%
2-4 years	513	34.3%	680	41.5%	635	42.1%
5-7 years	202	13.5%	241	14.7%	209	13.8%
8-10 years	39	2.6%	70	4.3%	89	5.9%
11-15 years	28	1.9%	26	1.6%	41	2.7%
Over 15 years	2	0.1%	6	0.4%	9	0.6%
Number of years teaching						
This is my first year	77	5.1%	88	5.4%	92	6.1%
2-4 years	235	15.7%	270	16.5%	205	13.6%
5-7 years	189	12.6%	208	12.7%	226	15.0%
8-10 years	213	14.2%	199	12.2%	192	12.7%
11-15 years	233	15.6%	279	17.0%	263	17.4%
Over 15 years	550	36.7%	593	36.2%	532	35.2%

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

** The majority of the "Other" responses include family members either active or inactive/retired from the military with a few attending a base for an aviation festival or an air show.

DOD STARBASE'S IMPACT ON THE SCHOOL SYSTEM

The DoD STARBASE program is designed to enhance and expand many STEM concepts taught in schools while introducing new tools, technologies, and experimental applications in the existing school curriculum. It is not a replacement program for a school systems' STEM curriculum. As such, it does support state requirements in local and national testing requirements, and teachers recognize these DoD STARBASE attributes in their survey responses. The constructs included:

- School's communication regarding DoD STARBASE to the community.
- Teacher's use of DoD STARBASE materials in the classroom.
- Assignment of DoD STARBASE take-home activities.
- Teacher referrals/recommendations to other teachers, principals, and school system.
- Assessment of whether or not DoD STARBASE helps meet state performance requirements.

While most of the responses were very positive and supportive, there was a slight decrease in all areas compared to the 2009-2010 responses. The proportional ranges in each area remained the same. The most significant decrease was in the area of "teacher utilization of DoD STARBASE materials in the classroom" with a 3.3% decrease.

For those items that were directly under teacher control or in their attitudinal frames of reference, the positive scores remained very high. Use of DoD STARBASE materials (60.3%) in the classroom, take-home use of materials (59.6%), recommendations to other participants (88.6%), and the program's role in obtaining state requirements (94.8%) were all in the positive range.

Those scores not only support the conclusion that teachers place value on the program, but also that DoD STARBASE influences the school system, teacher involvement, and STEM-related objectives within the larger community. Furthermore, teachers recognize the strong contribution DoD STARBASE provides toward maintaining the academic success of their school.

DoD STARBASE's Impact on the School System 2009 - 2011
Exhibit 63

Item	Positive (Yes) Responses	Positive (Yes) Responses	Positive (Yes) Responses
	2009	2010	2011
Is there formal communication from the school that raises community awareness of the STARBASE program?	50.5%	51.4%	48.8%
Do you use DOD STARBASE materials/ applications in your own classroom?	62.7%	63.6%	60.3%
Do you have DOD STARBASE take-home/follow-through activities beyond your classroom presentation?	62.5%	61.5%	59.6%
Have you recommended STARBASE to other teachers, principals, or school systems?	89.5%	89.4%	88.6%
In your view, does the DOD STARBASE content and concepts help you reach your state requirements?	95.7%	96.0%	94.8%

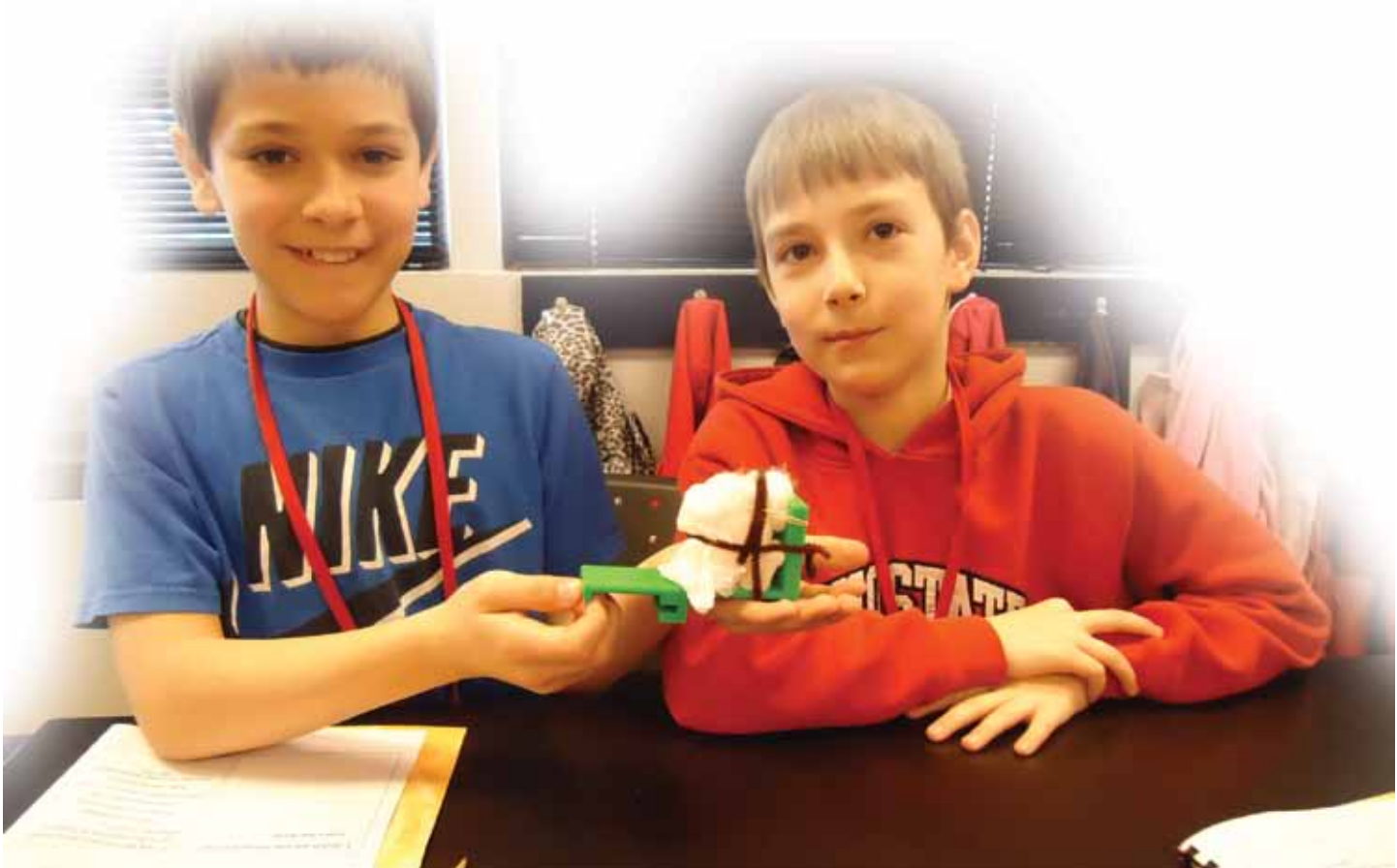
SCHOOL AND TEACHER INVOLVEMENT

This year school/teacher involvement was rated on five construct items as compared to four items in 2010 (see Exhibit 64). These constructs were then applied to 36 rated attitudinal items. The attitudinal items were rated on a seven-point Lickert scale from "Strongly Disagree" (1) to "Strongly Agree" (7) on their experiences and views toward the DoD STARBASE program. The five school/teacher involvement constructs were then analyzed across all attitudinal survey items. The five constructs are:

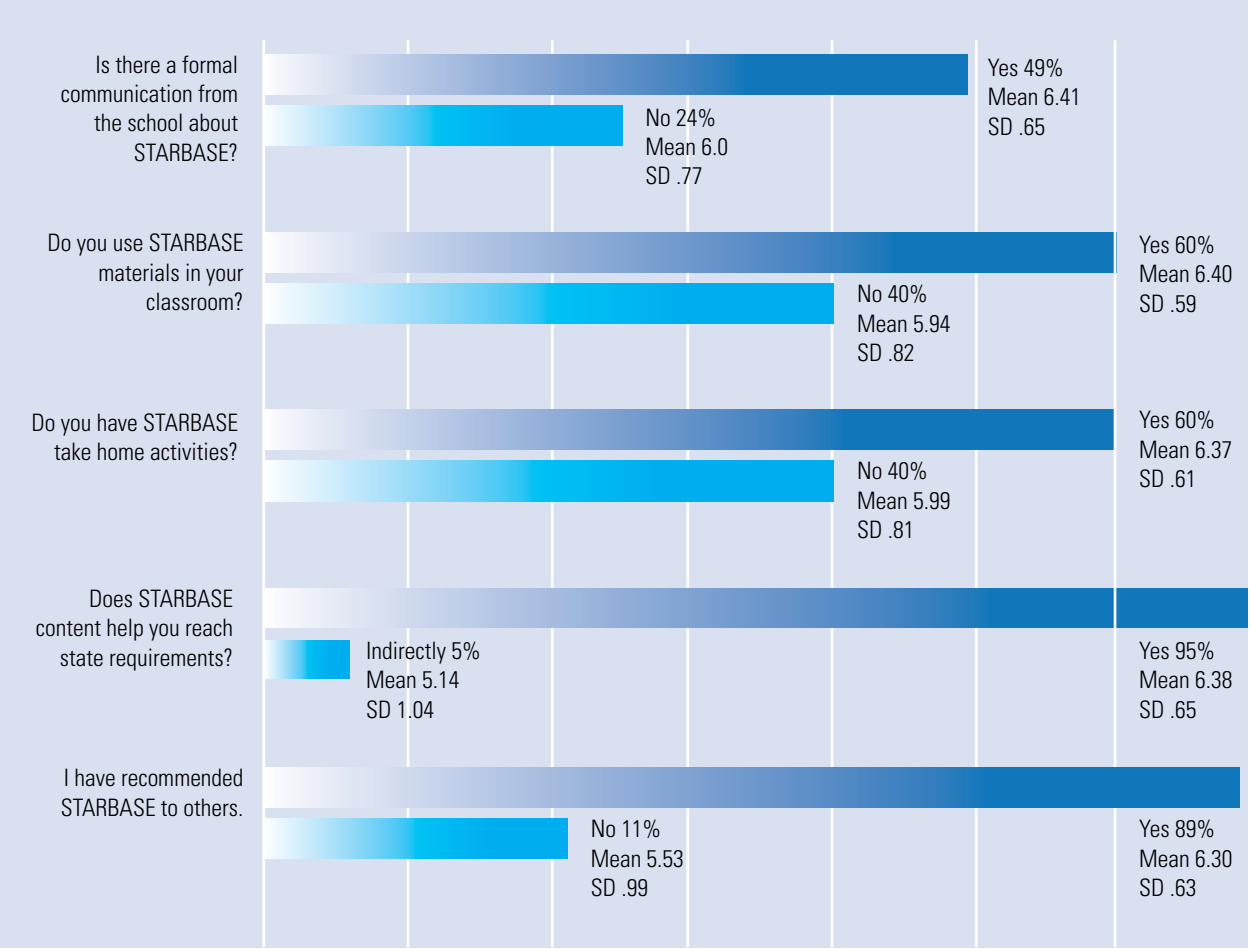
- Formal communication from the school about DoD STARBASE
- Teacher's use of DoD STARBASE materials in their classrooms
- Teacher utilizes DoD STARBASE materials for "take-home" activities
- DoD STARBASE program helps in meeting state requirements
- Teacher recommends DoD STARBASE to others

Overall, where there was teacher/school involvement, the mean teacher attitudinal scores were higher. For example, where there were school communications about DoD STARBASE, the attitudinal ratings were higher (6.41) as compared to those schools that did not (6.00). In addition, teachers who used DoD STARBASE materials in class and for take-home activities had higher ratings (6.4 and 6.37 respectively) than those who did not utilize materials with ratings of 5.94 and 5.99 respectively.

Teachers also assigned a high rating (6.28 by 95% of the teachers) to DoD STARBASE in helping to achieve state requirements. The teachers who saw only an indirect effect on state requirements rated this item at 5.14. Eighty-nine percent of teachers indicate that they recommend DoD STARBASE to others. The degree of teacher involvement is pro-active, and overall, teachers can be characterized as a DoD STARBASE advocacy group. Of those teachers who would recommend STARBASE, results indicated a 6.30 attitudinal rating as compared to a 5.53 rating by those who were not involved in the referral process. In summary, involvement by teachers and school reflects positive endorsement and program advocacy.



Significant Differences in Average Teacher Attitudes by Response to Key Involvement and Support Activities*
Exhibit 64



* Mean of all responses on scale from 1 (Disagree) to 7 (Agree)

TEACHER ATTITUDES BY DOD STARBASE EVALUATION FACTOR

The 36 attitudinal items were grouped into four basic constructs for evaluation purposes. An overall index is provided as a single combined measure in Exhibit 65. The construct groups are:

1. STEM-related items in science, technology, engineering, and math
2. Perception about the military
3. Citizenship and pro-social attitude
4. Overall effectiveness of DoD STARBASE

The past two years introduced upgrades in the core curriculum to align DoD STARBASE programs in each of the core content areas. While changes were made in academic content and lesson plans,[8] the areas of focus and basic objectives were maintained, which provides a basis for making comparison across program years. The following exhibit demonstrates that the overall assessment index shows some fluctuation over the years. However, the last three years, from 2009 through 2011, were among the highest rated years (N=6.22), which is well above the overall mean of 6.17 for the years 2001-2011. The higher upward trend has been much more stable over 2009 to 2011.

Overall Mean Ratings of Teacher Attitudinal Assessment (2001-2011)[9]
Exhibit 65

	Year										
Overall Index	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
(Summative Mean Ratings)	6.24	6.13	6.10	6.15	6.17	6.10	6.08	6.14	6.24	6.26	6.22

While there was a small difference in the overall gap between 2010 and 2011 (-.04), which was not statistically significant, the overall assessment index over the past five years displayed a clear positive attitudinal shift (+.14). All four construct factors demonstrated positive gap differences over the past five-year period in the following exhibit. The construct factor that incorporated teacher attitudinal items for STEM-related indicators displayed the largest gap score improvement over the last five years with a mean of 5.95 in 2007 to 6.16 in 2011 (a gap score of +.21). Over the past two years, the new curriculum emphasized these changes and emphasis in concept areas. The ratings reflect their attainment from the teacher perspective.

Average Mean Ratings and Gap Difference Scores by Assessment Index Constructs (2007-2011)
Exhibit 66

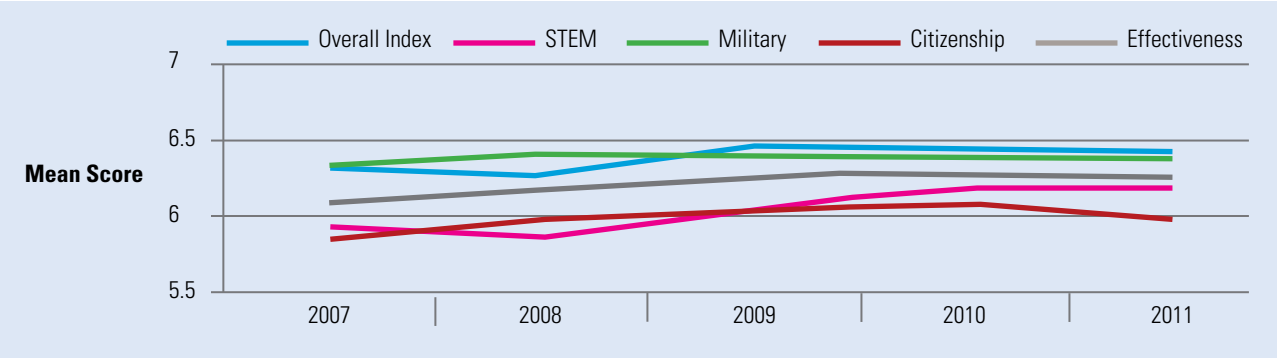
	Year					
Construct Items	2007	2008	2009	2010	2011	Gap Difference 2007-2011(+/-)
Overall Index	6.08	6.14	6.24	6.26	6.22	+ .14
STEM	5.95	5.92	6.10	6.17	6.16	+ .21
Military	6.25	6.36	6.36	6.37	6.36	+ .11
Citizenship/ Pro-Social	5.89	6.00	6.06	6.07	5.98	+ .09
Effectiveness	6.25	6.26	6.41	6.41	6.39	+ .14

STEM-related activities demonstrated the greatest degree of improvement among the four constructs, and citizenship was the lowest improvement. However, all group scores in the four areas displayed significant gap score improvement (see Exhibit 66 and Exhibit 67). The following exhibit graphically traces the construct mean scores from 2007 through 2011.

[8] Details provided within the Student Survey Analysis Report.
[9] The calculations included in this table are the total mean responses for all attitudinal items.

Since 2009, the scores in each area generally fall above the 6.00+ level; the exception was citizenship/pro-social which fell to 5.98 on a seven-point scale. Teacher perceptions have remained high during the four-year period. Meeting STEM objectives, perceptions of the military, and overall DoD STARBASE effectiveness were all well above the 6.00+ level during that period. During this same time period, the DoD STARBASE curriculum has been updated to focus only on STEM subjects.

Teacher Ratings by Assessment Construct
Exhibit 67



The citizenship/pro-social construct obtained high ratings but less dramatic gap increases than the others. Program instructional techniques and program applications still emphasize many of the basic concepts that comprise this construct. They include teacher perceptions about students' improvement in the following areas:

- More willing to cooperate with each other
- Better at working in groups
- More likely to encourage each other
- More goal oriented
- More confident about what they can accomplish
- More comfortable making decisions
- Better at following directions

The new curriculum embeds team-building, cooperative tasks, and cross-training across problem-solving applications, but it does not explicitly headline these applications as primary objectives. The utilization of key constructs and concepts, and their word use, may overshadow the pro-social/citizenship constructs, as well as the above attitudinal factors, given that these areas are embedded in other construct areas. This suggests that instructional modalities need to explicitly state and emphasize that these applications will be used in each of the lesson plans and are an essential part of successful skill implementation.

TEACHER ATTITUDINAL RATINGS ON STEM-RELATED ACTIVITIES

Six attitudinal items comprised the STEM construct. They are primarily focused on the teachers' perceptions of how DoD STARBASE affects student behavior and understanding in the areas of engineering, math, science, and technology. The last three years of assessment has seen a substantial increase in the overall STEM mean score at the 6.10+ level and a +.21 gap difference from 5.95 in 2007 to 6.16 in 2011. Teachers have indicated that students' interest and application of math skills have improved over the past five years as reflected in the following graphic. All items in the 2011 ratings indicate substantial increases in the gap scores. However, there were slight decreases in science and participation in the Science Fair from last year's ratings.

Teachers' Perceptions of Students Interests and Behavior Related to Math, Science and Technology (STEM) 2007–2011
Exhibit 68

	Mean Scores Across Years				
Items	2007	2008	2009	2010	2011
More interested in learning about math	5.43	5.70	5.67	5.77	5.79
More interested in learning about science	6.37	6.45	6.54	6.54	6.51
The students ask more questions about technology	5.60	5.72	5.90	5.90	5.91
STARBASE has helped improve the students' understanding of science	6.38	6.46	6.61	6.60	6.54
STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	5.93	6.07	6.12	6.23	6.26
After STARBASE attendance, there is increased participation in the Science Fair	N/A	5.14	5.53	5.78	5.66
Combined STEM Mean Score	5.95	5.92	6.10	6.17	6.16

THE TOP ATTITUDINAL RATINGS OVER THE LAST FIVE YEARS: 2007–2011

The top-rated teacher perceptions are firmly consistent with last year's ratings and rankings. The top 14 ratings are tightly clustered, as they have been over the past three years, in that the attitudinal ratings ranged from 6.40 to 6.83. There were a few minor changes in the rankings, but the adjustments were changed as a result of a difference of a rating score. These high ratings and their consistency demonstrated the classroom teachers' positive perception on the value of the program to the students, the school system, the school curriculum, and to the teachers themselves (see Exhibit 69).

Student experience ranked in the top two at 6.83 and 6.82 on the seven-point scale. Teacher experience ranked third and sixth, with teachers looking forward to continued program participation and the program's positive influence on them personally. Structural components of the program ranked fourth and fifth with DoD STARBASE instructors being good role models for the students and the determination that the DoD STARBASE program supports state standards. All of the above items had ratings above 6.71 on the Lickert scale.

The inclusion of several items that go beyond the DoD STARBASE classroom indicates that the teachers value the program's impact beyond attendance at the location. Examples of these items include the fact that teachers have changed their instructional applications and are using the program materials in their own curriculum.

Attitudinal items that rated highly were teacher and student experiences and structural/organizational components of the DoD STARBASE program. These overall ratings, especially of the top rankings, provide justification why schools invest student hours to the program, especially when the program obtains STEM-related improvements, supports state standards, improves pro-social/citizenship objectives, and offers additional activities for the school curriculum and classroom.

Top 14 Teacher Ratings Over a Five-Year Period

Exhibit 69

2011 Rank	Item	2007	2008	2009	2010	2011
1	The children enjoy sharing their STARBASE experiences with others	6.70	6.81	6.83	6.83	6.83
2	The STARBASE experience will be a positive influence on students in coming years	6.68	6.76	6.84	6.83	6.82
3	I look forward to my classes' continued participation in the STARBASE program	New Item	6.79	6.85	6.83	6.81
4	The STARBASE instructors are good role models for the students	6.61	6.76	6.84	6.84	6.80
5	The STARBASE curriculum supports our state standards	6.64	6.59	6.70	6.71	6.72
6	The STARBASE experience has been a positive influence on me personally	6.64	6.58	6.76	6.73	6.71
7	The students enjoyed being on a military base	6.38	6.50	6.61	6.63	6.66
8	STARBASE reinforces many positive behaviors I try to teach my students	6.64	6.70	6.71	6.69	6.65
9	The students admire their STARBASE instructors	6.45	6.60	6.63	6.61	6.62
10	Parents are delighted that their children are participating in STARBASE	6.43	6.43	6.63	6.62	6.59
11	The students talk about STARBASE long after the program has ended	6.47	6.62	6.61	6.59	6.58
12	STARBASE has helped improve students' understanding of science	6.38	6.46	6.61	6.60	6.54
13	More interested in learning about science	6.37	6.45	6.54	6.54	6.51
14	My principal is a strong advocate of STARBASE	6.30	6.33	6.41	6.42	6.40

TEACHER ATTITUDES ACROSS MILITARY SERVICE COMPONENTS AND REGIONS

COMPARISONS ACROSS MILITARY SPONSOR COMPONENTS[10]

The most useful application in this analysis across the locations is in identifying areas of potential improvement in future planning, program applications, and curriculum emphasis. Each military service component has operating procedures, facilities management, and in-kind resources that are unique in their base operations. The data presented in this section should be reviewed from the perspective of program improvement and not for comparisons between organizational differences.

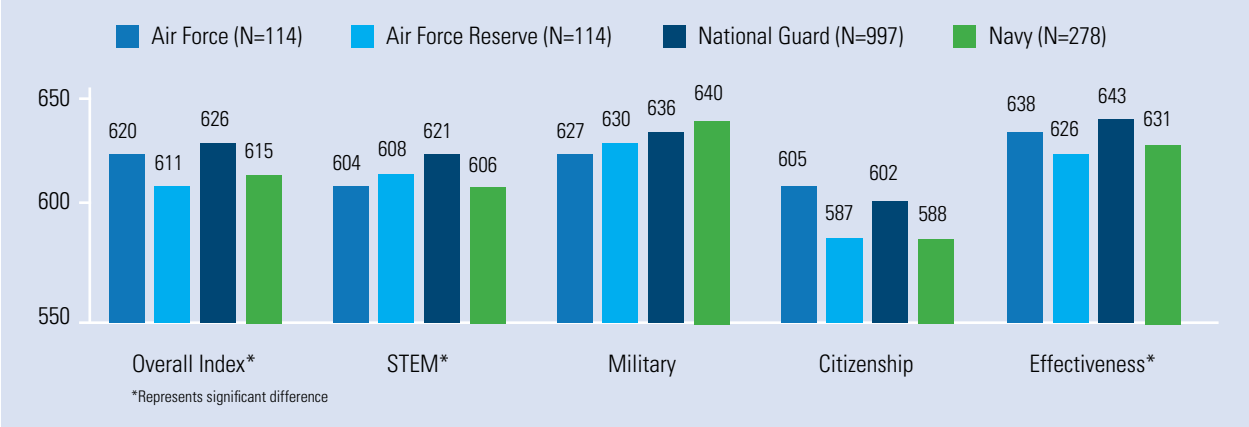
Across the different branches of the military, there are differences in the teachers' ratings of attitudinal items. Many of the items are statistically significant and may be of interest to locations operating under the different branches. The attitudinal constructs on STEM objectives, citizenship, effectiveness, the military, and the overall index are briefly described in the following discussion and in Exhibit 70 below. For greater detail on specific items, see the Appendix section where military service sponsorship and location differences are presented in graph form. The attitudinal constraints that are statistically significant are identified and are found in STEM program effectiveness and the overall index across the locations.

Teacher perceptions differ across military branch sponsorship regarding their DoD STARBASE experience along the following discussions:

- The most favorable attitudinal responses in the STEM and program effectiveness were obtained by the National Guard.
- High ratings in the citizen/pro-social attitudinal construct were gained by the Air Force locations.
- The Naval locations attained their highest responses in military personnel/career items in general and in the administration of DoD STARBASE instructors in particular.
- The Air Force Reserves and Navy responded least favorably among the military service components on citizen/pro-social preferences.

There are a number of differences across the locations' sponsorship and examination of those differences whether more or less highly rated could prove useful in expanding program emphasis and instructional application. Given that the ratings are high for all locations, the differences are relative.

Teacher Survey Factors Across Military Service Sponsorship
Exhibit 70



[10] There was insufficient sample size from the Marine DoD STARBASE program, so the responses were not calculated in the comparison analysis.

TEACHER PREFERENCES ACROSS REGIONS

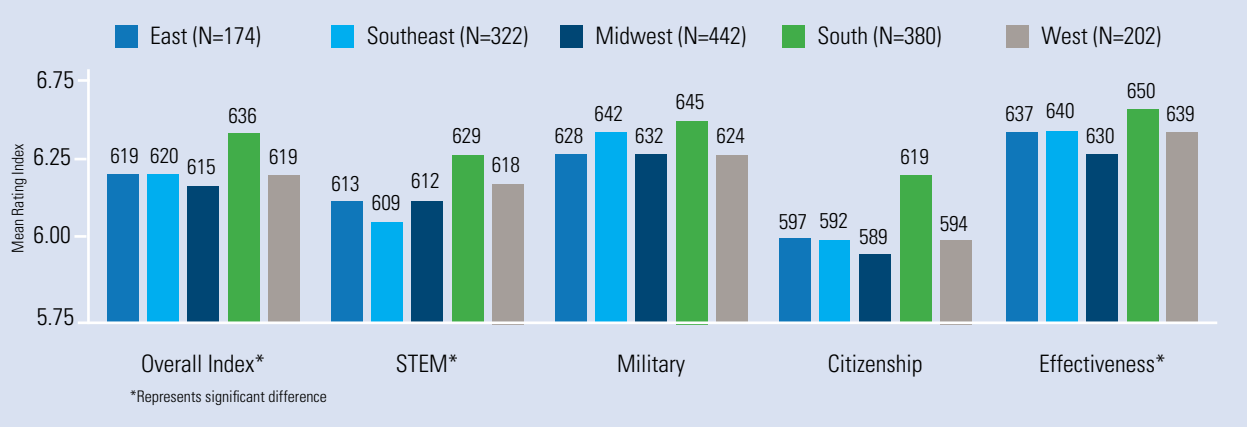
Regional differences are important because of the concentration of DoD STARBASE locations in the South and Southeast and the wide geographic dispersion of the other locations. The teacher survey covers 59 DoD STARBASE locations in five regions (see Exhibit 71).

The southern region responses were significantly more favorable than the other four regions. In the South, the teachers' responses were significantly more favorable than the Midwest region on program effectiveness and the overall index. They were more significantly favorable than the West on the military construct attitudes, and they were more favorable on citizenship/pro-social factors than the Southeast, Midwest, and West.

There are wider arrays of differences across the regions on specific items, and similarly, because of the high ratings from the South, the comparisons are significant. A review of these differences is in the Appendix. Some regional trends are noted:

- The Southeast region responded more favorable than several other regions on school board involvement.
- The West region was more favorable in improving the understanding of science than some of the other regions.
- The East region was more favorable than the Southeast on reinforcing positive behavior by the teachers, while less favorable to military personnel than the South and Southeast region.

Teacher Survey Attitudinal Survey Factors Across Regions
Exhibit 71



COMPARISON OF ATTITUDES ACROSS TEACHER CHARACTERISTICS

Correlation analysis on teacher characteristics was conducted to determine and identify trends that are related to other survey items including years of teaching experience; prior experience; and familiarity with military personnel/base, grade levels taught, and years with the DoD STARBASE program. These demographics were evaluated to determine what trends and shifts occur in relation to each of the indicator's characteristics.

A Pearson correlation coefficient analysis provided a number of significant correlations between expressed attitudes and each of the above demographics. The number of years of teaching experience and years of DoD STARBASE involvement displayed high positive significant

correlations as the following graph demonstrates. The Appendix contains the complete matrix of correlation coefficients with each teacher demographic.

Overall, the teachers with more DoD STARBASE experience respond more favorably than teachers with less DoD STARBASE involvement and as experience increased so did positive responses. This trend was also reflected with those who were more experienced teachers.

Attitudinal Items Related to Teacher Characteristics
Exhibit 72

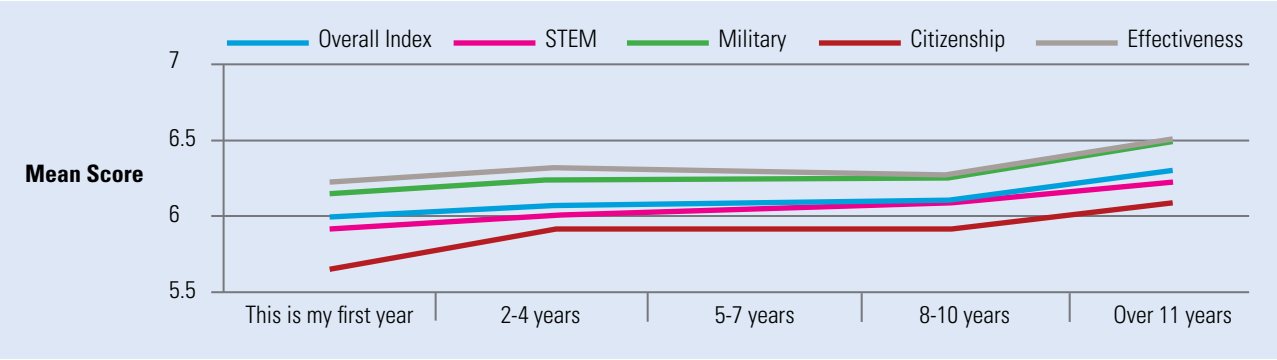
	Grade Taught^	Years with STARBASE	Years as a Teacher
More interested in learning about math		.15**	.18**
More interested in learning about science		.13**	.13**
More willing to try new things		.13**	.16**
Better at following directions	.06*	.18**	.21**
Better at working in groups	.06*	.16**	.17**
More confident about what they can accomplish		.12**	.14**
More goal-oriented		.15**	.17**
More comfortable with military personnel	.07*	.16**	.15**
More comfortable making decisions		.16**	.17**
More excited about their futures		.11**	.14**
More excited about learning		.13**	.15**
More likely to encourage each other		.15**	.19**
More willing to cooperate with each other		.14**	.18**
The students ask more questions about technology	.06*	.09**	.10**
STARBASE has helped improve the students understanding of science		.11**	.11**
STARBASE has helped to improve appreciation of how math can be applied to a variety of situations		.10**	.14**
STARBASE has helped improve the climate for participative learning in the classroom		.14**	.19**
Because of my participation in STARBASE, I am more comfortable with military personnel		.14**	.14**
The students talk about STARBASE long after the program has ended		.19**	.14**
STARBASE reinforces many positive behaviors I try to teach my students		.15**	.16**
I use the resources STARBASE provides to teachers		.12**	.14**
My principal is a strong advocate of STARBASE		.07**	.08**
My school board is very involved in supporting STARBASE		.09**	.09**
The STARBASE instructors are good role models for the students		.07*	.09**
I have included many STARBASE resources in my curriculum	.07*	.18**	.15**
The students admire their STARBASE instructors	-.06*	.12**	.13**
The STARBASE curriculum supports our state standards		.08**	.09**
The children enjoy sharing their STARBASE experiences with others		.08**	.08**
Parents are delighted that their children are participating in STARBASE		.11**	
The students enjoyed being on a military base		.10**	.08**
The STARBASE experience will be a positive influence on students in coming years		.08**	.08**
The STARBASE experience has been a positive influence on me personally		.08**	.12**
Students that attend STARBASE perform better on standardized state assessments		.12**	.14**
I look forward to my classes' continued participation in the STARBASE program		.09**	.08**

^1,374 teachers that reported teaching grades 4 through 8 were included.
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

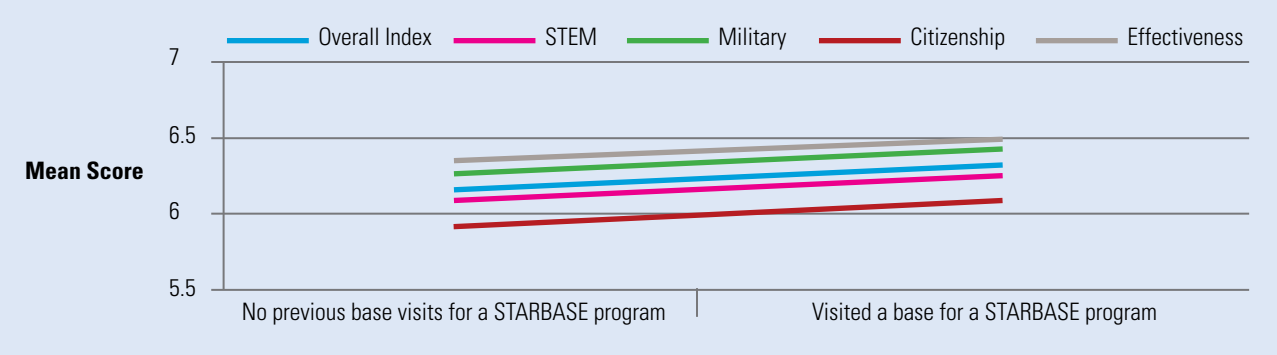
TEACHING EXPERIENCE AND EXPERIENCE WITH DOD STARBASE: SHIFTS IN ATTITUDINAL SURVEY CONSTRUCTS

For each of the attitudinal constructs, such as STEM, military experience, citizenship/pro-social, and program effectiveness, teachers with more teaching experience and more DoD STARBASE experience report more positive attitudes for each construct. Those with less experience in each dimension have lower favorable experiences. The correlation proposes that as teaching and DoD STARBASE experience increases so does the favorable responses (see Exhibit 73 and 74).

Shift in Teacher Attitudinal Constructs Based on Number of Years with DoD STARBASE
Exhibit 73



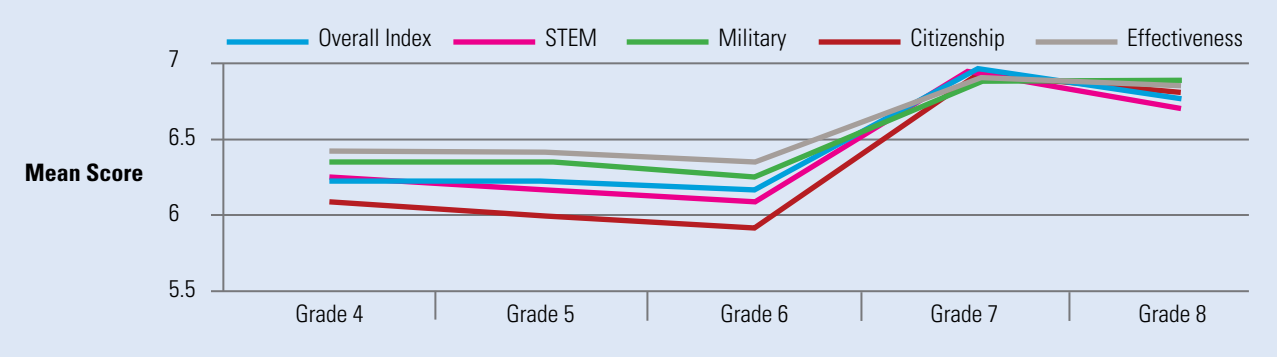
Shift in Teacher Attitudinal Constructs Based on Number of Years with DoD STARBASE
Exhibit 74



TEACHING GRADE AND SHIFTS IN TEACHER ATTITUDINAL CONSTRUCTS

As with shifts in teaching experience, there are changes and shifts evident in the teachers' grade level responsibility for each of the four attitudinal constructs including the overall mean attitudinal index (see Exhibit 75). The responses by grade level indicated that the higher grade level taught, the more positive the response (although the sample numbers at grade 7 and 8 were small). The sixth-grade teachers are generally consistent with the fourth and fifth grades with the latter being the predominant and target level respondents. The ratings were generally high, but the shifts in the lesser target grades were level and consistent.

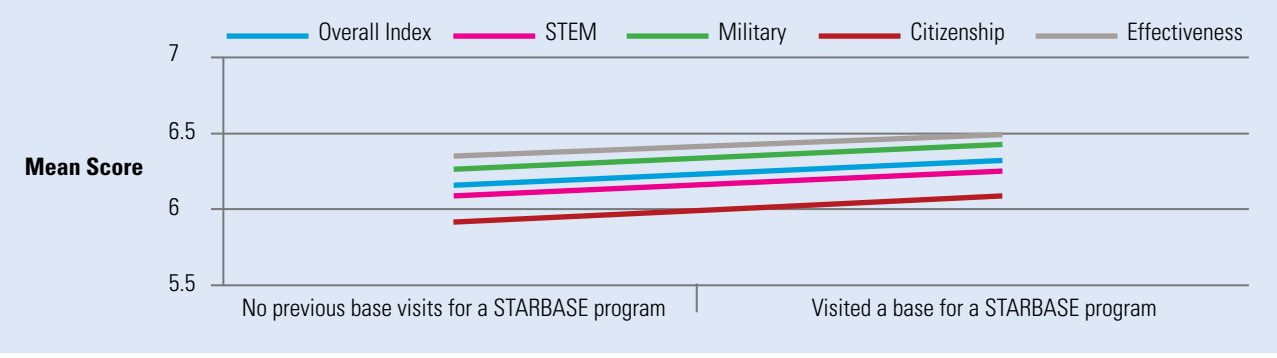
Shift in Teacher Attitudinal Constructs Based on Educational Experience
Exhibit 75



FAMILIARITY AND EXPERIENCES WITH MILITARY BASES AND TEACHER ATTITUDINAL CONSTRUCTS

Teachers who had prior familiarity and experiences with the military responded more favorably than those teachers without prior experience, as well as those who had prior military experience unrelated to DoD STARBASE (see Exhibit 76). The program exposure on base is strongly correlated to positive attitudinal responses on all of the attitudinal constructs on STEM, citizenship/pro-social, program effectiveness, and military service components.

Shift in Teacher Attitudinal Constructs Based on Visiting a Military Base
Exhibit 76



DRIVERS OF TEACHER OPINION

"Drivers of Opinion" about DoD STARBASE determined by the teachers' responses were obtained by a multiple regression analytical technique to determine the key drivers of teacher opinions on the DoD STARBASE program. The chart on the next page provides a rank-ordered list of seven non-overlapping survey items that are predictors of key target attitudes. Each of the target attitudes has a list of the most predictive items, or "drivers," for that attitude.

Thus, if the conditions in the list are present, the target attitude will most likely also be present. These lists can be utilized to help prioritize action items for improving target attitudes. The Adjusted R Square column on the right-hand edge of the chart provides a quantitative measure of how well the combination of drivers contributes to the target attitude. These lists can be used by instructors and/or instructional designers to prioritize action items to improve the target attitudes (see the Appendix for an explanation of multiple regression analysis).

Two drivers occur frequently enough to be considered main drivers affecting the target attitudes. This repetition in the analysis suggests that they have a broad influence on the target attitudes:

- "DoD STARBASE has helped improve the climate for participant learning in the classroom" – this response produces an environment conducive to participant learning and has a positive impact on students' understanding of science. In addition, participant learning environments reinforce many positive behaviors and have a positive influence on students in the coming years.
- "DoD STARBASE instructors are good role models for the students" – the opportunity to have good role models in their DoD STARBASE instructors has a lasting positive influence on students and also increases their understanding of science. Teachers see the value in meaningful mentors and look forward to future participation in the DoD STARBASE Program.

Drivers of Key Target Attitudes
Exhibit 77

Target Attitude	Drivers of Target Attitude	Adjusted R Square
More comfortable with military personnel All respondents (n=423)	(Students are) More comfortable making decisions	.404
	Because of my participation in STARBASE, I am more comfortable with military personnel	.494
	The students enjoyed being on a military base	.537
STARBASE has helped improve the students' understanding of science All respondents (n=423)	STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	.635
	(Students are) More interested in learning about science	.728
	The STARBASE curriculum supports our state standards	.754
	STARBASE has helped improve the climate for participative learning in the classroom	.766
	The STARBASE instructors are good role models for the students	.775
More interested in learning about math All respondents (n=423)	STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	.576
	(Students are) More goal oriented	.649
	(Students are) More interested in learning about science	.680
STARBASE reinforces many positive behaviors I try to teach my students All respondents (n=423)	The students talk about STARBASE long after the program has ended	.611
	The children enjoy sharing their STARBASE experiences with others	.697
	I use the resources STARBASE provides to teachers	.726
	STARBASE has helped improve the climate for participative learning in the classroom	.741
The STARBASE experience will be a positive influence on students in coming years All respondents (n=423)	The STARBASE instructors are good role models for the students	.574
	The students enjoyed being on a military base	.651
	The children enjoy sharing their STARBASE experiences with others	.692
	STARBASE has helped improve the climate for participative learning in the classroom	.718
More excited about their futures All respondents (n=423)	(Students are) More goal oriented	.626
	The students ask more questions about technology	.681
	(Students are) More excited about learning	.708
	(Students are) More comfortable making decisions	.724
I look forward to my classes' continued participation in the STARBASE program All respondents (n=423)	The STARBASE experience has been a positive influence on me personally	.641
	The STARBASE instructors are good role models for the students	.715
	I use the resources STARBASE provides to teachers	.730
	The STARBASE curriculum supports our state standards	.738

SUMMARY OF TEACHER ASSESSMENT

Teachers are one of the most important providers of feedback on what works, what does not, and what needs to be considered for the DoD STARBASE program to be more effective. They are also a key agent in referral to other school systems, teachers, parents, and students in the program applications and to other STEM programs in the community.

Teachers observe the program on a daily basis. They track the effect upon students during and after the program's application. And, they serve as "expert panel members" in the impact of the program on the students, the school, and other program objectives. The most recent example of their significance related to their feedback on upgrading and expanding the math applications in the curriculum. They are a critical element in the assessment process.

Teachers are positive advocates of DoD STARBASE as well as self-proclaimed beneficiaries of its activities. Their acknowledgment of linkages to state educational requirements; work as unsolicited referral agents to the school administration, other teachers, and to parents; and personal use of DoD STARBASE materials in their classrooms makes them key agents of the program. The consistency of their positive responses to the program has been unwavering.

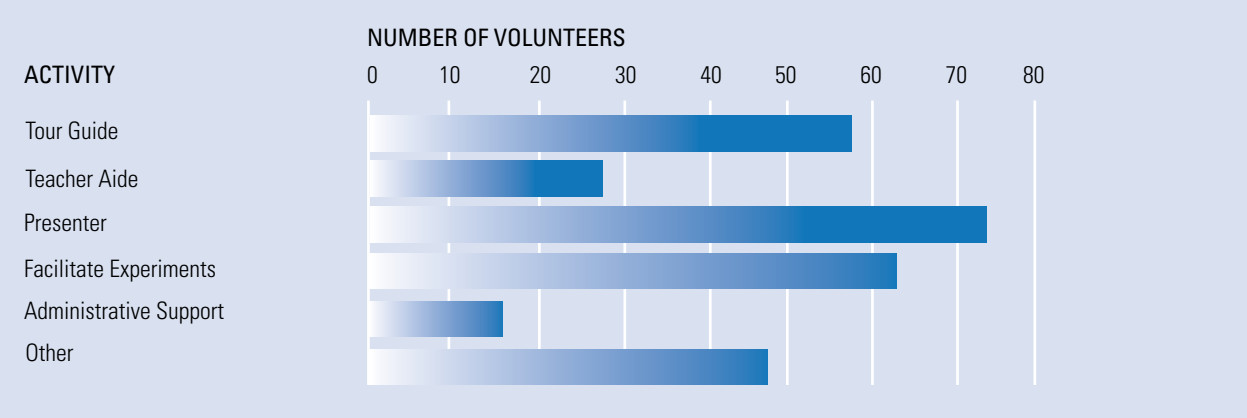
MILITARY VOLUNTEER SURVEY RESULTS

Each year an online survey is conducted of military personnel who volunteer their time to support DoD STARBASE. Their evaluations provide valuable insight into the program's impact in the community and within the military. Volunteers also provide information on how the program affects them personally. This year 196 military volunteers responded to the survey.

When asked if DoD STARBASE made a difference in the community, 78% responded that it made a significant or strong difference in their community. Fourteen percent said that they did not know about the impact on the community. Most of these respondents indicated that they were new to the community and did not feel comfortable responding to this question. Most respondents also felt that DoD STARBASE gave the community an opportunity to develop a better understanding of the military and that parents found the program to be an "awesome" learning experience for their children.

There are several avenues of contribution for volunteers who often serve in more than one capacity. The chart below shows the volunteer activities of the respondents.

Volunteer Activities 2011
Exhibit 79



The respondents also reported that volunteering had a positive impact on them and their colleagues. Responses indicate that seeing their careers through the eyes of the children gave them a renewed sense of pride in their work. Others reported that speaking to the students and working with them on experiments improved their public speaking abilities and leadership. Giving back to their community and making a positive impact on the future were also important to the volunteers. Of those surveyed, 46% volunteered five hours or less; 20% volunteered between six and nine hours; 24% volunteered between 10 and 25 hours; 7% volunteered between 51 and 75 hours; 7% volunteered between 76 and 100 hours; and 0.5% volunteered more than 100 hours.

When asked how the program could be improved, the volunteers had positive suggestions. Their responses included:

- Increasing public awareness of the program
- Securing additional funding so that more children in their communities could be served
- Color coding lesson materials
- Expanding curriculum recommendations
- Increasing and/or improving computers for student use
- Providing more flexibility in curriculum and curriculum delivery
- Creating groups of fewer students during observation of classroom principles applied to tasks

One hundred percent of respondents would recommend volunteering at DoD STARBASE to other military personnel.

This year, 41% of the responses were Air Force personnel, 33% from members of the National Guard, 17% from the Navy volunteers, and 1% from Coast Guard volunteers. The volunteers were from 22 locations.

CONSIDERATIONS

CONSIDERATIONS FOR THE 2011 PROGRAM YEAR

At the conclusion of every Annual Report, there is a proposed list of "considerations" on program areas. The considerations are heavily focused on program operations, program delivery, curriculum, compliance, and new program initiatives. The DoD STARBASE community of staff and the emerging base of participants are focused on constantly improving the DoD STARBASE program, and each year's considerations are designed to a sources of guiding planned and purposeful change.

THE SOURCE OF CONSIDERATIONS

The following considerations were derived from multiple sources. These include the analysis of students' attitude and knowledge assessments; the documentation of location operations; surveys of teachers, school administrators, military personnel, base commanders, and volunteers; compliance visitations; and specialized evaluation studies on new program applications. Program sponsors and a wide array of program participants provide solicited or unsolicited input on all phases of the program. All input is reviewed for criticality, timeliness, and value to the program as a whole. Specific suggestions to individual locations are handled directly with the affected location.

This year, the program experienced major changes in the implementation of the core curriculum and the processing and review of optional lesson plans consistent with standardized DoD STARBASE curriculum objectives. Those changes also precipitated adjustments to the performance assessment and testing processes as well as the validation of the compliance adherence requirements. In addition, DoD STARBASE 2.0 has expanded to almost twice as many locations as were in place in 2010, which, in turn, precipitated an expansion with the school system.

The interest in enhancing STEM initiatives has linked several locations into new program applications, partnerships, and referral processes. These activities along with other program initiatives at the 60+ locations and their outreach efforts have produced new challenges and issues that require the compilation of best practices, problem-solving, and new procedures in operations. The following considerations are part of the experiences and challenges to the DoD STARBASE program this year. The review of these considerations will provide assistance in guiding staff and participants into the next phase of the program.

Assessment

- Given the extensive revisions in the core curriculum and the potential for variances in lesson-plan options in each core area objectives, serious consideration should be given to the establishment of a process to review and revise test items for the student assessment prior to the next field test in the 2012 program year.
- The review process should focus on revisions to test items for appropriateness in content coverage, adherence to curriculum objectives, language level appropriateness, and applicability/usage to operating locations. Final test construction, field-test methodology, analysis, and test standards would continue to be the responsibility of the assessment team.
- It is expected that changes in options for curriculum lesson-plan development will continue to evolve. Field-testing of a near-to-complete standardized tests will continue during that time period.
- The review process will provide a more structured and focused input during the test development phase than the use of surveys.

PERFORMANCE ASSESSMENT ADMINISTRATION

- It is suggested that several items be added to the next Directors' Questionnaire to cover items in the Performance Assessment System (i.e. Levels I-II) especially in relationship to core curriculum coverage, documentation, STEM canvassing, assessment, etc.
- Level III activities should have some empirical demonstration that the location is advocating for the DoD STARBASE students' interests in building opportunities for skills and abilities through any third party collaborative relationships that are established for downstream applications. The results of the activity should be available for documentation of student involvement or performance by simple tracking, performance-based, and/or positive organizational changes in the participating agents/agencies. Proposed activities will require some review by OASD/RA staff prior to the activity being accepted as eligible for Level III consideration.
- For Level II performance, consideration should be given to the development of a brief set of criteria for developing an inventory of STEM-related programs in local areas as potential collaborator(s). It is suggested that a system at the completion of any level be validated through documentation and formal recognition by OASD/RA through the oversight parties.

ATTITUDINAL TEACHER/STUDENT INSTRUMENTS

- Given the changes in the curriculum and also the potential revisions in some of the lesson plans, a small number of items will have to be considered in the assessment tools for both students and teachers in 2012.
- Submitted lesson plans should include possible test items that adhere to the lesson plan objectives.

CURRICULUM

- Any corrective action and/or revision in lesson-plan submission or implementation should have a schedule for completion attached to a results-obtained listing to obtain validation through the assessment process. This would help in the timely scheduling and attainment of Level I - III status for moving to the next-performance activity.
- Staff development activities should give priority to curriculum improvements and applications as well as fulfilling certification requirements.

WEBSITE

- Notify users of important dates on homepage of DoDSTARBASE.org for testing, survey submission, professional development, and photo submission.
- Update DoDSTARBASE.org to enhance usability and refine functionality.
- Notify the user of new lesson plans, activities, and other information as it becomes available.

DOD STARBASE 2.0

The following items should be considered during the pre-implementation process:

- An assessment of required resources in mentor skills availability.
- Equipment readiness at school sites (e.g. computer interface, etc.).
- Mentor selection and vetting schedules and process.
- The scope and number of school sites and students.
- A clear evolvement of all requirements and responsibilities of the participant members in the MOU.

- The range, scope, and time required by location staff in start-up activities.
- Training for DoD STARBASE 2.0 should probably be independently developed by existing DoD STARBASE locations and internal resources along with regional assistance and central coordination by OASD/RA.
- Given that mentor training can be conducted by DoD STARBASE personnel, an abbreviated mentor skills training can be designed along with program area applications (e.g., robotics, scalextrics, etc.), so greater focus on STEM-related activities is employed.
- Locations should consider building larger, trained, mentor pools at the point of implementation to offset potential losses due to deployment, mission conflicts, absences, and natural attrition. Where applicable in school systems, explore the use of certification credits, CEUs, stipends, etc., with the school administration to assist in obtaining ongoing teacher commitments and retention.
- Before making any programmatic and scheduling commitments, perform a front-end assessment of program resources, school demand, school capability, mentor pool availability, and participant requirements and commitments.

CHALLENGES FOR THE 2011 PROGRAM YEAR

This section provides a broad-based overview on several suggestions for process and procedures on program performance and assessment with emphasis on identifying location performance and program enhancement. The overview focuses on linking compliance, site visitations, data informational requirements, participant group involvement and outreach collaborations with the progressive location performance systems as described in Levels I-III. The suggestions also emphasize linking the program with other STEM programs that develop student skills in STEM content areas of math, science, and technology. The DoD STARBASE locations are reaching beyond the delivery of STEM curriculum in the classroom and are now organizing the STEM area resources in each of their communities for development of DoD STARBASE students in other collaborative and referral relationships downstream. The view is less on simply meeting compliance but rather higher levels of performance and a pro-active orientation for the location and its target population.

PROGRAM OPERATIONS AND COLLABORATIONS

Performance expectations in the 2011-2012 program year should have complete adherence to all requirements for each operating location at Level I and achievement of the majority of Level II program activities. For those locations that have not obtained Level I but show progress at Level II (i.e. more than half of the requirements), it is suggested that they develop a corrective action plan along with a schedule that obtains that status within a six month period. Copies of that plan should be forwarded to OASD/RA, the military service oversight manager, and the appropriate sponsor. Progress in this activity should be updated every three months, or more frequently if the location is in a non-complaint status at Level I. Based on the post visitation schedule in 2010, this objective is well within reach of all locations as stated by their after-action reports.

Once a location completes validation of Level I activities, they may proceed with Level II validation. The major labor intensive activity at Level II is the compilation and assessment of STEM programs and activities that are available to the students. Establishment of collaborations, partnership, referral, and relationships are to be part of the DoD STARBASE plan for review at Level III. Level II is the front-end analysis and assessment of capabilities and role relationship with DoD STARBASE to determine what next steps need to be developed for strategic partnership assessment and implementation. The product at Level II is an inventory of STEM resources and procedures for program entry for DoD STARBASE students. Full completion of this inventory is not necessary for Level II, but rather an identification of the key resources and their value for a potential relationship link. Consideration of the development of an instrument that assists the location in data collection, analysis, and criteria for potential relationship assessment would help in the process for assessing the location's validation of the activity.

STUDENT/TEACHER ASSESSMENT

There are several considerations in the development of student/teacher assessment instruments as program content and delivery changes. The usual applications of field-testing for reliability and validity of test items through item analysis and student/participant responses require additional applications that deal with test administration procedures, language level applicability, and user understanding; fit of items to content/curriculum objective and emphasis; coverage of content; and level of item difficulty for selected audiences. An important element in obtaining useful and timely input and suggestions in test applicability and the fit of test items to content and to the student is from those instructors and developers of the curriculum. It is suggested that a panel of location personnel and staff representing regions, military service sponsor groups, and length of location operation review items for many of the above design considerations for reliability and validity as well as content fit prior to final design and field-test application. These suggestions would prove more focused and item-specific than comments provided in after-action assessment. See the Reports section on "student assessment" for greater detail on the process and the advantages of a panel group application in the test development process.

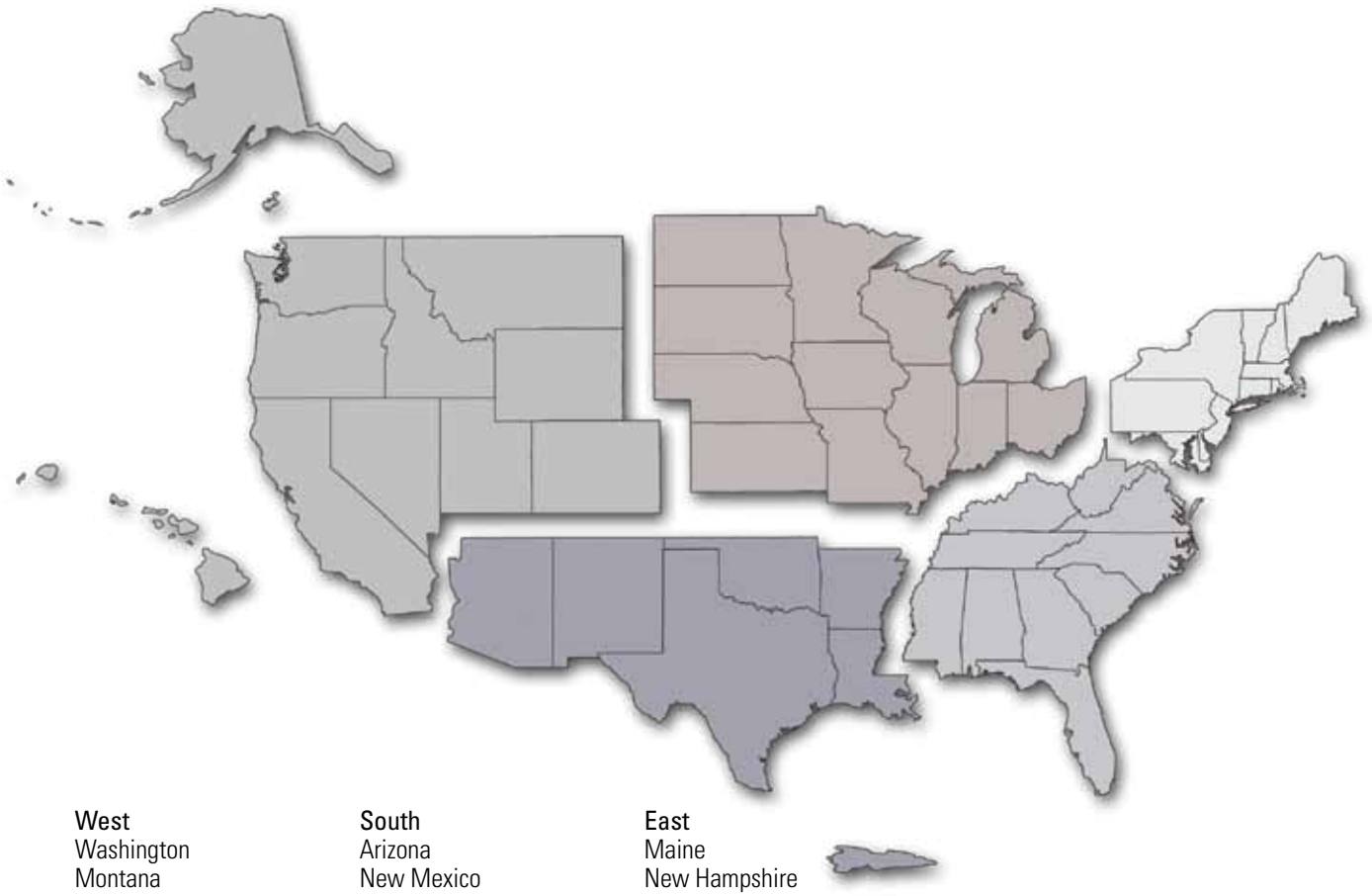
The test development process will continue well into a two-year period as the curriculum is fully installed and program options are finalized. However, analysis and results on gap score differences on the traditional analytical framework will continue as well as suggestions for testing, item remarks, and analysis are obtained from the participants.

STAFF DEVELOPMENT AND HUMAN RESOURCES

Level II performance requires that each location develop a staff development plan along with performance reviews. The Navy has an SOP format that they utilize across locations. Some of the military sponsors expect their locations to follow their base procedures and others have no formal staff review, staff development applications, or written guidelines. The area of staff development, performance reviews, and employee handbooks vary widely from one location to another depending on their sponsor relationship. Performance, in most cases, is not tied to program operations and objectives. Location directors should consider being specific about their expectations, responsibilities, program objectives, and year-end performance goals to their staff members. Where there are objectives, they are generally not tied to specific program activities or tasks to obtain during a program year, but rather more generic to instructor applications, dependability, etc. The assessment process should review this program area and develop assessment criteria that would be useful to location managers and personnel, particularly to program plans and goals.

APPENDICES

U. S. REGIONAL MAP



West
Washington
Montana
Oregon
Idaho
Wyoming
California
Nevada
Utah
Colorado
Hawaii
Alaska

Midwest
North Dakota
South Dakota
Nebraska
Kansas
Minnesota
Iowa
Wisconsin
Illinois
Michigan
Indiana
Ohio
Missouri

South
Arizona
New Mexico
Oklahoma
Texas
Arkansas
Louisiana
Puerto Rico

South East
West Virginia
Virginia
Kentucky
Tennessee
Mississippi
Alabama
Georgia
Florida
North Carolina
South Carolina

East
Maine
New Hampshire
Vermont
Pennsylvania
New York
Rhode Island
Connecticut
New Jersey
Delaware
Maryland
District of Columbia
Massachusetts

2011 DIRECTORS' QUESTIONNAIRE

Academy Information

1. Please provide this information as you would like it to appear in the annual report and participant directories.

Name of Academy	
Academy Director	
Military Affiliation	
Military Location	
Address 1	
Address 2	
City	
State	
Zip	
Telephone Number	
DSN	
Fax Number	
Fax DSN	
Email Address	
Website Address	

Base Commander

Name	
Address 1	
Address 2	
City	
State	
Zip	
Telephone Number	
Email Address	

I have reviewed the contact information and I certify that it is accurate.

Certification of Accuracy

2. Current fiscal year statistics. Please include summer students who received the complete STARBASE curriculum in the appropriate 5-day or 4-day column. In the supplemental columns, include students served in all other programs. (Do not use commas when entering data. You must fill in each box.)

Type of Program	Number of Schools	Number of Classes	Number of Students
5-Day			
4-Day			
Supplemental Programs			
Total 4- and 5-Day Programs			

Academy Information

2a. Briefly describe the supplemental programs that the academy offered. Do not include programs using the approved STARBASE curriculum.

Questions 3 through 8 refer only to 4-or 5-day curriculum-based programs. Include summer students who received the approved STARBASE curriculum.

3. Current fiscal year average class size

4. Grade levels where the approved standardized curriculum was taught.

K	1	2	3	4	5	6	7	8	9	10	11	12

5. Demographics for students taught the approved standardized curriculum in the current fiscal year.

Female	Males	Total

6. Ethnicity (Please enter a 0 for ethnic groups with no students)

American Indian or Alaskan Native	Asian	Black or African American	Hawaiian Native or Pacific Islander	Hispanic or Latino	White	Multi-Racial	TOTAL

7. Total number of students who are economically disadvantaged

Number	Percentage

8. What is your student to teacher ratio?

Students	Teacher(s)

9. Grade levels receiving supplemental programs

K	1	2	3	4	5	6	7	8	9	10	11	12

Academy Information

10. Indicate out of the 20-25 required hours, the estimated hours devoted to each topic. (Complete each box, you may use 0)

Curriculum Topic	Hours Experiential	Hours Lecture	Total Time
Sample Topic	1.25	.25	1.50
Newton's Laws of Motion			
Fluid Mechanics and Aerodynamics			
Building Blocks of Matter			
Physical and Chemical Changes			
Atmospheric Properties			
Innovations			
Navigation and Mapping			
Engineering Design Process			
3-D Computer Aided Design			
Numbers and Number Relationships			
Measurement			
Geometry			
Data Analysis			
STEM Careers on Military Facilities			
Personal Investigations			
Column Totals			
Other (Lunches, Breaks, etc.)			
Grand Total (Must equal 20 for 4-day academies and 25 for 5-day academies). Does not include embedded hours			

11. Out of the 20-25 required hours per class, indicate the number of hours spent at each location.

Military	Non-military

12. Do you have a staff training program? Choose Here

12a. If yes, please describe.

Academy Information

13. Do you provide training to local teachers? Choose Here

13a. If yes, please estimate the number of hours contributed to each topic.

Topic	Estimated Hours	When Do You Provide This Training?	Number of Teachers Served
Sample Topic	4	Late Spring	20
Continuing Education Workshops			
Local, State, National Conference Workshops			
Student-Teacher Workshops			
Experiential Training for Student Teachers			
Methods Courses through Local Universities			
Other (Please describe below)			

14. Over this past year, how often did you share/obtain materials/lessons-learned with other academies?

Share Choose Here

Share Choose Here

15. Do you provide additional curriculum materials to schools/teachers? Choose Here

15a. If yes, were they used? Choose Here

15b. If yes, what materials did you provide?

Academy Information

16. What are your TOP 3 primary sources of materials, teaching aids, curriculum, and other program operation procedures?

Choose Here

Choose Here

Choose Here

17. Current fiscal year staffing

Position	Number Full-Time	Number Part-Time	Status
Program Instructor	1	1	State Employee
Director			Choose Here
Deputy Director/ Program Director			Choose Here
Program Instructor			Choose Here
Sec./Admin. Asst./ Office Mgr.			Choose Here
Other Position (List Below			
			Choose Here
			Choose Here
			Choose Here
			Choose Here

17a. If your current staffing does not reflect the DoDI personnel model, do you have a waiver?

Choose Here

18. Current fiscal year personnel funded by non-DoD cash donations (If none, please enter 0 in the first position field)

Position	Total Number

Academy Information

19. Staff departures from last reporting cycle
(If none, please leave fields blank. To remove data, please clear all text fields and return the select fields to the "Choose Here" option.)

Position	Reason for Departure	On approximately what date did they leave?	Has the vacancy been filled?	Approximately how many weeks did it take to fill the vacancy?
	Choose Here		Choose Here	
	Choose Here		Choose Here	
	Choose Here		Choose Here	
	Choose Here		Choose Here	
	Choose Here		Choose Here	

20. Volunteer activity (Please estimate the number of volunteers and volunteer hours committed in current fiscal year)

Volunteer Group	Number of Volunteers	Number of Hours
Military		
Teachers		
Parents		
Other		

If other, please explain

21. Current program service area

Choose Here

Academy Information

22. What support services, in whole or in part, did the participating schools provide? (Mark all that apply with an "X")

- Transportation ☐
- Duplication/Printing ☐
- Audiovisual Equipment ☐
- Teachers as Monitors ☐
- Educational Supplies ☐
- Communications ☐
- Lunches ☐
- Graphics ☐
- Computers ☐
- Other (Please specify below) ☐
- ☐
- ☐
- ☐

23. In what year was your last property audit conducted?

(Note: SPECTRUM does not conduct this audit.)

Who was the auditing agent?

24. Do you have a real property listing on file? Choose Here

24a. Does it include all non-expendable property or just property at a certain dollar amount?

25. In what year was your last fiscal audit conducted?

(Note: SPECTRUM does not conduct this audit.)

Who was the auditing agent?

Academy Information

26. Did you give STARBASE presentations or meet with key participant community groups?

Choose Here

26a. Please list which groups and how often.

Group	How Often
Superintendent of Schools	
Principal	
Base Commander	
Community Leaders	
Other	

27. Do you have a Non-Profit Organization (NPO)?

Choose Here

27a. If yes, what is the function of the board of directors? (Mark all that apply with an "X"). Please note that the DoDI, paragraph 5.3.6 states that "At no time will such a local Non-Profit Organization (NPO) assume any fiduciary or legal decision-making responsibility in place of either the DoD Component or the local commander."

	X	Please identify the top 3 functions with numbers (1, 2, and 3)
Selection of schools		
Review of potential staff personnel		
Budget planning and review		
Review of recommendation of subcontractor relationships		
Grant writing/submissions		
Program planning/annual review		
Fundraising/marketing of program		
Compliance with DoDi policies and review		
Other (Please specify below)		

Academy Information

28. Please indicate which of these core documents you have on file.

Document	On File?
Staff/Students' Schedules	Choose Here
Curriculum Schedule	Choose Here
Written Job Descriptions for All Staff	Choose Here
Management Succession Manual	Choose Here
Local/State Testing Data	Choose Here
Current Plan/Program Goals	Choose Here
Memorandums of Understanding (MOU)	Choose Here
Minutes of Board Meetings	Choose Here
Bylaws and Articles of Incorporation	Choose Here
Voluntary Participation Form	Choose Here
Hold Harmless Agreement	Choose Here
Emergency Health Form	Choose Here
Public Affairs Release	Choose Here
Incident Report Form	Choose Here
Parent/Guardian Acknowledgment of Responsibility for Property Damage	Choose Here
Written Waivers from OASD/RA for All Noncompliance Issues.	Choose Here

29. Over this past program year, have any events had an effect on your program's operation (e.g. Homeland Security, Iraq information, staff turnover, weather, etc.)?

Choose Here

30a. If yes, please briefly explain the event(s) and its effect on the program.

30b. If yes, what residual consequences, if any, will the event have into the next fiscal program year?

Academy Information

30c. Is your site compliant with the Americans with Disabilities Act (ADA)?

Choose Here

If no, please discuss the actions necessary to bring your site into compliance.

31. Academy income for current fiscal year. Do not include funds received in prior fiscal years. (Do not use commas when entering data. You must fill in each green box.)

DoD Income ($)	Additional Income ($)	Total Income ($)
$	$	$

31a. Did you receive funds in prior fiscal years that were expended in the current fiscal year?

Choose Here

31b. Please list funds received in prior years that have not been expended.

Funds in Reserve	Source	Year Received
$		
$		
$		
$		

32. Current fiscal year DoD cash expenditures (October 1 - September 30) (Do not use commas when entering data. You must fill in each box.)

Category of Expenditure	Amount Expended ($)	Percentage of Total
Staff	$	
Facilities/Furnishings	$	
Transportation/Travel	$	
Supplies	$	
Equipment	$	
Contract Services	$	
Communications/ Outreach	$	
Total		
Staff Detail (include benefits)	$	
Program Director	$	
Deputy Director/ Program Instructor	$	
Program Instructor	$	
Office Manager	$	
Other	$	
Total	$	

Academy Information

32a. If you had a budget shortfall, what actions did you take to bring the budget into compliance?

33. Current fiscal year additional income expenditures (non-DoD funds expenditures) (Do not use commas when entering data. You must fill in each box.)

Category of Expenditure	Amount Expended ($)	Percentage of Total
Staff Salaries	$	
Staff Development	$	
Facilities/Furnishings	$	
Transportation/Travel	$	
Supplies	$	
Equipment	$	
Services	$	
Program/Curriculum Development	$	
Communications/ Outreach	$	
Other	$	
Total	$	

34. Current fiscal year source of additional income (Do not use commas when entering data. You must fill in each box.)

Source of Funding	Amount ($)	Percentage of Total
Grants	$	
Donations	$	
State	$	
Other (Please Specify Below)		
	$	
	$	
	$	
Total	$	

Academy Information

35. Current fiscal year in-kind donations (non-cash gifts e.g. classroom space, copies, printing, etc.) (Do not use commas when entering data. You must fill in each box.)

Donation	Source of Donation	Estimated Dollar Value
Facilities		
Furnishings		
Supplies		
Transportation/Travel		
Services		
Equipment		
Communications/ Outreach		
Other		
Total		

36.Next fiscal year projected other income (provide best estimate) (Do not use commas when entering data. You must fill in each box.)

Source of Funding	Amount ($)	Percentage of Total
Grants	$	
Donations	$	
State	$	
Other Please Specify Below)		
	$	
	$	
	$	
Total	$	

Supporting Materials & Suggestions

37. Please provide a complete list of the school districts that your site serves. Note: Please enter the full district name. For example, enter "North South Central Public Schools" rather than just "North South Central."

School Districts

38. Please provide a complete list of the schools that your site serves. For each school please select the district and school type from the drop-down menu and provide the mailing address, phone number and principal's name. Please record the phone number in the format from the example. If you do not use this format the data will not save. Note: Please enter the full school name. For example, enter "Horace Mann Elementary School" rather than just "Horace Mann."

School	District (Select from Menu)	Type of school (Select from Menu)	Principal's Name	Address	City	State	Zip	Phone Ext.

39. Please provide any suggestions regarding curriculum, operational concerns, or program imperatives.

STARBASE TEACHER QUESTIONNAIRE

All information gathered by this questionnaire is for development purposes. The information you provide will help us to continue to improve the STARBASE program. Please provide honest feedback about various issues presented in this questionnaire. We are collecting information from all of the STARBASE programs.

Completed questionnaires will be tallied by an agency outside of your school and outside of STARBASE. Individual responses will be strictly confidential and will not be released to your school or to any STARBASE representative.

This questionnaire contains 41 questions and should take less than 15 minutes to complete. If you have any questions about this survey, please call 1-312-242-4378.

Thank you,

Please enter today's date

Please enter the name of your school

What is your school's address?

Street

City, State

Zip Code

What is the name of your principal or contact person?

What grade do you teach?

other

With which STARBASE location do you work?

other

STARBASE TEACHER QUESTIONNAIRE

Select the appropriate response for each item below.

Did you ever visit a military base prior to your current STARBASE involvement?

- Never, this is my first STARBASE program.
- Yes, for prior STARBASE programs only.
- Yes, for activities not related to STARBASE.
- Yes, for STARBASE and non-STARBASE activities.
- Other

How many years have you brought students to STARBASE?

- This is my first year.
- 2-4 years
- 5-7 years
- 8-10 years
- 11-15 years
- Over 15 years

How many years have you been a teacher?

- This is my first year.
- 2-4 years
- 5-7 years
- 8-10 years
- 11-15 years
- Over 15 years

STARBASE TEACHER QUESTIONNAIRE

Is there formal communication from the school that raises community awareness of the STARBASE program?

- Yes
- No
- Don't know

Do you use DOD STARBASE materials/applications in your own classroom?

- Yes
- No

Do you have DOD STARBASE take home/follow through activities beyond your classroom presentation?

- Yes
- No

Have you recommended STARBASE to other teachers, principals, or school systems?

- Yes
- No

In your view, does the DOD STARBASE content and concepts help you reach your state requirements?

- Helps reach state requirements
- Only indirectly helps meet state requirements
- Doesn't help reach state requirements
- Doesn't fit with state requirements at all

STARBASE TEACHER QUESTIONNAIRE

Read each of the following statements and indicate your agreement with the statement by selecting the appropriate response next to each item.

After attending STARBASE, the students appear.....

	Disagree						Agree
1. ... more interested in learning about math.							
2. ... more interested in learning about science.							
3. ... more willing to try new things.							
4. ... better at following directions							
5. ... better at working in groups.							
6. ... more confident about what they can accomplish.							
7. ... more goal-oriented.							
8. ... more comfortable with military personnel.							
9. ... more comfortable making decisions.							
10. ... more excited about their futures.							
11. ... more excited about learning.							
12. ... more likely to encourage each other.							
13. ... more willing to cooperate with each other.							

Please indicate your level of agreement with these statements.

	Disagree						Agree
1. After STARBASE, the students ask more questions about technology.							
2. STARBASE has helped to improve the students' understanding of science.							
3. STARBASE has helped to improve appreciation of how math can be applied to a variety of situations.							
4. STARBASE has helped to improve the climate for participative learning in the classroom.							
5. Because of my participation in STARBASE, I am more comfortable with military personnel.							
6. The students talk about STARBASE long after the program has ended.							
7. STARBASE reinforces many positive behaviors I try to teach my students.							
8. I use the resources STARBASE provides to teachers.							
9. I would like more STARBASE resources to take back to my classroom.							
10. My principal is a strong advocate of STARBASE.							

STARBASE TEACHER QUESTIONNAIRE

	Disagree						Agree
11. My school board is very involved in supporting STARBASE.							
12. The STARBASE instructors are good role models for the students.							
13. I have included many STARBASE resources in my curriculum.							
14. The students admire their STARBASE instructors.							
15. The STARBASE curriculum supports our state standards.							
16. The children enjoy sharing their STARBASE experiences with others.							
17. Parents are delighted that their children are participating in STARBASE.							
18. The students enjoyed being on a military base.							
19. The STARBASE experience will be a positive influence on students in coming years.							
20. The STARBASE experience has been a positive influence on me personally.							
21. Students who attend STARBASE perform better on standardized state assessments.							
22. I look forward to my classes' continued participation in the STARBASE program.							
23. After STARBASE attendance, there is increased participation in the Science Fair.							

HISTORICAL COMPARISONS ACROSS YEARS (2007 - 2011)

	2007 N=222		2008 N=231		2009 N=1,497		2010 N=1,637		2011 N=1,510	
	Mean	Std Deviation	Mean	Std Deviation	Mean	Std Deviation	Mean	Std Deviation	Mean	Std Deviation
Overall Index	6.08	.81	6.14	.76	6.24	.69	6.26	.70	6.22	.72
STEM-Science, Technology, Engineering, Math	**5.95**	**.91**	**5.92**	**.90**	**6.10**	**.82**	**6.17**	**.82**	**6.16**	**.86**
STARBASE has helped improve the students' understanding of science	**6.38**	**.94**	**6.46**	**.87**	**6.61**	**.74**	**6.60**	**.74**	**6.54**	**.81**
More interested in learning about science	**6.37**	**.91**	**6.45**	**.83**	**6.54**	**.82**	**6.54**	**.79**	**6.51**	**.84**
STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	**5.93**	**1.18**	**6.07**	**1.12**	**6.12**	**1.10**	**6.23**	**1.03**	**6.26**	**1.02**
The students ask more questions about technology	**5.60**	**1.35**	**5.72**	**1.25**	**5.90**	**1.16**	**5.90**	**1.18**	**5.91**	**1.24**
More interested in learning about math	**5.43**	**1.31**	**5.70**	**1.27**	**5.67**	**1.32**	**5.77**	**1.29**	**5.79**	**1.27**
After STARBASE attendance, there is increased participation in the Science Fair	New Item	New Item	**5.14**	**1.58**	**5.53**	**1.52**	**5.78**	**1.52**	**5.66**	**1.53**
Military/Military Personnel	6.25	.89	6.36	.80	6.36	.78	6.37	.76	6.36	.79
The STARBASE instructors are good role models for the students	**6.61**	**.98**	**6.76**	**.69**	**6.84**	**.60**	**6.84**	**.59**	**6.80**	**.68**
The students enjoyed being on a military base	**6.38**	**1.15**	**6.50**	**.99**	**6.61**	**.85**	**6.63**	**.78**	**6.66**	**.75**
The students admire their STARBASE instructors	6.45	1.02	6.60	.85	6.63	.83	6.61	.83	6.62	.85
More comfortable with military personnel	5.98	1.27	6.02	1.17	5.92	1.28	5.96	1.23	5.93	1.25
Because of my participation in STARBASE, I am more comfortable with military personnel	5.85	1.39	5.90	1.47	5.91	1.50	5.95	1.49	5.92	1.48
Citizenship	5.89	.93	6.00	.95	6.06	.90	6.07	.89	5.98	.95
STARBASE reinforces many positive behaviors I try to teach my students	6.64	.80	6.70	.64	6.71	.69	6.69	.74	6.65	.83
More willing to try new things	6.05	.98	6.13	1.08	6.22	1.01	6.24	.97	6.20	.99
More excited about learning	**5.97**	**1.08**	**6.06**	**1.09**	**6.18**	**1.02**	**6.18**	**1.02**	**6.17**	**1.02**
More confident about what they can accomplish	6.00	1.04	6.10	1.00	6.10	1.03	6.13	1.01	6.05	1.09
More excited about their futures	5.90	1.16	6.10	1.08	6.06	1.07	6.06	1.06	6.01	1.12
More willing to cooperate with each other	**5.86**	**1.09**	**5.92**	**1.16**	**6.05**	**1.09**	**6.05**	**1.06**	**5.92**	**1.14**
Better at working in groups	**5.85**	**1.17**	**5.95**	**1.17**	**5.99**	**1.12**	**6.04**	**1.09**	**5.89**	**1.20**
More likely to encourage each other	**5.83**	**1.12**	**5.91**	**1.15**	**6.02**	**1.10**	**6.01**	**1.09**	**5.88**	**1.17**
More comfortable making decisions	**5.66**	**1.10**	**5.77**	**1.15**	**5.83**	**1.11**	**5.84**	**1.10**	**5.75**	**1.16**
More goal-oriented	**5.66**	**1.16**	**5.79**	**1.14**	**5.86**	**1.11**	**5.82**	**1.16**	**5.71**	**1.22**
Better at following directions	**5.41**	**1.30**	**5.63**	**1.33**	**5.66**	**1.29**	**5.67**	**1.26**	**5.57**	**1.35**
Effectiveness	6.25	.82	6.26	.71	6.41	.64	6.41	.65	6.39	.67
The children enjoy sharing their STARBASE experiences with others	**6.70**	**.80**	**6.81**	**.53**	**6.83**	**.56**	**6.83**	**.51**	**6.83**	**.59**
The STARBASE experience will be a positive influence on students in coming years	**6.68**	**.79**	**6.76**	**.60**	**6.84**	**.51**	**6.83**	**.51**	**6.82**	**.56**
I look forward to my classes' continued participation in the STARBASE program	New Item	New Item	6.79	.65	6.85	.58	6.83	.59	6.81	.71
The STARBASE curriculum supports our state standards	6.64	.85	6.59	.90	6.70	.76	6.71	.75	6.72	.77
The STARBASE experience has been a positive influence on me personally	**6.64**	**.93**	**6.58**	**.95**	**6.76**	**.69**	**6.73**	**.70**	**6.71**	**.80**
Parents are delighted that their children are participating in STARBASE	**6.43**	**1.05**	**6.43**	**.96**	**6.63**	**.80**	**6.62**	**.77**	**6.59**	**.82**
The students talk about STARBASE long after the program has ended	6.47	.97	6.62	.88	6.61	.84	6.59	.85	6.58	.86
My principal is a strong advocate of STARBASE	6.30	1.15	6.33	1.07	6.41	1.08	6.42	1.07	6.40	1.04
I would like more STARBASE resources to take back to my classroom	**6.02**	**1.44**	**6.03**	**1.46**	**6.30**	**1.24**	**6.32**	**1.20**	**6.36**	**1.19**
STARBASE has helped improve the climate for participative learning in the classroom	**5.91**	**1.12**	**6.09**	**1.12**	**6.18**	**1.05**	**6.18**	**1.06**	**6.09**	**1.13**
I use the resources STARBASE provides to teachers	5.98	1.43	6.04	1.38	6.10	1.42	6.06	1.42	6.06	1.41
Students who attend STARBASE perform better on standardized state assessments	New Item	New Item	**5.57**	**1.42**	**5.94**	**1.28**	**6.05**	**1.21**	**6.02**	**1.23**
My school board is very involved in supporting STARBASE	**5.59**	**1.57**	**5.53**	**1.55**	**5.73**	**1.66**	**5.88**	**1.52**	**5.74**	**1.60**
I have included many STARBASE resources in my curriculum	5.59	1.57	5.57	1.59	5.82	1.51	5.75	1.52	5.72	1.48

Bolded items represent statistically significant differences in sample group means across years.

PEARSON CORRELATION MATRIX FOR TEACHER SURVEY

		1	2	3	4	5	6	7	8	9
1	What grade do you teach?	1.00								
2	Visit military base before STARBASE?	.02	1.00							
3	# of years I have been involved with STARBASE	.03	.20**	1.00						
4	# of years I have been a teacher	.01	.09**	.37**	1.00					
5	More interested in learning about math	.00	.07**	.15**	.17**	1.00				
6	More interested in learning about science	-.03	.00	.13**	.12**	.61**	1.00			
7	More willing to try new things	.02	.02	.13**	.15**	.66**	.63**	1.00		
8	Better at following directions	.05	.03	.18**	.20**	.63**	.54**	.67**	1.00	
9	Better at working in groups	.06*	.04	.15**	.15**	.60**	.56**	.64**	.82**	1.00
10	More confident about what they can accomplish	.03	.03	.11**	.13**	.62**	.61**	.71**	.73**	.78**
11	More goal-oriented	.03	.03	.15**	.15**	.66**	.58**	.68**	.75**	.73**
12	More comfortable with military personnel	.07**	.06*	.16**	.15**	.43**	.44**	.44**	.45**	.46**
13	More comfortable making decisions	.03	.03	.16**	.15**	.64**	.55**	.66**	.74**	.74**
14	More excited about their futures	.02	.03	.11**	.14**	.59**	.59**	.61**	.62**	.61**
15	More excited about learning	.03	.03	.13**	.13**	.62**	.66**	.68**	.66**	.67**
16	More likely to encourage each other	.04	.03	.14**	.17**	.60**	.57**	.65**	.71**	.76**
17	More willing to cooperate with each other	.05	.00	.13**	.16**	.60**	.57**	.65**	.74**	.80**
18	The students ask more questions about technology	.06*	.04	.10**	.10**	.59**	.57**	.58**	.55**	.56**
19	STARBASE has helped improve the students' understanding of science	.03	.01	.12**	.11**	.49**	.68**	.58**	.48**	.53**
20	STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	-.02	.04	.11**	.14**	.68**	.57**	.59**	.54**	.56**
21	STARBASE has helped improve the climate for participative learning in the classroom	.03	.04	.14**	.18**	.61**	.60**	.66**	.66**	.71**
22	Because of my participation in STARBASE, I am more comfortable with military personnel	.03	-.06*	.14**	.14**	.38**	.35**	.40**	.41**	.41**
23	The students talk about STARBASE long after the program has ended	.00	.00	.19**	.13**	.41**	.51**	.45**	.42**	.40**
24	STARBASE reinforces many positive behaviors I try to teach my students	.00	.01	.15**	.15**	.44**	.55**	.50**	.48**	.48**
25	I use the resources STARBASE provides to teachers	.04	.03	.13**	.13**	.40**	.42**	.46**	.45**	.44**
26	I would like more STARBASE resources to take back to my classroom	.02	-.02	-.01	.03	.24**	.34**	.28**	.27**	.29**
27	My principal is a strong advocate of STARBASE	-.01	.03	.08**	.09**	.32**	.41**	.37**	.34**	.37**
28	My school board is very involved in supporting STARBASE	-.00	.02	.10**	.09**	.32**	.26**	.34**	.29**	.28**
29	The STARBASE instructors are good role models for the students	-.03	.01	.09**	.10**	.29**	.40**	.35**	.29**	.31**
30	I have included many STARBASE resources in my curriculum	.07*	.05*	.18**	.15**	.42**	.40**	.43**	.42**	.41**
31	The students admire their STARBASE instructors	-.07*	.00	.12**	.13**	.39**	.45**	.45**	.37**	.39**
32	The STARBASE curriculum supports our state standards	.00	-.01	.09**	.09**	.35**	.43**	.37**	.35**	.36**
33	The children enjoy sharing their STARBASE experiences with others	-.04	-.05	.09**	.08**	.33**	.47**	.41**	.32**	.34**
34	Parents are delighted that their children are participating in STARBASE	.00	.03	.11**	.05	.34**	.42**	.41**	.37**	.35**
35	The students enjoyed being on a military base	.02	.00	.10**	.08**	.33**	.35**	.35**	.31**	.31**
36	The STARBASE experience will be a positive influence on students in coming years	.01	-.01	.09**	.07**	.36**	.48**	.46**	.38**	.41**
37	The STARBASE experience has been a positive influence on me personally	.01	-.01	.09**	.11**	.39**	.45**	.43**	.39**	.42**
38	Students who attend STARBASE perform better on standardized state assessments	.02	.03	.12**	.13**	.53**	.46**	.51**	.54**	.51**
39	I look forward to my classes' continued participation in the STARBASE program	.00	-.03	.09**	.07**	.32**	.47**	.39**	.34**	.35**
40	After STARBASE attendance, there is increased participation in the Science Fair	.06	.01	.06	.05	.41**	.36**	.42**	.40**	.41**

** Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed). [a]Only teachers who reported teaching grades 3 through 8 were included (N=1,375)*

PEARSON CORRELATION MATRIX FOR TEACHER SURVEY

		10	11	12	13	14	15	16	17	18
1	What grade do you teach?									
2	Visit military base before STARBASE?									
3	# of years I have been involved with STARBASE									
4	# of years I have been a teacher									
5	More interested in learning about math									
6	More interested in learning about science									
7	More willing to try new things									
8	Better at following directions									
9	Better at working in groups									
10	More confident about what they can accomplish	1.00								
11	More goal-oriented	.79**	1.00							
12	More comfortable with military personnel	.51**	.52**	1.00						
13	More comfortable making decisions	.77**	.82**	.61**	1.00					
14	More excited about their futures	.68**	.73**	.57**	.72**	1.00				
15	More excited about learning	.73**	.73**	.50**	.72**	.74**	1.00			
16	More likely to encourage each other	.74**	.73**	.53**	.77**	.70**	.76**	1.00		
17	More willing to cooperate with each other	.74**	.75**	.50**	.77**	.68**	.74**	.90**	1.00	
18	The students ask more questions about technology	.59**	.61**	.45**	.59**	.62**	.60**	.60**	.59**	1.00
19	STARBASE has helped improve the students' understanding of science	.59**	.55**	.46**	.54**	.56**	.62**	.55**	.55**	.59**
20	STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	.61**	.61**	.43**	.60**	.58**	.61**	.60**	.60**	.61**
21	STARBASE has helped improve the climate for participative learning in the classroom	.70**	.68**	.50**	.68**	.64**	.68**	.74**	.74**	.64**
22	Because of my participation in STARBASE, I am more comfortable with military personnel	.41**	.42**	.56**	.48**	.43**	.41**	.43**	.45**	.42**
23	The students talk about STARBASE long after the program has ended	.44**	.42**	.39**	.42**	.45**	.50**	.46**	.44**	.48**
24	STARBASE reinforces many positive behaviors I try to teach my students	.52**	.49**	.37**	.49**	.50**	.55**	.49**	.49**	.50**
25	I use the resources STARBASE provides to teachers	.43**	.45**	.37**	.45**	.43**	.45**	.44**	.45**	.48**
26	I would like more STARBASE resources to take back to my classroom	.29**	.31**	.23**	.27**	.28**	.30**	.28**	.30**	.34**
27	My principal is a strong advocate of STARBASE	.38**	.38**	.32**	.36**	.34**	.36**	.37**	.39**	.36**
28	My school board is very involved in supporting STARBASE	.33**	.35**	.30**	.35**	.30**	.30**	.29**	.32**	.32**
29	The STARBASE instructors are good role models for the students	.36**	.30**	.34**	.32**	.32**	.33**	.32**	.31**	.31**
30	I have included many STARBASE resources in my curriculum	.42**	.42**	.36**	.43**	.41**	.40**	.40**	.42**	.47**
31	The students admire their STARBASE instructors	.45**	.39**	.40**	.42**	.42**	.45**	.45**	.42**	.42**
32	The STARBASE curriculum supports our state standards	.39**	.36**	.31**	.36**	.36**	.36**	.38**	.39**	.37**
33	The children enjoy sharing their STARBASE experiences with others	.39**	.35**	.36**	.34**	.39**	.43**	.38**	.36**	.39**
34	Parents are delighted that their children are participating in STARBASE	.42**	.40**	.39**	.39**	.41**	.44**	.43**	.40**	.38**
35	The students enjoyed being on a military base	.34**	.36**	.43**	.36**	.37**	.36**	.33**	.32**	.36**
36	The STARBASE experience will be a positive influence on students in coming years	.45**	.39**	.36**	.40**	.40**	.46**	.42**	.41**	.39**
37	The STARBASE experience has been a positive influence on me personally	.45**	.41**	.34**	.41**	.41**	.44**	.44**	.44**	.42**
38	Students who attend STARBASE perform better on standardized state assessments	.55**	.58**	.45**	.57**	.52**	.54**	.56**	.57**	.53**
39	I look forward to my classes' continued participation in the STARBASE program	.38**	.36**	.31**	.35**	.36**	.37**	.35**	.36**	.40**
40	After STARBASE attendance, there is increased participation in the Science Fair	.40**	.44**	.38**	.44**	.40**	.40**	.44**	.43**	.44**

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

PEARSON CORRELATION MATRIX FOR TEACHER SURVEY

		19	20	21	22	23	24	26	27	28
1	What grade do you teach?									
2	Visit military base before STARBASE?									
3	# of years I have been involved with STARBASE									
4	# of years I have been a teacher									
5	More interested in learning about math									
6	More interested in learning about science									
7	More willing to try new things									
8	Better at following directions									
9	Better at working in groups									
10	More confident about what they can accomplish									
11	More goal oriented									
12	More comfortable with military personnel									
13	More comfortable making decisions									
14	More excited about their futures									
15	More excited about learning									
16	More likely to encourage each other									
17	More willing to cooperate with each other									
18	The students ask more questions about technology									
19	STARBASE has helped improve the students' understanding of science	1.00								
20	STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	.70**	1.00							
21	STARBASE has helped improve the climate for participative learning in the classroom	.66**	.70**	1.00						
22	Because of my participation in STARBASE, I am more comfortable with military personnel	.41**	.41**	.48**	1.00					
23	The students talk about STARBASE long after the program has ended	.54**	.47**	.51**	.35**	1.00				
24	STARBASE reinforces many positive behaviors I try to teach my students	.62**	.57**	.59**	.37**	.61**	1.00			
25	I use the resources STARBASE provides to teachers	.42**	.44**	.50**	.37**	.40**	.47**	1.00		
26	I would like more STARBASE resources to take back to my classroom	.32**	.30**	.34**	.28**	.27**	.28**	.45**	1.00	
27	My principal is a strong advocate of STARBASE	.41**	.38**	.40**	.28**	.37**	.38**	.41**	.33**	1.00
28	My school board is very involved in supporting STARBASE	.30**	.33**	.32**	.29**	.25**	.24**	.32**	.21**	.40**
29	The STARBASE instructors are good role models for the students	.44**	.37**	.37**	.30**	.42**	.57**	.28**	.20**	.32**
30	I have included many STARBASE resources in my curriculum	.37**	.40**	.47**	.34**	.34**	.37**	.67**	.37**	.36**
31	The students admire their STARBASE instructors	.49**	.46**	.46**	.37**	.47**	.52**	.34**	.21**	.33**
32	The STARBASE curriculum supports our state standards	.47**	.42**	.41**	.32**	.38**	.44**	.39**	.25**	.34**
33	The children enjoy sharing their STARBASE experiences with others	.50**	.40**	.42**	.32**	.56**	.54**	.32**	.22**	.31**
34	Parents are delighted that their children are participating in STARBASE	.44**	.41**	.43**	.33**	.47**	.43**	.34**	.22**	.38**
35	The students enjoyed being on a military base	.40**	.41**	.38**	.40**	.35**	.42**	.29**	.21**	.29**
36	The STARBASE experience will be a positive influence on students in coming years	.54**	.46**	.48**	.35**	.47**	.57**	.34**	.24**	.34**
37	The STARBASE experience has been a positive influence on me personally	.51**	.47**	.51**	.41**	.47**	.59**	.41**	.29**	.33**
38	Students who attend STARBASE perform better on standardized state assessments	.49**	.49**	.57**	.45**	.39**	.47**	.42**	.35**	.33**
39	I look forward to my classes' continued participation in the STARBASE program	.47**	.41**	.41**	.32**	.48**	.55**	.40**	.30**	.39**
40	After STARBASE attendance, there is increased participation in the Science Fair	.35**	.41**	.45**	.43**	.29**	.29**	.40**	.31**	.33**

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

PEARSON CORRELATION MATRIX FOR TEACHER SURVEY

		28	29	30	31	32	33	34	35	36
1	What grade do you teach?									
2	Visit military base before STARBASE?									
3	# of years I have been involved with STARBASE									
4	# of years I have been a teacher for									
5	More interested in learning about math									
6	More interested in learning about science									
7	More willing to try new things									
8	Better at following directions									
9	Better at working in groups									
10	More confident about what they can accomplish									
11	More goal-oriented									
12	More comfortable with military personnel									
13	More comfortable making decisions									
14	More excited about their futures									
15	More excited about learning									
16	More likely to encourage each other									
17	More willing to cooperate with each other									
18	The students ask more questions about technology									
19	STARBASE has helped improve the students' understanding of science									
20	STARBASE has helped to improve appreciation of how math can be applied to a variety of situations									
21	STARBASE has helped improve the climate for participative learning in the classroom									
22	Because of my participation in STARBASE, I am more comfortable with military personnel									
23	The students talk about STARBASE long after the program has ended									
24	STARBASE reinforces many positive behaviors I try to teach my students									
25	I use the resources STARBASE provides to teachers									
26	I would like more STARBASE resources to take back to my classroom									
27	My principal is a strong advocate of STARBASE									
28	My school board is very involved in supporting STARBASE	1.00								
29	The STARBASE instructors are good role models for the students	.27**	1.00							
30	I have included many STARBASE resources in my curriculum	.38**	.29**	1.00						
31	The students admire their STARBASE instructors	.36**	.71**	.35**	1.00					
32	The STARBASE curriculum supports our state standards	.31**	.37**	.40**	.43**	1.00				
33	The children enjoy sharing their STARBASE experiences with others	.25**	.60**	.30**	.57**	.47**	1.00			
34	Parents are delighted that their children are participating in STARBASE	.34**	.43**	.38**	.50**	.37**	.57**	1.00		
35	The students enjoyed being on a military base	.31**	.46**	.28**	.45**	.32**	.44**	.54**	1.00	
36	The STARBASE experience will be a positive influence on students in coming years	.30**	.65**	.32**	.61**	.44**	.64**	.55**	.57**	1.00
37	The STARBASE experience has been a positive influence on me personally	.28**	.59**	.38**	.56**	.45**	.58**	.48**	.49**	.69**
38	Students who attend STARBASE perform better on standardized state assessments	.41**	.37**	.46**	.43**	.45**	.41**	.43**	.41**	.46**
39	I look forward to my classes' continued participation in the STARBASE program	.29**	.58**	.37**	.53**	.47**	.54**	.44**	.39**	.59**
40	After STARBASE attendance, there is increased participation in the Science Fair	.43**	.30**	.46**	.36**	.38**	.34**	.40**	.37**	.38**

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

PEARSON CORRELATION MATRIX FOR TEACHER SURVEY

		37	38	39	40					
1	What grade do you teach?									
2	Visit military base before STARBASE?									
3	# of years I have been involved with STARBASE									
4	# of years I have been a teacher for									
5	More interested in learning about math									
6	More interested in learning about science									
7	More willing to try new things									
8	Better at following directions									
9	Better at working in groups									
10	More confident about what they can accomplish									
11	More goal-oriented									
12	More comfortable with military personnel									
13	More comfortable making decisions									
14	More excited about their futures									
15	More excited about learning									
16	More likely to encourage each other									
17	More willing to cooperate with each other									
18	The students ask more questions about technology									
19	STARBASE has helped improve the students' understanding of science									
20	STARBASE has helped to improve appreciation of how math can be applied to a variety of situations									
21	STARBASE has helped improve the climate for participative learning in the classroom									
22	Because of my participation in STARBASE, I am more comfortable with military personnel									
23	The students talk about STARBASE long after the program has ended									
24	STARBASE reinforces many positive behaviors I try to teach my students									
25	I use the resources STARBASE provides to teachers									
26	I would like more STARBASE resources to take back to my classroom									
27	My principal is a strong advocate of STARBASE									
28	My school board is very involved in supporting STARBASE									
29	The STARBASE instructors are good role models for the students									
30	I have included many STARBASE resources in my curriculum									
31	The students admire their STARBASE instructors									
32	The STARBASE curriculum supports our state standards									
33	The children enjoy sharing their STARBASE experiences with others									
34	Parents are delighted that their children are participating in STARBASE									
35	The students enjoyed being on a military base									
36	The STARBASE experience will be a positive influence on students in coming years									
37	The STARBASE experience has been a positive influence on me personally	1.00								
38	Students who attend STARBASE perform better on standardized state assessments	.55**	1.00							
39	I look forward to my classes' continued participation in the STARBASE program	.67**	.47**	1.00						
40	After STARBASE attendance, there is increased participation in the Science Fair	.44**	.59**	.43**	1.00					

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

LOCATIONS ACROSS DOD STARBASE REGIONS

East	Southeast	Midwest	South	West
Connecticut, Hartford	Alabama, Montgomery	Illinois, Great Lakes	Arizona, Tucson	Alaska, Anchorage
Connecticut, Waterbury	Florida, Jacksonville	Kansas, Kansas City	Louisiana, Barksdale	California, Sacramento
District of Columbia, Washington	Florida, Pensacola	Kansas, Salina	Louisiana, Pineville	California, San Diego
Maine, Bangor	Florida, Pensacola - Whiting Field	Kansas, Topeka	New Mexico, La Luz	Hawaii, Pearl Harbor
Maryland, Patuxent River	Georgia, Atlanta - Dobbins	Kansas, Wichita Falls	Oklahoma, Oklahoma City	Montana, Helena
Pennsylvania, Pittsburgh	Georgia, Macon - Robins	Michigan, Battle Creek	Oklahoma, Tulsa	Oregon, Klamath Falls
Rhode Island, Newport	Mississippi, Gulfport	Michigan, Selfridge	Oklahoma, Tulsa - NAI	Oregon, Portland
Vermont, Rutland	Mississippi, Meridian	Minnesota, St. Paul	Puerto Rico, Carolina	Washington, Silverdale
Vermont, South Burlington	Mississippi, Choctaw Indian Reservation	Nebraska, Lincoln	Texas, Corpus Christi	Wyoming, Cheyenne
	North Carolina, Charlotte	North Dakota, Minot	Texas, Houston	
	North Carolina, Kure Beach	Ohio, Wright-Patterson	Texas, San Antonio	
	South Carolina, Beaufort	South Dakota, Rapid City		
	South Carolina, Columbia	South Dakota, Sioux Falls		
	Virginia, Norfolk	South Dakota, Sioux Falls - Project NOVA		
	West Virginia, Charleston			
	West Virginia, Martinsburg			

LOCATION BASED ON MILITARY BRANCH

Air Force

Alabama, Montgomery
Arizona, Tucson
New Mexico, La Luz
North Dakota, Minot
Ohio, Wright-Patterson

Air Force Reserves

Georgia, Macon - Robins
Louisiana, Barksdale
Texas, San Antonio

Marines

South Carolina, Beaufort

National Guard

Alaska, Anchorage
California, Sacramento
Connecticut, Hartford
Connecticut, Waterbury
Florida, Jacksonville
Georgia, Atlanta - Dobbins
Kansas, Kansas City
Kansas, Salina
Kansas, Topeka
Kansas, Wichita Falls
Louisiana, Pineville
Maine, Bangor
Michigan, Battle Creek
Michigan, Selfridge
Minnesota, St Paul
Mississippi, Meridian
Montana, Helena
Nebraska, Lincoln
North Carolina, Charlotte
North Carolina, Kure Beach
Oklahoma, Oklahoma City
Oklahoma, Tulsa
Oklahoma, Tulsa - NAI
Oregon, Klamath Falls
Oregon, Portland
Puerto Rico, Carolina
South Carolina, Columbia
South Dakota, Rapid City
South Dakota, Sioux Falls
South Dakota, Sioux Falls - Project NOVA
Texas, Houston
Vermont, Rutland
Vermont, South Burlington
West Virginia, Charleston
West Virginia, Martinsburg
Wyoming, Cheyenne

Navy

California, San Diego
District of Columbia, Washington
Florida, Pensacola
Florida, Pensacola - Whiting Field
Hawaii, Pearl Harbor
Illinois, Great Lakes
Maryland, Patuxent River
Mississippi, Gulfport
Mississippi, Choctaw Indian Reservation
Pennsylvania, Pittsburgh
Rhode Island, Newport
Texas, Corpus Christi
Virginia, Norfolk
Washington, Silverdale


Tiger
Cam
STEM

HISTORICAL MEAN COMPARISONS ACROSS SERVICE ARMS AND REGION

	Branch				Region				
	Air Force	Air Force Reserves	National Guard	Navy	East	South East	Midwest	South	West
SAMPLE SIZE	**114**	**110**	**997**	**278**	**174**	**322**	**442**	**360**	**202**
Overall Index	**6.20**	**6.11**	**6.26**	**6.15**	**6.19**	**6.20**	**6.15**	**6.36**	**6.19**
STEM-Science, Technology, Engineering, & Math	**6.04**	**6.08**	**6.21**	**6.06**	**6.13**	**6.09**	**6.12**	**6.29**	**6.18**
STARBASE has helped improve the students' understanding of science	**6.43**	**6.43**	**6.62**	**6.39**	**6.57**	**6.43**	**6.50**	**6.61**	**6.70**
More interested in learning about science	**6.39**	**6.33**	**6.57**	**6.42**	6.56	6.45	6.50	6.52	6.58
STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	6.13	6.25	6.33	6.13	6.22	6.18	6.29	6.39	6.19
The students ask more questions about technology	5.75	5.81	5.96	5.85	**5.94**	**5.89**	**5.76**	**6.11**	**5.88**
More interested in learning about math	5.78	5.82	5.80	5.78	5.71	5.75	5.78	5.90	5.77
After STARBASE attendance, there is increased participation in the Science Fair	5.39	5.61	5.74	5.62	**5.24**	**5.66**	**5.55**	**5.99**	**5.61**
Military/Military Personnel/Military Careers	6.27	6.30	6.36	6.40	6.28	6.42	6.32	6.45	6.24
The STARBASE instructors are good role models for the students	**6.74**	**6.62**	**6.84**	**6.79**	6.91	6.77	6.83	6.79	6.77
The students enjoyed being on a military base	6.61	6.69	6.66	6.67	**6.60**	**6.72**	**6.62**	**6.73**	**6.57**
The students admire their STARBASE instructors	**6.39**	**6.51**	**6.63**	**6.74**	**6.76**	**6.67**	**6.60**	**6.62**	**6.49**
More comfortable with military personnel	5.96	5.92	5.91	6.05	**5.64**	**6.08**	**5.88**	**6.08**	**5.85**
Because of my participation in STARBASE, I am more comfortable with military personnel	5.75	5.91	5.96	5.89	**5.72**	**6.00**	**5.82**	**6.19**	**5.75**
Citizenship and Pro-social Attitudes	6.05	5.87	6.02	5.88	**5.97**	**5.92**	**5.89**	**6.19**	**5.94**
STARBASE reinforces many positive behaviors I try to teach my students	**6.60**	**6.44**	**6.72**	**6.52**	**6.77**	**6.54**	**6.63**	**6.70**	**6.70**
More willing to try new things	6.18	6.13	6.23	6.16	**6.18**	**6.22**	**6.10**	**6.39**	**6.09**
More excited about learning	6.22	6.07	6.20	6.10	**6.21**	**6.07**	**6.11**	**6.34**	**6.14**
More confident about what they can accomplish	6.18	5.94	6.07	5.97	**6.06**	**6.01**	**5.94**	**6.26**	**5.99**
More excited about their futures	6.10	6.02	6.01	6.01	**5.91**	**5.93**	**5.94**	**6.26**	**6.00**
More willing to cooperate with each other	**6.03**	**5.75**	**5.98**	**5.74**	**5.95**	**5.83**	**5.81**	**6.14**	**5.88**
Better at working in groups	**6.03**	**5.68**	**5.95**	**5.73**	**5.89**	**5.82**	**5.78**	**6.09**	**5.92**
More likely to encourage each other	5.89	5.77	5.92	5.78	**5.90**	**5.86**	**5.75**	**6.09**	**5.81**
More comfortable making decisions	5.75	5.72	5.79	5.65	**5.67**	**5.70**	**5.66**	**6.01**	**5.66**
More goal-oriented	5.80	5.74	5.73	5.59	**5.64**	**5.61**	**5.58**	**6.04**	**5.61**
Better at following directions	**5.75**	**5.29**	**5.64**	**5.39**	**5.53**	**5.50**	**5.48**	**5.79**	**5.53**
STARBASE Effectiveness/Impact	**6.38**	**6.26**	**6.43**	**6.31**	**6.37**	**6.40**	**6.30**	**6.50**	**6.39**
The children enjoy sharing their STARBASE experiences with others	**6.86**	**6.69**	**6.85**	**6.81**	6.90	6.83	6.85	6.81	6.78

HISTORICAL MEAN COMPARISONS ACROSS SERVICE ARMS AND REGION (Cont.)

	Branch				Region				
	Air Force	Air Force Reserves	National Guard	Navy	East	South East	Midwest	South	West
The STARBASE experience will be a positive influence on students in coming years	6.78	6.77	6.84	6.82	6.83	6.83	6.82	6.84	6.78
I look forward to my classes' continued participation in the STARBASE program	**6.65**	**6.63**	**6.86**	**6.79**	6.85	6.78	6.77	6.83	6.87
The STARBASE curriculum supports our state standards	**6.50**	**6.65**	**6.78**	**6.60**	6.65	6.74	6.69	6.72	6.80
The STARBASE experience has been a positive influence on me personally	**6.61**	**6.47**	**6.76**	**6.70**	6.76	6.67	6.70	6.77	6.70
Parents are delighted that their children are participating in STARBASE	6.64	6.39	6.62	6.57	6.61	6.58	6.64	6.58	6.51
The students talk about STARBASE long after the program has ended	**6.61**	**6.28**	**6.66**	**6.44**	6.68	6.50	6.58	6.62	6.58
My principal is a strong advocate of STARBASE	**6.42**	**6.26**	**6.45**	**6.23**	6.48	6.37	6.33	6.48	6.34
I would like more STARBASE resources to take back to my classroom	**6.39**	**5.87**	**6.48**	**6.10**	**6.13**	**6.29**	**6.29**	**6.57**	**6.42**
STARBASE has helped improve the climate for participative learning in the classroom	6.11	6.05	6.13	6.00	**6.10**	**6.07**	**5.92**	**6.34**	**6.12**
I use the resources STARBASE provides to teachers	6.06	5.83	6.09	6.05	**6.18**	**6.09**	**5.77**	**6.25**	**6.21**
Students who attend STARBASE perform better on standardized state assessments	5.91	5.94	6.06	5.94	**5.73**	**6.12**	**5.88**	**6.35**	**5.85**
My school board is very involved in supporting STARBASE	**5.96**	**6.14**	**5.70**	**5.64**	**5.51**	**6.02**	**5.54**	**6.00**	**5.42**
I have included many STARBASE resources in my curriculum	5.73	5.62	5.74	5.71	**5.83**	**5.72**	**5.37**	**6.00**	**5.92**

Bolded items represent statistically significant difference in means

Pre-Flight and Post-Flight Questionnaire 2011

ASSIGNED STUDENT NUMBER

0 0 0 0 0 0 0
1 1 1 1 1 1 1
2 2 2 2 2 2 2
3 3 3 3 3 3 3
4 4 4 4 4 4 4
5 5 5 5 5 5 5
6 6 6 6 6 6 6
7 7 7 7 7 7 7
8 8 8 8 8 8 8
9 9 9 9 9 9 9

My school grade is: 1 2 3 4 5 6 7 8 9

My age is: 0 0 / 1 1 / 2 3 4 5 6 7 8 9

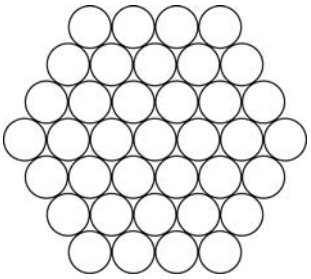
I am a: ○ Boy ○ Girl

I have met military people before coming to STARBASE. (N) No (Y) Yes

I heard about STARBASE before I knew I was coming here. (N) No (Y) Yes

I know someone that went through STARBASE before me. (N) No (Y) Yes

1. The diagram below shows one possible way that matter can be composed of molecules. What state of matter is shown by the molecules in the diagram?



(A) Liquid
(B) Solid
(C) Gas
(D) Plasma

2. Which of the following is an example of a compound molecule?
(A) Li (lithium)
(B) O_2 (oxygen)
(C) KCl (potassium chloride)
(D) Fe (iron)

3. Which of the following is an example of physical change?
(A) Mixing baking soda and vinegar together producing bubbles and foam.
(B) Knocking a glass cup off the counter that results in it shattering on the floor.
(C) Lighting a piece of paper on fire producing ashes.
(D) Mixing ingredients and baking a cake.

4. On hot days potato chip bags seem to "inflate", even though they have not been opened. What causes this?
(A) The air pressure inside the bag increases with the increase in temperature.
(B) The volume of the bag decreases with the increase in temperature.
(C) The increased temperature decreases the kinetic energy of the air inside the bag.
(D) The increased temperature decreases the velocity of the air inside the bag.

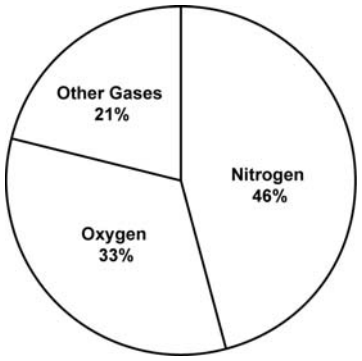
Wait for your instructor to read the directions and questions.

PLEASE DO NOT WRITE IN THIS AREA

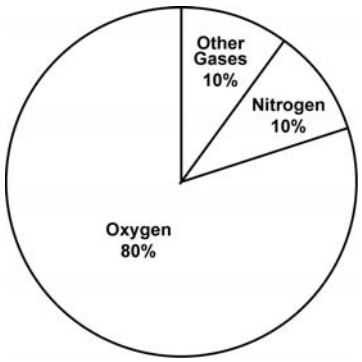
[SERIAL]

5. Which pie chart represents the correct composition of air?

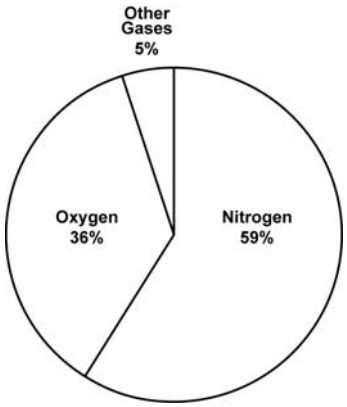
Ⓐ



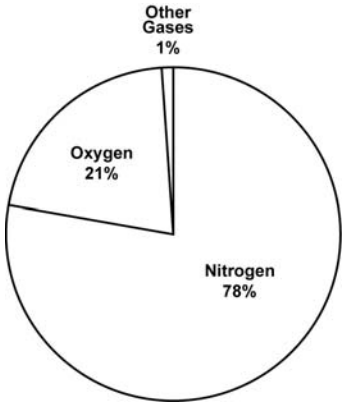
Ⓑ



Ⓒ



Ⓓ

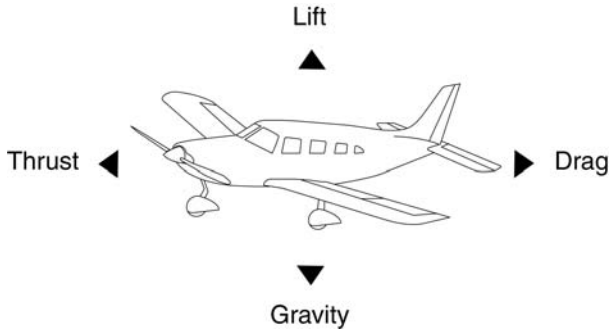


6. Air presses down 14.7 pounds on every inch of our bodies. Why don't we feel this pressure?

Ⓐ The atmosphere cushions the weight of the air.
Ⓑ Our bodies push out 14.7 pounds on every inch to equalize the pressure.
Ⓒ We are inside a building, so we don't feel it.
Ⓓ The air is thinner closer to the ground than up in space.

7. Based on Bernoulli's Principle, what happens when air or water is forced between two objects?

Ⓐ The objects will move away from each other.
Ⓑ The objects will move towards each other.
Ⓒ The objects will not move since the air or water is not hitting them directly.
Ⓓ The movement of the objects depends on the strength of the force exerted.



8. A plane sits on a runway in a state of rest. Of the four main forces that act on aircraft, which one is most likely to cause the forward motion as an airplane moves along a runway?

Ⓐ Lift
Ⓑ Thrust
Ⓒ Gravity
Ⓓ Drag

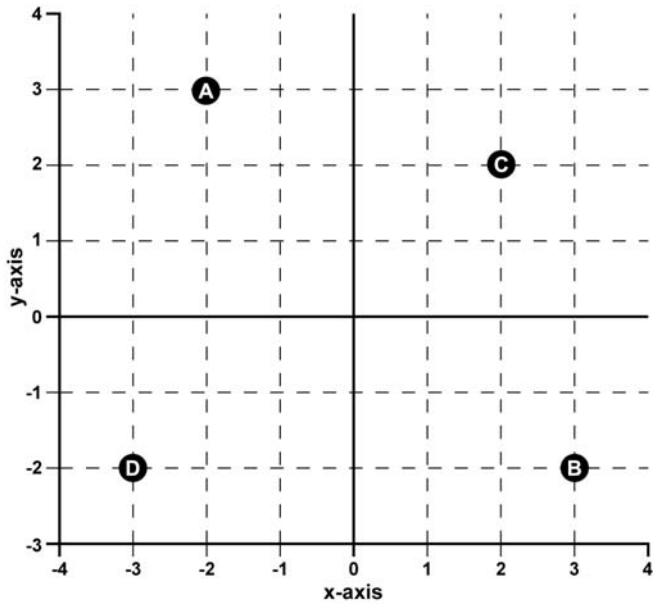
9. Once the airplane is airborne and at a constant state of motion, which force is equal to the force of thrust?

Ⓐ Lift
Ⓑ Gravity
Ⓒ Drag
Ⓓ None of the above

Wait for your instructor to read the directions and questions.

10. An experiment calls for 150 milliliters of water. If you are performing the experiment three times, what is the total amount of water you will need?

- Ⓐ 300 milliliters
- Ⓑ 350 milliliters
- Ⓒ 400 milliliters
- Ⓓ 450 milliliters



11. In the graph above, find the letter that is at coordinates (3, -2). Is it A, B, C, or D?

- Ⓐ A
- Ⓑ B
- Ⓒ C
- Ⓓ D

12. When measuring the amount of liquid in a bottle of water, what unit of measurement is most commonly used?

- Ⓐ Meter
- Ⓑ Gram
- Ⓒ Liter
- Ⓓ Celsius

13. A red blood cell is about 10,000 nanometers in diameter. What would this be in meters?

- Ⓐ 1×10^{-13} meters
- Ⓑ 1×10^{-9} meters
- Ⓒ 1×10^{-5} meters
- Ⓓ 1×10^{-3} meters

14. One reason an airplane is able to gain lift is because the air moving across the top of the wing....

- Ⓐ exerts less pressure than the air moving along the bottom.
- Ⓑ exerts more pressure than the air moving along the bottom.
- Ⓒ exerts the same amount of pressure as air moving along the bottom.
- Ⓓ does not exert any pressure on the wing.

15. What scientific law is operating that makes it important to wear a seat belt?

- Ⓐ Newton's Law of Inertia which explains that the greater the mass of an object, the greater the force needed to accelerate it.
- Ⓑ Newton's Law of Inertia which explains that an object in motion will stay in motion unless acted upon by an outside force.
- Ⓒ Newton's Third Law of Motion that states for every action there is an equal and opposite reaction.
- Ⓓ Newton's Second Law of Motion that states that acceleration of an object increases as the amount of force causing the acceleration increases when mass is constant.

16. If you launched two rockets, one with a mass of 50 grams and one with a mass of 100 grams, using the same amount of force, which rocket would go highest?

- Ⓐ The heavier rocket would go the highest.
- Ⓑ The lighter rocket would go the highest.
- Ⓒ The two rockets would go the same height.
- Ⓓ The heavier rocket would go twice as high as the lighter rocket.

17. In what state of matter do molecules have the least amount of energy or motion?

- Ⓐ Solid
- Ⓑ Liquid
- Ⓒ Gas
- Ⓓ Plasma

18. Which of the following has properties similar to the properties of air?

- Ⓐ A truckload of sand
- Ⓑ A sea of water
- Ⓒ A hunk of aluminum metal
- Ⓓ A field of grass

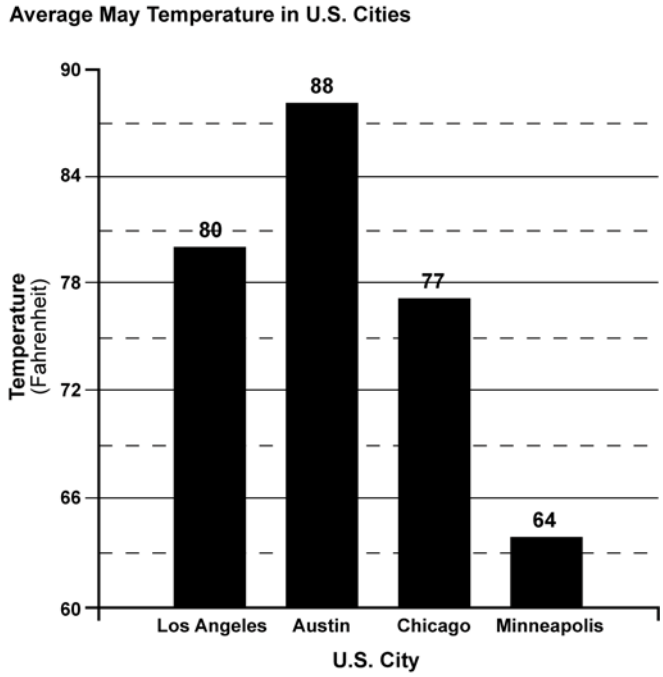
Wait for your instructor to read the directions and questions.

PLEASE DO NOT WRITE IN THIS AREA

[SERIAL]

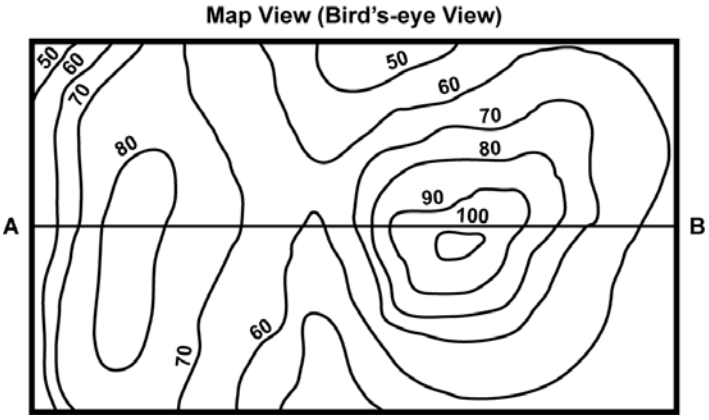
19. A student wants to find out which type of sponge holds the most water. He uses four identical containers with holes in the bottom. He puts a different type of sponge in each container and pours the same amount of water in each container. How can he find out how much water each sponge absorbs?

- (A) By measuring the size of the sponge before and after adding water to each container.
- (B) By measuring the amount of water that drains from each container.
- (C) By observing which sponge looks wettest after the water has been added to the container.
- (D) By feeling the sponges before and after adding water to each container.

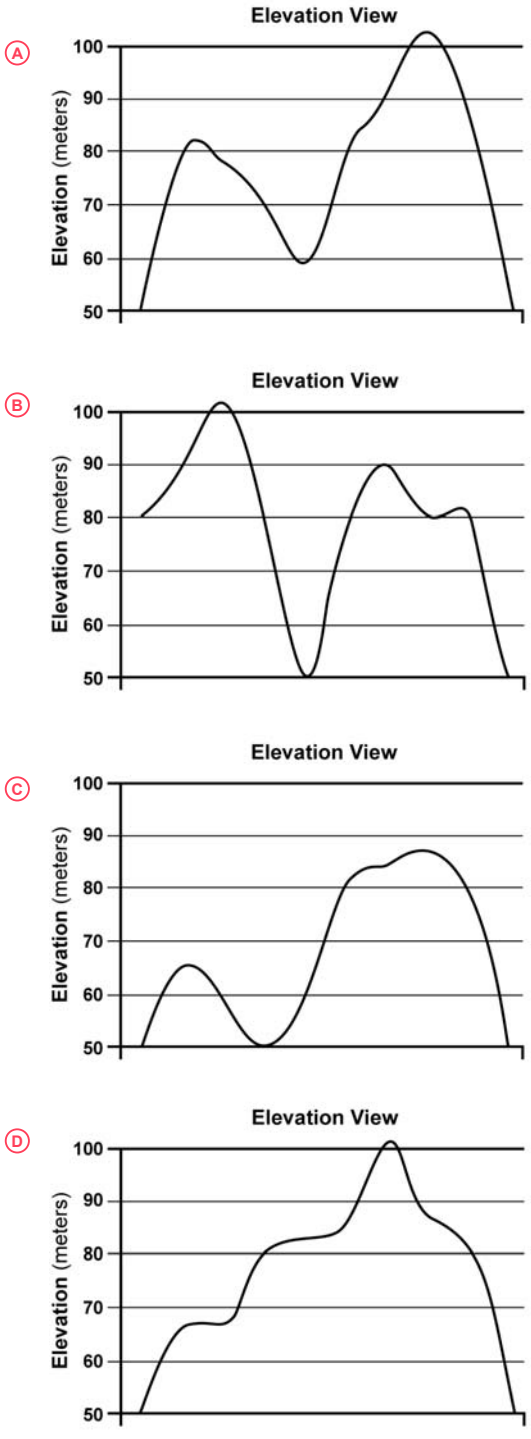


20. What conclusion can be drawn from the above bar chart?

- (A) Austin's average May temperature is 10 degrees warmer than Los Angeles.
- (B) Austin has the warmest average temperature and Minneapolis has the coolest average temperature in May.
- (C) Chicago's average May temperature is 4 times warmer than Minneapolis.
- (D) Los Angeles had a warmer spring than expected.

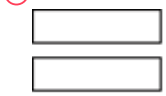


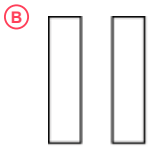
21. Which of the mountains below correspond to the contour map above?



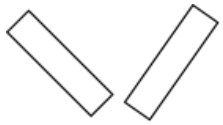
Wait for your instructor to read the directions and questions.

22. Which of the following best shows the alignment of horizontal objects?

Ⓐ 

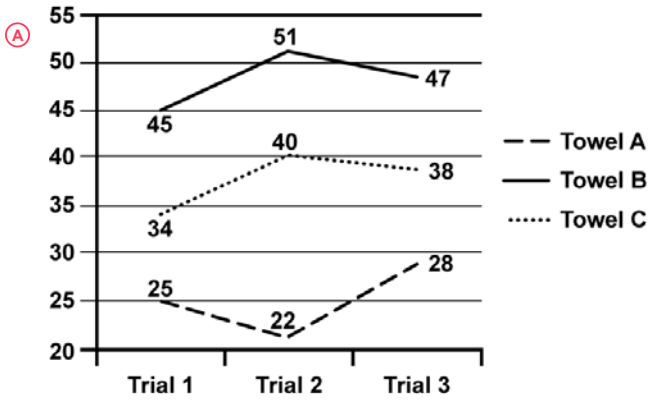
Ⓑ 

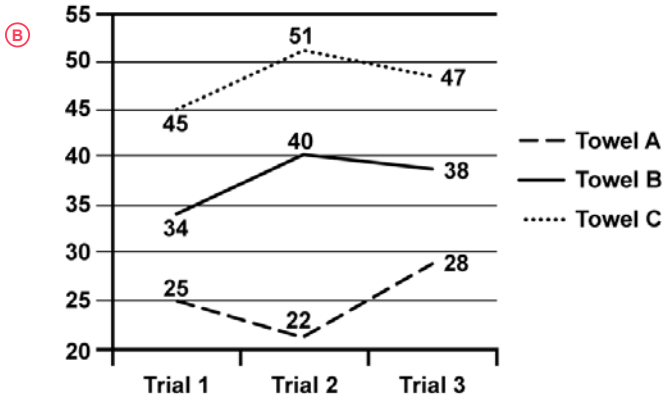
Ⓒ 

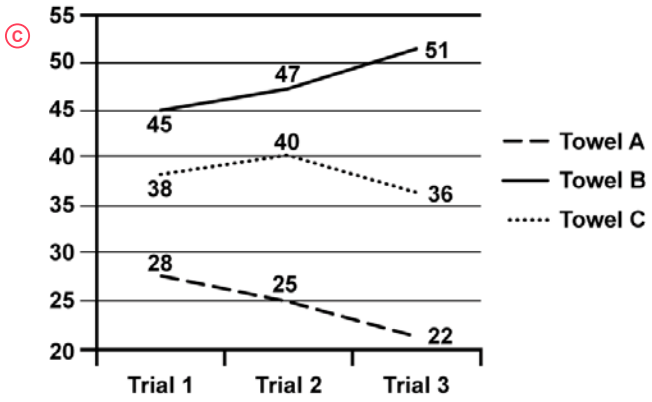
Ⓓ 

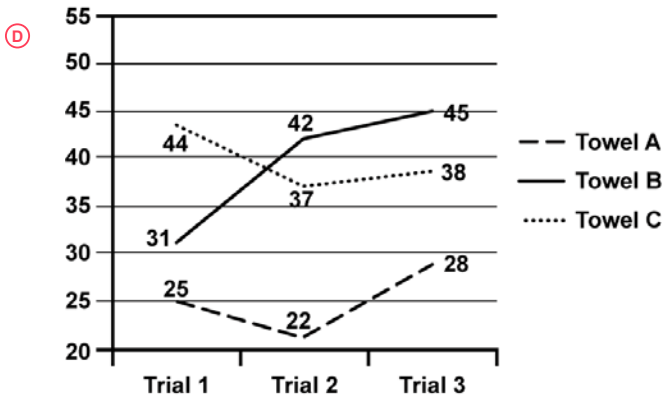
---

23. An engineer is testing how well three different towels absorb liquids over three trials. For the three trials, Towel A absorbed 25, 22, and 28 milliliters, Towel B absorbed 34, 40, and 38 milliliters, and Towel C absorbed 45, 51, and 47 milliliters. Select the graph that correctly represents the results of the experiment.

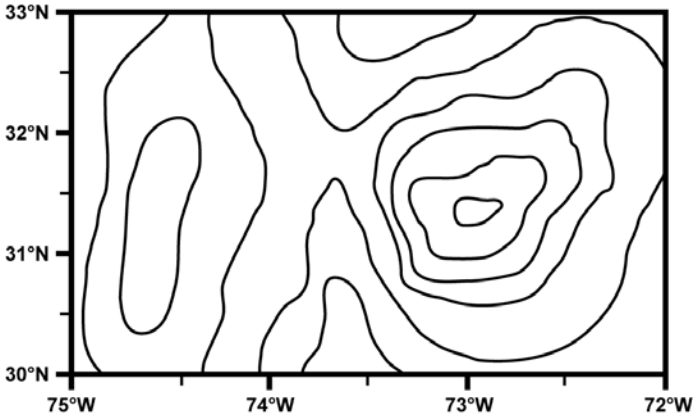
Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

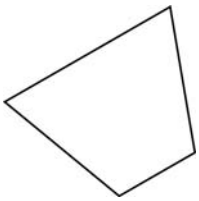
Wait for your instructor to read the directions and questions.

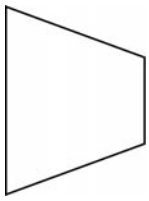


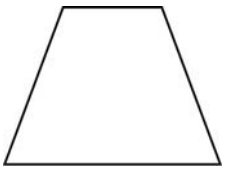
24. You are biking on a path and stop at GPS coordinates of 31° 50' 48" N and 74° 20' 18" W. Which direction should you head if you want to reach coordinates of 31° 50' 48" N and 74° 0' 0" W?

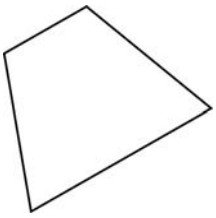
Ⓐ North
Ⓑ South
Ⓒ East
Ⓓ West

25. Compared to the first solid trapezoid, select the trapezoid that has been rotated 90 degrees.

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

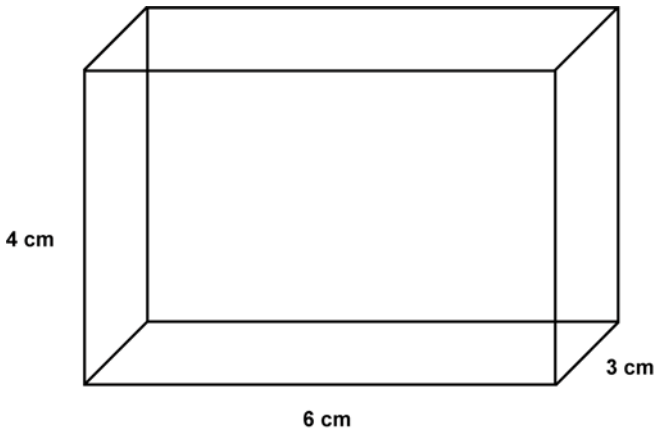
Wait for your instructor to read the directions and questions.

PLEASE DO NOT WRITE IN THIS AREA

[SERIAL]

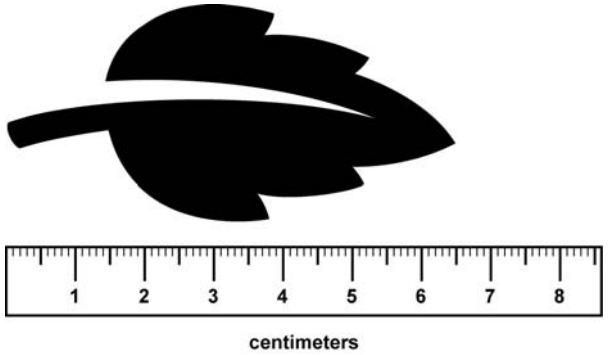
26. Which of the following is an example of chemical change?
- (A) Filling up a balloon with hot air.
- (B) Putting a bottle of water in the freezer and freezing it.
- (C) A plant collecting sunlight and turning it into food.
- (D) Your dog ripping up your homework.

27. To change a substance from a liquid state to a gaseous state, you could:
- (A) Increase the temperature, which results in a decrease of kinetic energy.
- (B) Increase the temperature, which results in an increase of kinetic energy.
- (C) Decrease the temperature, which results in an increase of kinetic energy.
- (D) Decrease the temperature, which results in a decrease of kinetic energy.



28. What is the volume of the above container?
- (A) 13 cubic centimeters
- (B) 16 cubic centimeters
- (C) 53 cubic centimeters
- (D) 72 cubic centimeters

29. Water is formed by bonding the elements of Hydrogen and Oxygen (H_2O). What does this bonded substance represent?
- (A) A compound
- (B) An atom
- (C) A nucleus
- (D) A drop



30. What is the length of the leaf in centimeters?
- (A) 2 centimeters
- (B) 3.5 centimeters
- (C) 6.5 centimeters
- (D) 7 centimeters

31. The air is composed mostly of what element?
- (A) Hydrogen
- (B) Helium
- (C) Chlorine
- (D) Nitrogen

32. How thick is Earth's atmosphere?
- (A) About 10 miles
- (B) About 25 miles
- (C) About 40 miles
- (D) More than 50 miles

33. If the diameter of a circle is 10 meters, what is the radius?
- (A) 20 meters
- (B) 12 meters
- (C) 8 meters
- (D) 5 meters

Wait for your instructor to read the directions and questions.

What is your opinion?



	Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	(?) Uncertain (4)	Slightly Agree (5)	Agree (6)	Strongly Agree (7)
1. I like math.	1	2	3	4	5	6	7
2. I am good at math.	1	2	3	4	5	6	7
3. I like science.	1	2	3	4	5	6	7
4. I am good at science.	1	2	3	4	5	6	7
5. I am good at following directions.	1	2	3	4	5	6	7
6. Learning is easy for me.	1	2	3	4	5	6	7
7. Learning can be fun.	1	2	3	4	5	6	7
8. You can learn a lot by trying things.	1	2	3	4	5	6	7
9. I think I can graduate from High School.	1	2	3	4	5	6	7
10. Military people do lots of different things.	1	2	3	4	5	6	7
11. I set goals for myself.	1	2	3	4	5	6	7
12. I make good decisions.	1	2	3	4	5	6	7
13. STARBASE Instructors are kind and helpful.	1	2	3	4	5	6	7
14. I can make my dreams come true.	1	2	3	4	5	6	7
15. You can accomplish a lot in a group.	1	2	3	4	5	6	7
16. You can have fun working in a group.	1	2	3	4	5	6	7
17. I like to make new things.	1	2	3	4	5	6	7
18. I think about what I want to be when I grow up.	1	2	3	4	5	6	7
19. The military is a good place to work.	1	2	3	4	5	6	7
20. Military bases are fun.	1	2	3	4	5	6	7
21. I do not think STARBASE will help me do better in school.	1	2	3	4	5	6	7
22. I like to think of new ways to use things.	1	2	3	4	5	6	7
Post STARBASE							
23. At STARBASE, I learned a lot of things that I can use.	1	2	3	4	5	6	7
24. STARBASE is boring.	1	2	3	4	5	6	7
25. I would tell my friends to come to STARBASE.	1	2	3	4	5	6	7
26. I am enjoying coming to a military base.	1	2	3	4	5	6	7

Thank You!

PLEASE DO NOT WRITE IN THIS AREA

[SERIAL]

2011 MILITARY VOLUNTEER SURVEY

This brief questionnaire is one part of the national assessment of the DoD STARBASE program. Your experiences and observations are an important part of the assessment. Your candid responses and timely cooperation are appreciated. Results of the assessment are presented in an Annual Report to Congress.

Thank you for completing the survey and for being a DoD STARBASE volunteer!

My service branch is:

- ☐ Air Force
- ☐ Air Force Reserve
- ☐ Marines
- ☐ National Guard
- ☐ Navy
- ☐ Navy Reserve

Volunteer activity (check all that apply):

- ☐ Tour Guide
- ☐ Teacher Aide
- ☐ Presenter
- ☐ Facilitate Experiments (ex. rockets, computer simulator, etc.)
- ☐ Administrative Support
- ☐ Other

Please estimate how many hours you volunteered with DoD STARBASE during the current academic year.

- ☐ less than five hours
- ☐ six to nine hours
- ☐ 10 to 25 hours
- ☐ 26 to 50 hours
- ☐ 51 to 75 hours
- ☐ 76 to 100 hours
- ☐ more than 100 hours

Please tell us how you think the Department of Defense's sponsorship of the STARBASE program impacts your community.

To what degree has the military made a difference in the community as the sponsor of the program?

- [ ] No difference
- [ ] Very little difference
- [ ] Some difference
- [ ] Significant difference
- [ ] Strong difference
- [ ] Don't know

Please discuss DoD STARBASE's influence or lack of influence on your community.

Please discuss any feedback about the program that you have heard about the program from military personnel, community leaders, parents and/or community members.

Please discuss how your involvement in DoD STARBASE affects you.

If asked, would you recommend others volunteer their time to DoD STARBASE?

- [ ] yes
- [ ] no

Please select the DoD STARBASE location where you volunteer.

Do you have any comments or suggestions to improve DoD STARBASE?

GLOSSARY

Academy: See DoD STARBASE academy.

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

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

Alternative Education Provider: A public or private school designed for children who do not function well in the traditional school setting. This may include continuation high schools or schools that fall outside the categories of regular, special education or vocational education.

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

Appropriations: Budget authority provided through the Congressional appropriation process that permits federal agencies to incur obligations and to make payments.

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

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

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

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

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

Computer-Aided Design (CAD): The use of computer technology to aid in the design and especially the drawing of a part or product. It is both a visual and symbol-based method of communication whose conventions are particular to a specific technical field.

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

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

Physics (3.5 hours)
- A. Newton's Three Laws of Motion
- B. Fluid Mechanics and Aerodynamics

Chemistry Sciences (3.5 hours)
- A. Building Blocks of Matter
- B. Physical and Chemical Changes
- C. Atmospheric Properties

Technology (4.0 hours)
- A. Innovations
- B. Navigation and Mapping

Engineering (4.0 hours)
- A. Engineering Design Process (EDP)
- B. 3-D Computer-Aided Design (3.0 hours as mandated by OASD/RA)

Mathematics Operations and Applications (2.0 hours)
- A. Numbers and Number Relationships
- B. Measurement
- C. Geometry
- D. Data Analysis

STEM Careers (1.5 hours)
- A. STEM Careers on Military Facilities
- B. Personal Investigations

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

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

Disability: Physical, mental, or sensory impairments that render major life activities more difficult.

DoD: Department of Defense.

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

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

DoD STARBASE Academy: A DoD educational program designed to improve the knowledge and skills of students in kindergarten through 12th grade in mathematics, science, and technology. It follows the academy model description in DoDI 1025.7.

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

DoD STARBASE Program: The DoD STARBASE program is authorized by Title 10 United States Code Section 2193b as a DoD science, math, and technology education improvement program. The Office of the Assistant Secretary of Defense for Reserve Affairs administers policy and oversight; the DoD components execute the program at DoD STARBASE academies. DoD STARBASE is funded by Congress as a Civil Military Program.

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

DoE: Department of Education.

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

Elementary School: An elementary/secondary school with one or more grades of K-8 that does not have any grade higher than grade 8.

Elementary/Secondary School: Elementary/secondary schools include regular schools (i.e., schools that are part of state and local school systems and private elementary/secondary schools, both religiously affiliated and nonsectarian); alternative schools; vocational education schools; and special education schools. Subcollegiate departments of postsecondary institutions, residential schools for exceptional children, federal schools for American Indians or Alaska Natives and federal schools on military posts and other federal installations are not included in the definition of elementary/secondary school.

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

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

Expenditures: Charges incurred, whether paid or unpaid, that are presumed to benefit the current fiscal year.

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

Fiscal Year: The yearly accounting period for the federal government, which begins on October 1 and ends on the following September 30. The fiscal year is designated by the calendar year in which it ends; for example, fiscal year 2012 begins on October 1, 2011, and ends on September 30, 2012.

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 work necessary for graduation, usually including grades 10, 11 and 12 (in a 6-3-3 plan) or grades 9, 10, 11, and 2 (in a 6-2-4 plan).

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

Inner City Location: Central section of a city, which is usually older and more densely populated.

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.

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

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

Mathematics: A body of related courses concerned with knowledge of measurement, properties, and relations quantities, which can include theoretical or applied studies of arithmetic, algebra, geometry, trigonometry, statistics, and calculus.

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

Middle School: A separately organized and administered school between the elementary and senior high schools. When called a "junior high school," a middle school usually includes grades 7, 8, and 9 (in a 6-3-3 plan) or grades 7 and 8 (in a 6-2-4 plan.) In some districts, however, a middle school spans grades 5 to 8 or grades 6 to 8.

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

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

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

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

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

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

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

Operational 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.

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

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

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

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

Public School: An institution that provides educational services for at least one of grades 1-12 (or comparable upgraded levels), has one or more teachers to give instruction, is located in one or more buildings, 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 public 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 Affairs-funded schools operated by local public school districts.

Rural Location: The population and territory outside any urbanized area and the urban part of any place with a decennial census population of 2,500 or less.

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

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

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

School Year: The 12-month period of time denoting the beginning and ending dates for school accounting purposes, usually from July 1 through June 30.

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: An elementary/secondary school with one or more of grades 7-12 that does not have any grade lower than grade 7.

Site: See DoD STARBASE site.

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

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

STEM: Science, Technology, Engineering, and Math

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

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

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

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

THE CURRICULUM CONTINUES TO BE INQUIRY-BASED AND TO HOLD THE STUDENTS' INTEREST THROUGH CHALLENGING HANDS-ON, MIND-ON ACTIVITIES. THE ACTIVITIES, CLEARLY SPECIFIED IN LESSON PLANS, ADHERE TO THE STANDARDS, OBJECTIVES AND APPROVED ACTIVITIES DESIGNATED BY THE CURRICULUM COMMITTEE FOR EACH OF THE SIX CONTENT AREAS. THIS ENSURES THAT EVERY CHILD WHO ENTERS A DoD STARBASE ACADEMY RECEIVES THE PLATINUM STANDARD IN STEM EDUCATION.

STATISTIC LIST

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

Xbar = ∑X/N
xbar = the sample mean; xbar is generally represented by an x with a bar or line over the top
∑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 = [∑xi-xbar2/n-1]1/2
n = the sample size.

3. t-test: tests the difference between two means

t = Xbar1 – Xbar2/sx1bar-x2bar
sx1bar-x2bar = the standard deviation of the difference between the two variables

4. Pearson's Correlation: determines the relationship between two variables

r12 = [[∑Y1*Y2 – ∑Y1*∑Y2/N]/N-1]/sy1sy2
Y = the values of the variables
s = the standard deviation of the variables

5. Regression Equation: determines what combination of variables can best predict the outcome for the dependent variable

Y = a + b1*X1 + b2*X2 + ... + bp*Xp
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

DIRECTORY OF DoD STARBASE ACADEMIES

ALABAMA

Montgomery

STARBASE Maxwell
Start Date: 2004
Service Component: Air Force
Military Location: Maxwell Air Force Base
Address:
60 West Maxwell Boulevard
Building 835/Basement
Montgomery, AL 36112
Tel: 334.953.4821
Fax: 334.953.4626
Director: Marvin (Chip) Haughton Jr.
Email: Marvin.Haughton@maxwell.af.mil

School Districts & Schools

District: Autauga County Public School District
Autaugaville School
Billingsley School
Daniel Pratt Elementary School
Pine Level Elementary School
Prattville Intermediate School

District: Department of Defense Elementary School
Maxwell AFB Elementary School

District: Elmore County Public School District
Eclectic Middle School
Holtville Middle School
Millbrook Middle School
Redland Elementary School
Wetumpka Middle School

District: Montgomery Area Home School Association
Bear Exploration School
Maxwell Area Home School Association

District: Montgomery County Public School District
Blount Elementary School
Carver Elementary and Arts Magnet School
Catoma Elementary School
Dalraida Elementary School
Dannelly Elementary School
E.D. Nixon Elementary School
Flowers Elementary School
Floyd Elementary School
Forest Avenue Academic Magnet School
Garrett Elementary School
Harrison Elementary School
Head Elementary School
Highland Avenue Elementary School
MacMillan International Academy
McKee Middle School
Morningview Elementary School
Paterson Elementary School
Peter Crump Elementary School
Pintlala Elementary School
T.S. Morris Elementary School

ALASKA

Anchorage

STARBASE Alaska
Start Date: 2002
Service Component: Air National Guard
Military Location: Alaska National Guard, Fort Richardson
Address:
P.O. Box 5800
JBER, Alaska 99505
Tel: 907.384.6351
Fax: 907.384.6350
Director: Ron Goertz
Email: Ronald.goertz@alaska.gov
Website: starbasealaska.org

School Districts & Schools

District: Anchorage School District
Abbott Loop Elementary School
Alaska Native Catheral Charter School
Aquarian Charter School
Airport Heights Elementary School
Chinook Elementary School
Chugiak Elementary School
Fairview Elementary School
Government Hill Elementary School
Lake Otis Elementary School
Orion Elementary School
Rabbitt Creek Elementary School
Rogers Park Elementary School
Taku Elementary School
Tudor Elementary School
Tyson Elementary School
Ursa Major Elementary School
Willow Crest Elementary School
Willow Crest Elementary School

District: Mat-Su School District
Houston Middle School
Wasilla Middle School

District: Other
Grace Christian School

ARIZONA

Tucson

STARBASE Arizona
Start date: 2005
Service Component: Air Force
Military Location: Davis-Monthan AFB
Address:
5355 E. Granite St.
Tucson, AZ 85707
Tel: 520.228.7827
Fax: 520.838.8687
Director: Margaret Cole
Email: margaret.cole@starbaseaz.com

School Districts & Schools

District: Amphitheater Public School District
F.O. Holaway Elementary School
Harelson Elementary School
Keeling Elementary School
Lulu Walker Elementary School
Painted Sky Elementary School
Prince Elementary School
Nash Elementary School
Rio Vista Elementary School
Wilson K-8 School

District: Association of Christian Schools International
Desert Christian Elementary School

District: Sunnyside Unified School District
Gallego Basic Elementary
Rosemarie Rivera Elementary School

District: Tucson Unified School District
Corbett Elementary School

District: Vail School District
Acacia Elementary School
Sycamore Elementary School

CALIFORNIA

Sacramento

California STARBASE
Start Date: 1993
Service Component: Army National Guard
Military Location: California National Guard, Sacramento Armory
Address:
8400 Okinawa Street, Suite 1
Sacramento, CA 95828
Tel: 916.387.7405
Fax: 916.387.8309
Director: John Lamb
Email: castarbase@sbcglobal.net
Website: www.starbaseca.org

School Districts & Schools

District: Elk Grove Unified School District
Anna Kirchgater Elementary School
Barbara Comstock Morse Elementary School
David Reese Elementary School
Florence Markofer Elementary School
Prairie Elementary School
Roy Herburger Elementary School
Samuel Kennedy Elementary School
Sierra Enterprise Elementary School
Union House Elementary School

District: Folsom Cordova Unified School District
Carl H. Sundahl Elementary School
Cordova Gardens Elementary School
Gold Ridge Elementary School
Mather Heights Elementary School
Natoma Station Elementary School
Navigator Elementary School
Rancho Cordova Elementary
Theodore Judah Elementary School
White Rock Elementary School
Williamson Elementary School

District: Loomis Union School District
Franklin Elementary School
H. Clarke Powers Elementary School
Loomis Grammar School
Penryn Elementary School
Placer Elementary School
Ophir Elementary School

continued

District: Natomas Unified School District
Westlake Charter School

District: Newcastle Elementary School District
Newcastle Elementary School

District: Robla Union School District
Glenwood Elementary School

District: Sacramento City Unified School District
David Lubin Elementary School
Martin Luther King Jr. K-8 School
Phoebe Hearst Elementary School
The Language Academy of Sacramento

District: Twin Rivers Unified School District
Allison Elementary School
F.C. Joyce Elementary School
Regency Park Elementary

District: Private
St. John Vianney Elementary School

San Diego

STARBASE Atlantis-San Diego Academy
Start Date: 1998
Service Component: Navy
Military Location: Naval Base San Diego
Address:
3975 Norman Scott Road
San Diego, CA 92136
Tel: 619.556.7589
Fax: 619.556.9310
Director: Nicholas Jordan
Email: nicholas.jordan@navy.mil

School Districts & Schools

District: Chula Vista Elementary School District
Harborside Elementary School
J. Calvin Lauderbach Elementary School
Lilian J. Rice Elementary School
Otay Elementary School
Silver Wing Elementary School

District: National City School District
Ira Harbison Elementary School
John A. Otis Elementary School

District: San Diego Unified School District
Jefferson Elementary School
Porter-North Campus Elementary

CONNECTICUT

Hartford

STARBASE Hartford
Start Date: 2001
Service Component: Air National Guard
Military Location: Bradley Air National Guard Base
Brainard Airport
Address:
251 Maxim Road
Hartford, CT 06114
Tel: 860.728.0090
Fax: 860.728.3293
Director: Melissa Vanek
Email: melissa.vanek@yahoo.com
Website: www.starbase-ct.com

School Districts & Schools

District: East Hartford Public School District
Anna E. Norris Elementary School
Franklin H. Mayberry Elementary School
Governor William Pitkin Elementary School
Hockanum Elementary School
John A. Langford Elementary School
Joseph O. Goodwin Elementary School
Robert J. O'Brien Elementary School
Silver Lane Elementary School
Sunset Ridge School
Thomas S. O'Connell Elementary School
Woodland School

District: Hartford Magnet Schools
R.J. Kinsella School of Performing Arts

District: Hartford Public Schools
McDonough Elementary School
R.J. Kinsella School of Performing Arts

District: New Britain Public Schools
Holmes Elementary School

Waterbury

STARBASE Waterbury
Start Date: 2003
Service Component: Air National Guard
Military Location: Naugatuck Community College
Address:
750 Chase Parkway
Waterbury, CT 06708
Tel: 203.575.8271
Fax: 203.575.8018
Director: Melissa Vanek
Email: melissa.vanek@yahoo.com
Website: www.starbase-ct.com

School Districts & Schools
District: Waterbury Public School District
Barnard Elementary School
Brooklyn Elementary School
Bucks Hill Elementary School
Bunker Hill Elementary School
Carrington Elementary School
Chase Elementary School
Driggs Elementary School
Generali Elementary School
John G. Gilmartin Elementary School
Hopeville Elementary School
F. J. Kingsbury Elementary School
Maloney Magnet Elementary School
Regan Elementary School
Rotella Interdistrict Magnet School
Sprague Elementary School
State Street School
B. W. Tinker Elementary School
Walsh Elementary School
Washington Elementary School
Wendell Cross Elementary School
Woodrow Wilson Elementary School

District: Waterbury Non-Public Schools
Children's Community School
Our Lady of Mount Carmel Elementary School

District: Watertown Public School
Polk Elementary School

DISTRICT OF COLUMBIA

Washington

STARBASE Atlantis
Start Date: 2001
Service Component: Navy
Military Location: Washington Navy Yard
Address:
645 Rickover St. S.E.
Building 21, Suite 102
Washington, DC 20374
Tel: 202.433.0533
Fax: 202.433.0534
Director: Shelley Bard
Email: shelley.bard@navy.mil

School Districts & Schools
District: Catholic Diocese
St Michaels Catholic School

District: District of Columbia Public School
Hendley Elementary School

FLORIDA

Jacksonville

STARBASE Florida, Inc
Start Date: 1994
Service Component: Air National Guard
Military Location: 125th Fighter Wing, Florida Air National Guard, Jacksonville International Airport
Address:
14300 FANG Drive
Jacksonville, FL 32218
Tel: 904.741.7320
Fax: 904.741.7324
Director: Gregory Stritch
Email: gregory.stritch@ang.af.mil

School Districts & Schools
District: Duval County Public Schools
Bank of America Learning Academy
Center Academy
Gregory Drive Elementary
Hendricks Avenue Elementary
Long Branch Elementary
Lone Star Elementary School

continued

S. A. Hull Elementary
Sadie Tillis Elementary
Sallye B. Mathis Elementary
Seacoast Academy
Saint Claire Evans Academy
Windy Hill Elementary

Pensacola

STARBASE Atlantis-NAS Pensacola
Start Date: 1994
Service Component: Navy
Military Location: Naval Air Station Pensacola
Address:
6490 Saufley Field Road
Pensacola, FL 32509-5237
Tel: 850.452.8287
Fax: 850.452.8288
Director: Donna Eichling
Email: donna.eichling@navy.mil
Website: www.cnet.navy.mil/comunity/starbase/sa.html

School Districts & Schools
District: Escambia County Public School District
Brentwood Elementary School
C.A. Weis Elementary School
Ensley Elementary School
Jim Allen Elementary School
Lincoln Park Elementary School
Navy Point Elementary School
O. J. Semmes Elementary School
Sherwood Elementary School
Spencer Bibbs Elementary School
Warrington Elementary School

District: Private School
East Hill Christian Elementary School
St. Paul Catholic School

Whiting Field

STARBASE Atlantis - Whiting Field
Start Date: 1994
Service Component: Navy
Military Location: Naval Air Station Whiting Field
Address:
NAS Whiting Field
Building 2943
Milton, FL 32570
Mailing Address:
6490 Saufley Field Road
Pensacola, FL 32509
Tel: 850.623.7516
Fax: 850.623.7660
Director: Donna Eichling
Email: donna.eichling@navy.mil
Website: www.cnic.navy.mil/WhitingField/programs/TenantActivities/StarbaseAtlantis/index.htm

School Districts & Schools
District: Escambia County Public Schools
Westgate Academy School

District: Santa Rosa County School District
Bagdad Elementary School
Bennett C. Russell Elementary School
Central Elementary School
Chumuckla Elementary School
East Milton Elementary School
Holley-Navarre Intermediate School
Jay Elementary School
Oriole Beach Elementary School
Pea Ridge Elementary School
W.H. Rhodes Elementary School

GEORGIA

Marietta

Peach State STARBASE
Start Date: 2001
Service Component: Air National Guard
Military Location: Georgia National Guard, Dobbins Air Reserve Base
Address: 1484 Patrol Road
Dobbins ARB, GA 30069
Tel: 678.655.4667
Fax: 678.655.4667
Director: Bill Wells
Email: bill.wells4@ga.ngb.army.mil

School Districts & Schools

District: Atlanta Public School System
- Boyd Elementary
- Grove Park Elementary School
- Towns Elementary
- Woodson Elementary School

District: Cobb County School District
- Birney Elementary School
- Harmony Leland Elementary School
- Hollydale Elementary School
- Kennesaw Charter School
- Mableton Elementary School
- Russell Elementary School

District: DeKalb County School System
- Huntley Hills Elementary

District: Homeschool
- Cornerstone Prep
- DeKalb Homeschool
- Forsyth Homeschool
- Georgia – EPH
- Rising Stars Homeschool
- The Homeschool

District: Marietta City Schools
- Hickory Hills Elementary
- Marietta Center for Advanced Academics
- West Side Elementary

Warner Robins

STARBASE Robins
Start Date: 1996
Service Component: Air Force Reserve
Military Location: Robins Air Force Base
Address:
P.O. Box 2469
Warner Robins, GA 31099
Tel: 478.926.1769
Fax: 478.926.1770
Director: Wesley Fondal
Email: wesley@starbaserobins.org
Website: www.starbaserobins.org

School Districts & Schools

District: Bibb County School District
- Alexander Elementary School
- Agnes Barden Elementary School
- Burghard Elementary School

District: Houston County School District
- Kings Chapel Elementary School
- Morningside Elementary School
- Northside Elementary School
- Pearl Stephens Elementary School
- Russell Elementary School
- Shirley Hills Elementary School
- Tucker Elementary School

District: Private School
- Central Fellowship Christian Academy
- St. Peter Claver Elementary School
- Twiggs Academy

HAWAII

Keaau

STARBASE Hawaii – Keaau
Start Date: 2008
Service Component: Air National Guard
Military Location: National Guard Armory, Keaau
Address:
16-512 Volcano Highway
P.O. Box 256
Keaau, HI 96749
Phone Number: 808.982.4298
Fax Number: 808.982.4241
Director: Todd Friel
Email: starbasehi@aol.com

continued

School Districts & Schools

District: Kea'au - Ka'u – Pahoa (KKP) Complex

Hawaii Academy of Arts and Sciences
Ke Kula o Nawahiokalaniopu'u
Keaau Elementary School
Keonepoko Elementary School
Mountain View Elementary School
Naalehu Elementary School
Pahala Elementary School
Pahoa Elementary School

District: Kona Public Schools Complex

Konawaena Elementary School

District: Waiakea Complex

Waiakea Elementary School

District: Private School

Haili Christian School
St. Joseph Elementary
Waters of Life Public Charter School

Pearl Harbor

STARBASE Atlantis – Hawaii
Start Date: 2002
Service Component: Navy
Military Location: Joint Base Pearl Harbor-Hickam, Ford Island, TSD Bldg 39, Room 234
Address:
1130 Bole Loop
Ford Island, Bldg 39, Room 234
Pearl Harbor, HI 96860
Tel: 808.472.7389
Fax: 808.472.7389
Director: Joseph P. Barrett
Email: joseph.p.barrett@navy.mil

School Districts & Schools

District: Oahu Central School District, Aiea-Moanalua-Radford Complex Area

Admiral Chester W. Nimitz Elementary School
Alvah A. Scott Elementary School
Major General William R. Shafter Elementary School
Makalapa Elementary School
Mokulele Elementary School
Pearl Harbor Elementary School
Pearl Harbor Kai Elementary School

District: Oahu Leeward School District, Campbell-Kapolei Complex Area

Ewa Elementary School
Iroquois Point Elementary School

District: Oahu Leeward School District, Pearl City-Waipahu Complex Area

Lehua Elementary School

ILLINOIS

Great Lakes

STARBASE Atlantis-Great Lakes
Start Date: 2001
Service Component: Navy
Military Location: Naval Station Great Lakes
Address:
2221 Macdonough Drive
Bldg. 617, Room 122
Great Lakes, IL 60088
Tel: 847.688.2509
Fax: 847.688.3136
Director: Corey J. Palmer
Email: corey.palmer@navy.mil

School Districts & Schools

District: North Chicago School District #187

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

District: Zion Elementary School District #6

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

KANSAS

Kansas City

STARBASE Kansas City
Start Date: 2008
Service Component: Air National Guard
Military Location: HQ HHS
Address:
100 S. 20th Street
Kansas City, KS 66102
Tel: 913.279.7858
Fax: 913.279.7859
Director: Jeff Gabriel
Email: director@kansasstarbase.org
Website: www.kansasstarbase.org

School Districts & Schools

District: Archdiocese of Kansas City
- Holy Cross Catholic School
- John Paul II Catholic School
- St. Patrick Catholic School
- Xavier Catholic School

District: Basehor-Linwood Public Schools - USD 458
- Basehor Elementary School

District: Kansas City Public Schools - USD 500
- Bethel Elementary School
- Eugene Ware Elementary School
- Lindbergh Elementary School
- Stony Point South Elementary School
- Thomas A. Edison Elementary School
- White Church Elementary School

District: Leavenworth Public Schools - USD 453
- Earl M. Lawson Elementary School

District: Olathe Public Schools - USD 233
- Ravenwood Elementary School

District: Shawnee Mission Public Schools - USD 512
- Nieman Elementary School
- Santa Fe Trail Elementary

District: Private
- Genesis Christian Academy
- Heritage Christian Academy
- Hyman Brand Hebrew Academy
- Kansas City Christian Elementary School
- Maranatha Christian Academy

Salina

STARBASE Salina
Start Date: 2008
Service Component: Air National Guard
Military Location: National Guard Armory
Address:
2929 Scanlan Ave.
Salina, KS 67401
Tel: 785.822.6602
Fax: 785.822.6600
Director: Jeff Gabriel
Email: director@kansasstarbase.org
Website: www.kansasstarbase.org

School Districts & Schools

District: Archdiocese of Salina
- St. Mary's Catholic School

District: Chapman Public Schools - USD 473
- Blue Ridge Elementary School
- Chapman Middle School
- Enterprise Elementary School

District: Clifton-Clyde Public Schools - USD 224
- Clifton-Clyde Middle School

District: Concordia Public Schools - USD 333
- Concordia Middle School

District: Lincoln Public Schools - USD 298
- Lincoln Elementary School

District: McPherson Pubic Schools - USD 418
- Eisenhower Elementary School
- Roosevelt Elementary School

District: North Ottawa County Public Schools - USD 239
- Minneapolis Elementary School

District: Rural Vista Public Schools - USD 481
- Hope Elementary School

District: Salina Unified Public Schools - USD 305
- Coronado Elementary School
- Meadowlark Ridge Elementary School
- Schilling Elementary School
- Stewart Elementary School
- Sunset Elementary School

continued

District: Solomon Public Schools - USD 393
Solomon Elementary School

District: Southern Cloud Public Schools - USD 334
Glasco Grade School
Miltonvale Grade School

District: Sylvan Public Schools - USD 299
Lucas/Sylvan Grove Elementary School

District: Twin Valley Public Schools - USD 240
Bennington Grade School
Tescott Elementary School

District: Other
Elyria Christian School
Salina Christian Academy

Topeka

STARBASE Topeka
Start Date: 1994
Service Component: Air National Guard
Military Location: Forbes Field Air National Guard Base
Address:
5920 SE Coyote Dr.
Topeka, KS 66619
Tel: 785.861.4709
Fax: 785.861.4127
Director: Jeff Gabriel
Email: jeff.gabriel.ctr@ang.af.mil
Website: www.kansasstarbase.org

School Districts & Schools
District: Archdiocese of Kansas City
Christ the King Elementary School
St. Matthews Elementary School

District: Archdiocese of Salina
Manhattan Catholic Elementary School

District: Auburn-Washburn Public Schools - USD 437
Auburn Elementary School
Farley Elementary School
Indian Hills Elementary School
Pauline South Intermediate School

District: Baldwin City Public Schools - USD 348
Marion Springs Elementary School
Vinland Elementary School

District: Mill Creek Valley Public Schools - USD 329
Alma Grade School
Maple Hill Grade School

District: Nebraska Lutheran Schools
St. John's Lutheran School

District: North Jackson Public Schools - USD 335
Jackson Heights Elementary School

District: Onaga-Havensville-Wheaton - USD 322
Onaga Elementary School

District: Rock Creek Public Schools - USD 323
St. George Elementary School

District: Santa Fe Trail Public Schools - USD 434
Carbondale Attendance Center

District: Seaman Public Schools - USD 345
North Fairview Elementary School
Rochester Elementary School
West Indianola Elementary School

District: Topeka Public Schools - USD 501
Lowman Hill Elementary School
Maude Bishop Elementary School
McEachron Elementary School
Scott Computer Technology Magnet School
Whitson Elementary School

District: Wamego Public Schools - USD 320
Wamego West Elementary School

District: Other
Topeka Home School

Wichita

STARBASE Wichita
Start Date: 1993
Service Component: Air National Guard
Military Location: McConnell Air Force Base
Address:
52870 Jayhawk Drive
Topeka, KS 67221
Tel: 316.759.7096
Fax: 316.759.7094
Director: Jeff Gabriel
Email: Director@kansasstarbase.org
Website: www.kansasstarbase.org

School Districts & Schools

District: Andover Public Schools - USD 385
Sunflower Elementary School
Wheatland Elementary School

District: Archdiocese of Wichita
Blessed Sacrament Catholic School
Holy Cross Catholic School
St. Mary's Catholic School
St. Thomas Aquinas School

District: Augusta Public Schools - USD 402
Garfield Elementary School

District: Newton Public Schools - USD 373
South Breeze Elementary School

District: Sterling Public Schools - USD 376
Sterling Grade School

District: Stoneybrook Home School
Stoneybrook Home School

District: Valley Center Public Schools - USD 262
Wheatland Elementary School

District: Wichita Public Schools - USD 259
Allen Elementary School
Benton Elementary School
Bostic Traditional Magnet School
Gammon Elementary School
Harry Street Elementary School

LOUISIANA

Barksdale

STARBASE Louisiana
Start Date: 1999
Service Component: Air Force Reserve
Military Location: 917th Wing, Barksdale Air Force Base
Address:
1000 Davis Ave East
Barksdale AFB, LA 71110
Tel: 318.529.3521
Fax: 318.529.3631
Director: Kathy Brandon
Email: kathy.brandon@barksdale.af.mil

School Districts & Schools

District: Bossier Parish School District
Apollo Elementary School
Bossier Elementary School
Carrie Martin Elementary School
Central Park Elementary School
Curtis Elementary School
Elm Grove Elementary School
Kerr Elementary School
Meadowview Elementary School
Plantation Park Elementary School
Princeton Elementary School
W. T. Lewis Elementary School
Waller Elementary School

District: Caddo Parish School District
Barret Paideia Elementary School
Caddo Heights Elementary School
Central Elementary School
Mooringsport Elementary School
Oil City Environmental Science Magnet Elementary School
Shreve Island Elementary School
Werner Park Elementary School

District: Cafe Home School Group
Home School Students

District: Catholic Diocese of Shreveport
St. John Berchmans Catholic School

continued

Pineville (formerly New Orleans)

Pelican State STARBASE
Start Date: 1999
Service Component: Air National Guard
Military Location: Louisiana National Guard, Camp Beauregard
Address:
609 F Street
Pineville, LA 71360
Tel: 318.290.5252
Fax: 318.290.5937
Director: Cheryl L. Arbour
Email: cheryl.arbour1@us.army.mil

School Districts & Schools

District: Archdiocese of Alexandria Parochial Schools
Our Lady of Prompt Succor School

District: Home School Association of Central Louisiana
C. C. H. S. A.

District: Rapides Parish Private Schools
Montessori Educational Center

District: Rapides Parish Public Schools
Alma Redwine Primary
Alpine Christian School
Carter C Raymond Elementary
Cenla Christian Academy
Cherokee Elementary School
Glenmora Elementary School
Hadnot-Hayes Elementary
J.B. Nachman Elementary
L.S. Rugg Elementary School
Lessie Moore Elementary
North Bayou Rapides Elementary
Northwood High School
Pineville Elementary School
Poland Junior High School
W.O. Hall Elementary Magnet School

MAINE

Bangor

STARBASE Maine
Start Date: 2001
Service Component: Air National Guard
Military Location: Air National Guard Base Bangor
Address:
105 Maineiac Ave.
Building 510
Bangor, ME 04401
Tel: 207.990.7505
Fax: 207.990.7150
Director: Michele Barnes
Email: michele.barnes@ang.af.mil

School Districts & Schools

District: Alternative Organizational Structure 91
Trenton Elementary School

District: Brewer School Department
Brewer Community School
State Street Elementary School

District: Dedham School Department
Dedham Elementary School

District: Diocese of Portland
All Saints Catholic School

District: Hermon School Department
Hermon Middle School

District: Orrington School Department
Center Drive Elementary School

District: Reconsolidation School Unit 22
George B. Weatherbee School
Leroy H. Smith School

District: Reconsolidation School Unit 24
Beech Hill Elementary School

District: Reconsolidation School Unit 25
Bucksport Middle School

District: Reconsolidation School Unit 26
Asa C. Adams School
Glenburn Elementary School
Veazie Community School

District: Reconsolidation School Unit 63
Holbrook Elementary School

District: Reconsolidation School Unit 87
Caravel Middle School

District: Union 93
Surry Elementary School

MARYLAND

Patuxent River

STARBASE Atlantis- Pax River
Start Date: 2006
Service Component: Navy
Military Location: Naval Air Station Patuxent River
Address:
47253 Whalen Road, Ste 102
Building 588, Room 102
Patuxent River, MD 20670-1463
Tel: 301.342.2789
Fax: 301.342.5457
Director: Julie Guy
Email: Julie.guy@navy.mil

School Districts & Schools

District: St. Mary's County Public Schools
Evergreen Elementary School
George Washington Carver Elementary School
Green Holly Elementary School
Hollywood Elementary School
Leonardtown Elementary School
Lettie Marshall Dent Elementary School
Lexington Park Elementary School
Ridge Elementary School

District: Other
Mother Catherine Spalding School

MICHIGAN

Battle Creek

STARBASE Battle Creek
Start Date: 2006
Service Component: Air National Guard
Military Location: Battle Creek Air National Guard Base
Address:
3595 Mustang Ave.
Building 6909
Battle Creek, MI 49037
Tel: 269.969.3219
Fax: 269.969.3251
Director: Bruce Medaugh
Email: BMedaugh@STARBASEBattleCreek.org

School Districts & Schools

District: Albion Public School District
Harrington Elementary School

District: Battle Creek Public School District
Dudley Elementary School
Fremont Elementary School
Franklin Elementary School
Urbandale Elementary School
Valley View Elementary School
Verona Elementary School

District: Bellevue Community School District
Bellevue Elementary School

District: Colon Community Schools
Colon Elementary School

District: Delton Public School District
Delton Kellogg Middle School

District: Hastings Area School System
Central Elementary School
Northeastern Elementary School
Southeastern Elementary School
Star Elementary School

District: Home School
Broekma Home School

District: Lakewood Public School District
Clarksville Elementary School
Sunfield Elementary School
West Elementary School
Woodland Elementary School

continued

District: Parchment Public School District
Parchment North Elementary School

District: Pennfield Schools
Dunlap Elementary School

District: Thornapple Kellogg School District
Page Elementary School

District: Three Rivers Community School District
Park Elementary School

Selfridge

STARBASE One
Start Date: 1991
Service Component: Air National Guard
Military Location: Selfridge Air National Guard Base
Address:
P.O. Box 450082
27310 D Street Building 1051
Selfridge ANG Base, MI 48045
Tel: 586.239.4884
Fax: 586.239.5751
Director: Rick Simms
Email: rsimms@starbaseone.org
Website: www.STARBASEOne.org

School Districts & Schools
District: Anchor Bay School District
Ashley Elementary School
Lighthouse Elementary School
MacDonald Elementary School
Naldrett Elementary School

District: Charter School – Detroit
Clippert Academy
Emerson Elementary-Middle School
O.W. Holmes Elementary-Middle School

District: Home Schools
Enrich Home School
Hamilton Home School

District: L'Anse Creuse Public School District
Carkenord Elementary School
South River Elementary School
Yacks Elementary School

District: Lamphere Schools
Hiller Elementary School

District: New Haven Public School District
Endeavour Elementary School
New Haven Elementary School

District: Private Schools
Our Lady Star of the Sea Catholic School
St. Germaine Catholic School
Trinity Lutheran School

District: Taylor Public School District
Eureka Heights Elementary School
Fischer Elementary School
Holland Elementary School
Moody Elementary School
Myers Elementary School
Taylor Parks Elementary School

MINNESOTA

Minneapolis/St. Paul

Start Date: 1993
Service Component: Air National Guard
Military Location: 133rd Airlift Wing, Minnesota Air National Guard Base
Address:
659 Mustang Avenue
St. Paul, MN 55111
Tel: 612.713.2530
Fax: 612.713.2540
Director: Kim Van Wie
Email: kvanwie@stabasemn.org
Website: www.starbasemn.org

School Districts & Schools
District: Minneapolis Parochial Schools
Risen Christ Catholic School

District: Minneapolis Public School District
Andersen Elementary School
Emerson Spanish Immersion Learning School
Hazel Park Preparatory Academy
Jefferson Community School
Pillsbury Elementary School
Richard R. Green Central Park School

District: St. Paul Charter Schools
Achieve Language Academy
Community of Peace Academy
Concordia Creative Learning Academy

District: St. Paul Parochial Schools
- Maternity of Mary St. Andrew School
- St. Agnes School
- St. Jeromes Catholic School
- St. Matthew's Catholic School
- St. Peter Claver Catholic School
- Saint Rose of Lima Catholic School

District: St. Paul Public School District
- American Indian Magnet Elementary School
- Como Park Elementary School
- Farnsworth Aerospace Magnet Elementary School
- Four Seasons A+ Elementary School
- Frost Lake Magnet School of Technology and Global Studies
- John A. Johnson Achievement Plus Elementary School
- Phalen Lake Hmong Studies Magnet School
- St. Paul Music Academy
- The Heights Elementary School
- World Cultures Magnet Elementary School

MISSISSIPPI

Choctaw

STARBASE Missisippi - Choctaw
Service Component: Navy
Military Location: Naval Air Station Meridian
Address:
266 Industrial Blvd.
Choctaw, MS 39350
Tel: 601.663.7592
Fax: 601.662.7593
Director: Pam Litton
Email: pam.litton@navy.mil

School Districts & Schools

District: Choctaw Tribal Schools
- Bogue Chitto Elementary School
- Conehatta Elementary School
- Pearl River Elementary School
- Red Water Elementary School
- Standing Pine Elementary School
- Tucker Elementary School

District: Other
- Leake Academy

Gulfport

STARBASE Atlantis-Gulfport
Start Date: 2001
Service Component: Navy
Military Location: Naval Construction Training Center
Address:
5510 CBC 8th Street
Building 386
Gulfport, MS 39501
Tel: 228.871.3735
Fax: 228.871.3468
Director: Keith Agee
Email: Keith.Agee@navy.mil

School Districts & Schools

District: Harrison County School District
- Bel-Aire Elementary School
- Crossroads Elementary School
- D'Iberville Elementary School
- Lizana Elementary School
- Lyman Elementary School
- North Woolmarket Elementary School
- Orange Grove Elementary School
- Pineville Elementary School
- Saucier Elementary School
- Three Rivers Elementary School
- West Wortham Elementary & Middle School
- Woolmarket Elementary School

District: Gulfport School District
- Anniston Elementary School
- Bayou View Elementary School
- Central Elementary School
- Gaston Point Elementary School
- Pass Road Elementary School
- Twenty-Eighth St. Elementary School
- West Elementary School

District: Long Beach School District
- Harper-McCaughan Elementary School

District: Pass Christian School District
- Delisle Elementary School
- Pass Christian Elementary School

continued

Meridian

STARBASE Atlantis-Meridian
Start Date: 2002
Service Component: Navy
Military Location: Naval Air Station Meridian
Address:
266 Rosenbaum Avenue
Meridian, MS 39309
Tel: 601.679.3809
Fax: 601.679.3812
Director: Pam Litton
Email: pam.litton@navy.mil

School Districts & Schools
District: Lauderdale County School District
Northeast Lauderdale Middle School

District: Meridian Public School District
Crestwood Elementary School
T.J. Harris Elementary School
Oakland Heights Elementary School
Parkview Elementary School
Poplar Springs Elementary School
West Hills Elementary School

District: Other
Calvary Christian School
Lamar Elementary School
Russell Christian Academy
St. Patrick Catholic School

MONTANA

Helena

STARBASE Montana
Start Date: 2007
Service Component: Army National Guard
Military Location: Fort Harrison
Address:
1956 Mt. Majo Street
Fort Harrison, MT 59636
Tel: 406.324.3727
Fax: 406.324.3735
Director: Michael Stone
Email: mstone@bresnan.net

School Districts & Schools
District: East Helena Public School District
Radley Elementary School

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

District: Lincoln Public Schools
Lincoln Public Schools

District: Montana City Public School District
Montana City Elementary School

NEBRASKA

Lincoln

STARBASE Nebraska
Start date: 2002
Service Component: Air National Guard
Military Location: Air National Guard Base Lincoln
Address:
Penterman Armory Room 201
2400 NW 24th Street
Lincoln, NE 68524
Tel: 402.309.1044
Fax: 402.309.1045
Director: Sherry Pawelko
Email: spawelko@starbasene.org
Website: www.starbasene.org

School Districts & Schools
District: Catholic Diocese of Lincoln
Blessed Sacrament School
St. Patrick's Elementary School

District: Heartland Homeschool Association
Heartland Homeschool Association

District: Lincoln Christian Schools
Lincoln Christian Elementary School

District: Lincoln Lutheran Schools
Good Sheperd Elementary School
Messiah Lutheran Elementary School
Trinity Lutheran Elementary School

District: Lincoln Public School District
Hartley Elementary School
Holmes Elementary School
Lakeview Elementary School
McPhee Elementary School
Norwood Park Elementary School
Prescott Elementary School
Saratoga Elementary School
West Lincoln Elementary School
Zeman Elementary School

District: Parkview Christian School
Parkview Christian Elementary

NEW MEXICO

Albuquerque

AF STARBASE La Luz
Start Date: 2003
Service Component: Air Force
Military Location: Kirtland Air Force Base
Address:
P.O. Box 9556
Albuquerque, NM 87119
Tel: 505.846.8042
Fax: 505.846.8932
Director: Ronda Cole
Email: ronda.cole@kirtland.af.mil
Website: http://www.vs.afrl.af.mil/LaLuz/

School Districts & Schools
District: Albuquerque Public Schools
Cleveland Middle School
Ernie Pyle Middle School
Harrison Middle School
Jimmy Carter Middle School
Ralph J. Bunche Academy
Sandia Base Elementary School
Truman Middle School
Van Buren Middle School
Washington Middle School

District: Archdiocese of Santa Fe
Our Lady of Annunciation School
Our Lady of Fatima Catholic School
San Felipe de Neri School
St. Mary's Catholic School
St. Therese Catholic School
Queen of Heaven Catholic School

District: Grants-Cibola County Schools
Mesa View Elementary School

District: Los Lunas Public Schools
Peralta Elementary School

District: Moriarty-Edgewood School District
Edgewood Elementary School
South Mountain Elementary School

District: Rio Rancho Public Schools
Eagle Ridge Middle School
Rio Rancho Middle School

District: Sandia View Elementary School
Sandia View Elementary School

District: Socorro Consolidated Schools District
Cottonwood Valley Charter School

District: Other
Menaul School

NORTH CAROLINA

Charlotte

STARBASE North Carolina- Charlotte
Start Date: 1993
Service Component: Air National Guard
Military Location: 145th Airlift Wing,
NC Air National Guard
Address:
4930 Minuteman Way
Charlotte, NC 28208
Tel: 704.398.4819
Fax: 704.398.4822
Director: Barbara Miller
Email: Barbara.miller.ctr@ang.af.mil

continued

School Districts & Schools
District: Burke County Public Schools
Salem Elementary School

District: Charlotte-Mecklenburg Public School System
Allenbrook Elementary School
Devonshire Elementary School
Druid Hills Elementary School
Hidden Valley Elementary School
Long Creek Elementary School
Paw Creek Elementary School
Reid Park Elementary School
Selwyn Elementary School
Smith Language Academy
Westerly Hills Academy

District: Davidson County Public Schools
Liberty Drive Elementary School

District: Haywood County Public Schools
Bethel Elementary School

District: Lincoln County Public Schools
Norris Childers Elementary School
Rock Springs Elementary School

District: Rowan County Public Schools
Rockwell Elementary School

District: Rutherford County Public Schools
Forrest Hunt Elementary School

District: Wilkes County Public Schools
C.B. Eller Elementary School

Kure Beach

STARBASE North Carolina -Fort Fisher
Start Date: 2004
Service Component: Air National Guard
Military Location: NC National Guard Training Center
Address:
116 Air Force Way
Kure Beach, NC 28449
Tel: 910.251.7332
Fax: 910.252.7335
Director: Barbara H. Miller
Email: Barbara.miller.ctr.@ncchar.ang.af.mil

School Districts & Schools
District: Brunswick School District
Belville Elementary School
Supply Elementary School
Town Creek Elementary School
Virginia Williamson Elementary School

District: Dare School District
Kitty Hawk Elementary School

District: New Hanover School District
Bellamy Elementary School
Blair Elementary School
Bolivia Elementary School
Bradley Creek Elementary School
Castle Hayne Elementary School
Codington Elementary School
Eaton Elementary School
Forest Hills Elementary School
Freeman Elementary School
Mary C. Williams Elementary School
Murrayville Elementary School
Pine Valley Elementary School
Winter Park Elementary School
Wrightsville Beach Elementary School

District: Pender School District
Malpass Corner Elementary School

District: Warren County Schools
Mariam Boyd Elementary School

NORTH DAKOTA

Minot

STARBASE North Dakota
Start Date: 2008
Service Component: Air Force
Military Location: Minot Air Force Base
Address: 101 C Street
North Plains Elementary School
Minot AFB, ND 58704
Tel: 701.727.3334
Fax: 701.727.3328
Director: Lisa Murphy
Email: lisa.murphy@minot.k12.nd.us
Website: www.starbasend.org

School Districts & Schools

District: Bowbells Public School District
Bowbells Public School

District: Glenburn Public School District
Glenburn Public School

District: Kenmare Public School District
Kenmare Public School

District: Lewis & Clark Public School District
Lewis & Clark Berthold Public School
Lewis & Clark Plaza Elementary School

District: Max Public School District
Max Public School

District: Minot Catholic Schools
Little Flower Catholic School

District: Minot Public School District
Bel Air Elementary School
Bell Elementary School
Dakota Elementary School
Edison Elementary School
Lewis & Clark Elementary School
Lincoln Elementary School
Longfellow Elementary School
McKinley Elementary School
North Plains Elementary School
Perkett Elementary School
Roosevelt Elementary School
Sunnyside Elementary School
Washington Elementary School

District: Nedrose Public School District
Nedrose Public School

District: Our Redeemer's Christian School
Our Redeemer's Christian School

District: South Prairie Public School District
South Prairie Public School

District: Surrey Public School District
Surrey Public School

District: United Public School District
Burlington Elementary School

OHIO

Albuquerque

STARBASE Wright-Patterson
Start Date: 2004
Service Component: Air Force
Military Location: Wright Patterson Air Force Base
Address:
DET1 AFRL/WSC
2130 8th Street
WPAFB, OH 45433
Tel: 937.904.8622
Fax: 937.904.8033
Director: Daniel Andrews
Email: Daniel.Andrews2@wpafb.af.mil
Website: edoutreach.wpafb.af.mil

School Districts & Schools

District: Beavercreek City School District
Parkwood Elementary School

District: Fairborn City School District
Fairborn Intermediate School

District: Huber Heights City Schools
Kitty Hawk Elementary School
Menlo Park Elementary
Monticello Elementary School
Valley Forge Elementary School

District: Mad River Local Schools
Spinning Hills Middle School

District: Miamisburg City Schools
Mound Elementary School
Mark Twain Elementary School

District: Yellow Springs Exempted Village Schools
Mills Lawn Elementary School

continued

OKLAHOMA

Oklahoma City

STARBASE Oklahoma – Oklahoma City
Start Date: 2001
Service Component: Air National Guard
Military Location: 137th Fighter Wing, OK Air National Guard, Will Rogers Air National Guard Base
Address:
5920 Air Guard Drive
Oklahoma City, OK 73179
Tel: 405.686.5950
Fax: 405.686.5229
Director: Pamela Kirk
Email: Pamela.kirk@ang.af.mil
Website: www.starbaseok.org

School Districts & Schools

District: Arapaho Public School District
Arapaho-Butler Elementary School

District: Archdiocese of Oklahoma City
Bishop John Carroll Catholic School
St. Charles Borremeo Catholic School
St. John Nepomuk Catholic School
St. Philip Neri Catholic School

District: Bishop Public Schools
Bishop Elementary School

District: Burns Flat-Dill City Public School District
BFDC Will Rogers Elementary School

District: Canute Public Schools
Canute Elementary School

District: Cheyenne Public School District
Cheyenne Elementary School

District: Clinton Public School District
Washington Elementary School

District: Elk City Public School District
Grandview Elementary School

District: Erick Public School District
Erick Elementary School

District: Flower Mound Public School District
Flower Mound Elementary School

District: Hammon Public School District
Hammon Elementary School

District: Indiahoma Public School District
Indiahoma Elementary School

District: Lawton Public School District
John Adams Elementary School
Brockland Elementary School
Carriage Hills Elementary School
Crosby Park Elementary School
Geronimo Road Elementary School
Howell Elementary School
Hugh Bish Elementary School
Jackson Elementary School
Lincoln Elementary School
Sheridan Road Elementary School
Sullivan Village Elementary School
Wilson Elementary School

District: Leedey Public School District
Leedey Elementary School

District: Merritt Public School District
Merritt Elementary School

District: Mid-Del City Public School District
Dell City Elementary School

District: Millwood Public School District
Millwood Arts Academy
Millwood Elementary School

District: Mountain View Public School District
Mountain View-Gotebo Elementary School

District: National Catholic Education Association
St. Mary's Catholic School

District: Oklahoma City Public School District
Hawthorne Elementary School
Sequoyah Elementary School

District: Piedmont Public School District
Piedmont Elementary School
Stone Ridge Elementary School

District: Private Schools
Mercy School
St. Mary's Catholic School

District: Putman City Public School District
Harvest Hills Elementary School

District: Sentinel Public School District
Sentinel Elementary School

District: Sterling Public School District
Sterling Elementary School

District: Western Heights Public School District
Council Grove Elementary School
Greenvale Elementary School
Winds West Elementary School

Tulsa

STARBASE Oklahoma - Tulsa & NAI
Start Date: 1993
Service Component: Air National Guard
Military Location: 138th Fighter Wing, Tulsa ANG Base
Address:
9131 E Viper Street
Tulsa, OK 74112
Tel: 918.833.7757
Fax: 918.833.7769
Director: Pam Kirk
Email: Pamela.kirk@ang.af.mil
Website: www.starbaseok.org

School Districts & Schools

District: Anderson Public School District
Anderson Elementary School

District: Barnsdall Public School District
Barnsdall Elementary School

District: Braggs Public School District
Braggs Elementary School

District: Bryant Public School District
Bryant Elementary School

District: Catoosa Public School District
Cherokee Elementary School

District: Cherokee Nation Education Dept.
Cherokee Education Department

District: Chouteau-Mazie Public School District
Chouteau Elementary School

District: Christian School
Boulevard Christian School
Rejoice Christian School

District: Diocese of Tulsa
All Saints Catholic School
Saints Peter & Paul Catholic School
St. Joseph's Catholic School
St. Pius X Catholic School

District: Fort Gibson Public Schools
Ft Gibson Elementary School

District: Gore Public School District
Gore Elementary School

District: Hilldale Public Schools
Hilldale Elementary School

District: Kansas Public School District
Kansas Elementary School

District: Keys Public School
Keys Elementary School

District: Kinta Public Schools
Kinta Elementary School

District: Midway Public School District
Midway Elementary School

District: Muskogee Public School District
Ben Franklin Science Academy
Creek Elementary School
Grant Foreman Elementary School
Harris-Jobe Elementary School
Irving Elementary School
Pershing Elementary School
Sadler Arts Academy
Tony Goetz Elementary School

District: Norwood Public Schools
Norwood Elementary School

District: Private Schools
Deborah Brown Academy
United Methodist Boys Ranch

continued

District: Pryor Public School District
Jefferson Elementary School
Lincoln Elementary School
Washington Elementary School

District: Okay Public School District
Okay Elementary School

District: Oktaha Public School District
Oktaha Elementary School

District: Osage Public Schools
Osage Elementary School

District: Salina Public School District
Salina Elementary School

District: Sand Springs Public School District
Pratt Elementary School

District: Tenkiller Public School District
Tenkiller Elementary School

District: Tulsa Public School District
Alcott Elementary School
Barnard Elementary School
Burroughs Elementary School
Celia Clinton Elementary School
Greeley Elementary School
McKinley Elementary School
Mitchell Elementary School
Lindbergh Elementary School
Owen Elementary School
Peary Elementary School
Springdale Elementary School
Walt Whitman Elementary School

District: Webbers Falls Public School District
Webbers Falls Elementary School

District: Woodall Public Schools
Woodall Elementary School

OREGON

Klamath Falls

STARBASE Kingsley
Start Date: 1993
Service Component: Air National Guard
Military Location: Oregon Air National Guard
173rd Fighter Wing - Kingsley Field
Address:
302 Bong Street, Suite 19
Klamath Falls, OR 97603
Tel: 541.885.6472
Fax: 541.885.6196
Director: Marsha Beardslee
Email: marsha.beardslee@gmail.com

School Districts & Schools

District: Klamath County School District
Bonanza Schools
Brixner Junior High
Chiloquin Elementary School
Ferguson Elementary School
Gilchrist School
Henley Elementary School
Keno Elementary School
Lost River Jr./Sr. High
Malin Elementary
Merrill Elementary School
Peterson Elementary School
Shasta Elementary School
Stearns Elementary School

District: Klamath Falls City School District
Conger Elementary School
Fairview Elementary School
Mills Elementary School
Pelican Elementary School
Roosevelt Elementary School

Portland

STARBASE Portland
Starting Date: 1993
Service Component: Air National Guard
Military Location: Jackson Armory/Portland Air National Guard Base
Address:
5266 NE Cornfoot Road
Portland, OR 97218
Tel: 503.916.5404 ext. 71061
Fax: 503.916.2795
Director: Jere Fitterman
Email: jfitter@pps.net
Website: www.mil.state.or.us/starbaseor/starbasepdx/starbase.html

School Districts & Schools

District: Canby School District
Howard Eccles Elementary School
Lee Elementary School

District: Community Transition School
Community Transition School

District: Damascus Christian School
Damacus Christian

District: David Douglas School District
Mill Park Elementary School

District: Horizon Christian
Horizon Christian

District: North Clackamas, Public Charter School
Cascade Heights

District: North Clackamas
Concord Elementary School

District: Portland Public School District
Alameda Elementary School
Arleta Elementary School
Beverly Cleary Elementary School
Bridger Elementary School
Buckman Arts Focus Elementary School
Capitol Hill Elementary School
Chief Joseph Elementary School
Duniway Elementary School
Faubion Elementary School
Forest Park Elementary School
Grout Elementary School
Harrison Park Elementary School
Irvington Elementary School
Laurelhurst Elementary School
Lee Elementary School
Llewellyn Elementary School
Maplewood Elementary School
Marysville Elementary School
Peninsula Elementary School
Rigler Elementary School
Rosa Parks Elementary School
Roseway Heights Elementary School
Sabin Elementary School
Scott Elementary School
Vestal Elementary School
Woodmere Elementary School
Woodstock Elementary School

District: Other
Scott Elementary School

PENNSYLVANIA

Pittsburgh

STARBASE Atlantis-Pittsburgh
Start Date: 2002
Service Component: Navy
Military Location: Naval Operational Support Center - Pittsburgh
Address:
625 East Pittsburgh/McKeesport Blvd.
North Versailles, PA 15137
Tel: 412.673.0801 ext. 135
Fax: 412.673.1381
Director: Ken C. Mechling, Jr.
Email: starbase.ken.mechlingjr@comcast.net
Website: www.starbase-atlantis-pittsburgh.org

School Districts & Schools

District: California Area School District
California Elementary-Middle School

District: Diocese of Pittsburgh School District
Good Shepherd School
Saint Bartholomew School
Word of God School

continued

District: East Allegheny School District
Logan Middle School

District: McKeesport Area School District
Centennial Elementary School

District: Monessen City School District
Monessen Elementary Center

PUERTO RICO

Carolina

STARBASE Puerto Rico
Start Date: 1995
Service Component: Air National Guard
Military Location: Puerto Rico National Guard, Muñiz AFB
Address:
200 Jose A. Santana Ave.
Muñiz ANG Base
Carolina, PR 00979
Tel: 787.253.7502
Fax: 787.253.2513
Director: Idabells Matos
Email: idabells.matos@ang.af.mil
Website Address : www.starbasepr.org

School Districts & Schools

District: Aguas Buenas Educational Region
Escuela Santa Clara

District: Bayamon Educational Region
Escuela Academia Santo Tomas De Aquino
Escuela Cristobal Colon
Escuela Francisco Rivera Claudio
Escuela Jesus Sanchez Erazo
Escuela SU David Colan Vega

District: Canovanas Educational Region
Escuela Academia Bautista Sotera Sanchez
Escuela Carmen L. Feliciano Carreras
Escuela Eugenio Maria De Hostos
Escuela Manuel Agosto Lebron

District: Carolina Educational Region
Escuela Maria Lopez Ponce
Escuela Prisco Fuentes Allende

District: Comerio Educational Region
Escuela Ines M Mendoza

District: Corozal Educational Region
SU Nicolas Rodriguez

District: Fajardo Educational Region
Escuela Maria M. Simmons De Rivera

District: Guarbo Educational Region
Escuela Bilingue Jose Mercado
Escuela Haydee Caballero
Escuela Luis Munoz Grillo

District: Guayama Educational Region
Colegio San Antonio

District: Guaynabo Educational Region
Escuela Intermedia Rafael Cordero

District: Isabela Educational Region
Escuela Emilia Castillo Viuda De Abreu

District: Las Piedras Educational Region
Escuela Juan Ponce De Leon
Escuela Maita Lucca Military Academy
Escuela SU José Toro Ríos

District: Loiza Educational Region
Escuela Medianía Alta Elemental

District: Manati Educational Region
Escuela Augusto Cohen

District: Morovis Educational Region
Escuela SU Ana Dalila Burgos
Escuela SU David Colon Vega

District: Naguabo Educational Region
Escuela Jose R. Agosto

District: Naranjito Educational Region
Escuela Mercedes Rosado

District: Orocovis Educational Region
Escuela GATO I

District: Ponce Educational Region
Escuela Julio Alvarado

District: San Juan Educational Region
Escuela Dr. Antonia Suez
Escuela Intermedia Berwind
Escuela Jaime Rosario Baez
Escuela Venus Gardens Intermedia
Escuela Villa Granada Elemental
Escuela Villa Granada Intermedia

District: San Sebastian Region
Escuela Narciso Rabell Cabrero

District: Santa Isabel Region
Escuela Florencio Santiago
Escuela Walter McK Jones

District: Toa Alta Region
Escuela Jose A. Nieves
Escuela Jose Mara Del Valle

District: Toa Baja Region
Escuela Basilio Milan Hernandez
Escuela Delia Davila Colan

District: Trujillo Alto Educational Region
Escuela Andrés Valcárcel

District: Yabucoa Educational Region
Escuela SU Andrés Soto Quitones

District: Yauco Educational Region
Escuela Lena M. Franceschi Irizarry

RHODE ISLAND

Newport

STARBASE Atlantis-Newport
Starting Date: 2004
Service Component: Navy
Military Location: Naval Station Newport
Address:
440 Meyerkord Ave.
Perry Hall Room 012
Newport, RI 02841
Tel: 401.841.4072
Fax: 401.841.4075
Director: Patrick F. Rossoni
Email: patrick.rossoni@navy.mil

School Districts & Schools
District: Fall River Public School District
Atlantis Charter School

District: Middletown Public School District
Joseph H. Gaudet Middle School

District: Newport Public School District
Thompson Middle School

District: North Kingstown Public School District
Fishing Cove Elementary School
Forrest Park Elementary School
Hamilton Elementary School
Quidnessett Elementary School
Stony Lane Elementary School

District: Other
The Pennfield School
St. Philomena Elementary School

SOUTH CAROLINA

Beaufort

STARBASE MCAS Beaufort
Start Date: 1999
Service Component: Marine Corps
Military Location: Marine Corps Air Station Beaufort
Address:
P.O. Box 55013
Bldg 660
Beaufort, SC 29904
Tel: 843.524.1320
Fax: 843.524.1326
Director: Robert Semmler
Email: semmlerrw@gmail.com
Website: www.starbasebeaufort.com

School Districts & Schools
District: Beaufort County School District
Beaufort Elementary School
Joseph S. Shanklin Elementary School
Lady's Island Intermediate School
Mossy Oaks Elementary School
Red Cedar Elementary
Right Choices Alternative School
Shell Point Elementary School

continued

District: Colleton County School District
- Bells Elementary School
- Bluffton Elementary School
- Broad River Elementary School
- Cottageville Elementary School
- Edisto Beach Elementary School
- Forest Hills Elementary School
- Hendersonville Elementary School
- Hilton Head Island Elementary School
- Northside Elementary School
- Pritcharville Elementary School
- Riverview Charter School
- Northside Elementary School

District: Jasper County School District
- Ridgeland Elementary School

District: Parochial/Private Schools
- Hardeeville Elementary School
- Saint Gregory the Great Catholic School

Columbia

STARBASE Swamp Fox
Start Date: 2001
Service Component: Air National Guard
Military Location: McEntire Joint National Guard Base
Address:
1325 South Carolina Road
Stop #39
Eastover, SC 29044
Tel: 803.647.8126
Fax: 803.647.8195
Director: John Motley
Email: john.motley.1@ang.af.mil
Website: www.scstarbase.org

School Districts & Schools

District: Archdiocese of Charleston
- St. John Neumann Catholic School
- St. Joseph Catholic School
- St. Martin dePorres School
- St. Peter Catholic School

District: Lexington County School District Two
- B.C. Grammar School No. 1
- C.A. Taylor Elementary School

District: Lexington-Richland School District Five
- Leaphart Elementary School

District: Richland County School District
- A.C. Moore Elementary School
- Forest Heights Elementary School
- Gadsden Elementary School
- Hopkins Elementary School
- Horrell Hill Elementary School
- Webber Elementary School

District: Richland County School District 2
- North Springs Elementary School

District: Sumter County School District 2
- F. J. Delaine Elementary School
- High Hills Elementary School

District: Independent/Non-affiliated School
- Barclay School
- Home School Group A
- Homeschool Group B
- Timmerman School
- V.V. Reid Elementary School

SOUTH DAKOTA

Rapid City

STARBASE Rapid City/NOVA Honor
Start Date: 2002
Service Component: Army National Guard
Military Location: SD National Guard, Camp Rapid
Address:
Building 123
2823 West Main Street
Rapid City, SD 57702
Tel: 605.737.6083
Fax: 605.737.6082
Director: Sarah Jensen
Email: sarah@sdstarbase.org
Website: http://www.sdstarbase.org

School Districts & Schools

District: Cheyenne River BIA School 20302
- Cheyenne Eagle Butte Upper Elementary School

District: Crow Creek Tribal School 34301
- Crow Creek Elementary Tribal School

District: Custer School District 16-1
- Custer Elementary School

District: Douglas School District 51-1
Vandenberg Elementary School

District: Dupree School District 64-2
Dupree Elementary School

District: Faith School District 46-2
Faith Elementary School

District: Hermosa School District
Hermosa Elementary School

District: Hot Springs School District 23-2
Hot Springs Elementary School

District: Kadoka Area School District 35-1
Kadoka Area Elementary School

District: Lower Brule BIA School
Lower Brule Elementary School

District: Lyman School District 42-1
Kennebec Elementary
Presho Elementary

District: McIntosh School District 15-1
Mcintosh Elementary School

District: McLaughlin School District 15-2
McLaughlin Elementary School

District: Meade School District 46-1
Whitewood Elementary School

District: New Underwood School District 51-3
New Underwood Elementary School

District: Oelrichs School District 23-2
Oelrichs Elementary School

District: Rapid City Area School District 51-4
Black Hawk Elementary School
Canyon Lake Elementary School
General Beadle Elementary School
Horace Mann Elementary School
Knollwood Heights Elementary School
Rapid Valley Elementary School
Robbinsdale Elementary School
South Park Elementary School
Valley View Elementary School

District: Red Cloud Indian School, Inc.
Our Lady of Lourdes School (OLL)
Red Cloud Middle School

District: Shannon County School District 65-1
Batesland School
Loneman School
Red Shirt School
Wolf Creek Elementary School

District: Smee School District 15-3
Wakpala Public School

District: St. Joseph's Indian School 32305
St. Joseph's Elementary School

District: Timber Lake School District 20-3
Timber Lake Elementary School

District: Other
Home School Association
Open Bible Christian School
Zion Lutheran Church and School

Sioux Falls

STARBASE Sioux Falls/NOVA Courage
Start Date: 1994
Service Component: Army National Guard
Military Location: SD Army & Air Guard Bases
Address:
801 W. National Guard Drive
Sioux Falls, SD 57104
Tel: 605.367.4930
Fax: 605.367.4926
Director: Vonny Revell
Email: vonny@sdstarbase.org

School Districts & Schools
District: Browns Valley School District
Browns Valley Elementary School

District: Garretson Public School District
Garretson Public School

District: Marty Indian School
Marty Indian School

continued

District: Rosholt School District
Rosholt Elementary School

District: Saint Francis Indian School
Saint Francis Indian School

District: Sisseton School District
New Effington Elementary School
Sisseton Elementary School
Wilmot Elementary School

District: Sioux Falls Public School District
Cleveland Elementrary School
Hawthorne Elementary School
Hayward Elementary School
Jefferson Elementary School
Laura B. Anderson Elementary School
Longfellow Elementary School
Lowell Elementary School
Renberg Elementary School
Robert Frost Elementary School
St. Lambert Elementary School
Terry Redlin Elementary School

District: Todd County School District
He Dog School
Klein School
Lakeview School
Littleburg School
Okreek School
Rosebud Elementary
South Elementary School
Spring Creek School

District: Wagner Community Schools
Wagner Middle School

District: White River School District
Andes Central Elementary
Norris Elementary School
White River Elementary School

TEXAS

Corpus Christi

STARBASE Atlantis- Corpus Christi
Start Date: 2006
Service Component: Navy
Military Location: Naval Air Station Corpus Christi
Address:
11001 D Street
Building 60
Corpus Christi, TX 78419
Tel: 361.961.5318
Fax: 361.961.3566
Director: Crystal Trujillo
Email: crystal.trujillo@navy.mil

School Districts & Schools

District: Corpus Christi Independent School District
Evans Elementary School
Fannin Elementary School
Houston Elementary School
Prescott Elementary School
T.G. Allen Elementary School

District: Diocese of Corpus Christi
Central Catholic School
St. Pius X Catholic School

District: Flour Bluff Independent School District
Flour Bluff Intermediate School

District: London Independent School District
London Elementary School

Houston

Texas STARBASE
Start Date: 1994
Service Component: Air National Guard
Military Location: Texas National Guard, Ellington Field
Address:
14657 Sneider Street, Bldg. 1055
Houston, TX 77034
Tel: 281.929.2034
Fax: 281.929.2036
Director: Gail Whittemore-Smith
Email: gail.whittemore@ang.af.mil

School Districts & Schools Served

District: Archdiocese of Galveston-Houston
- Our Lady of Fatima Catholic School
- Our Lady of Lourdes Catholic School
- St. Mary's Catholic School
- St. Mary's Catholic School (League City)
- St. Rose of Lima Catholic School
- True Cross Catholic School

District: Galena Park Independent School District
- MacArthur Elementary School

District: Hitchcock Independent School District
- Stewart Elementary School

District: Houston Independent School District
- Benjamin Franklin Elementary School
- Cornelius Elementary School
- Lantrip Elementary School
- Law Elementary School
- Pleasantville Elementary School
- Pugh Elementary School
- Sanchez Elementary School
- Valley West Elementary School
- Wainwright Elementary School

District: Padadena Independent School District
- Bailey Elementary School
- De Zavala Middle School
- Fisher Elementary School
- Jensen Elementary School
- Keller Middle School
- L.F. Smith Elementary School
- Lomax Middle School
- Melillo Middle School
- Milstead Middle School
- Morris Fifth Grade Center
- Schneider Middle School
- Shaw Middle School
- Williams Elementary School

District: Sheldon Independent School District
- Carroll Elementary School
- Monahan Elementary School
- Royalwood Elementary School
- Sheldon Elementary School
- Shepherd Middle School

District: Home School
- Gulf Coast Christian Scholars Home School

San Antonio

STARBASE Kelly
Start Date: 1995
Service Component: Air Force Reserve
Military Location: Lackland Air Force Base
Address:
203 Galaxy Road Suite 112
Lackland AFB, TX 78236-0112
Tel: 210.925.3708
Fax: 210.925.3702
Director: Ron Jackson
Email: starbase@clear.net

School Districts & Schools

District: Edgewood Independent School District
- L B Johnson Elementary School
- Stafford Elementary School

District: San Antonio Catholic Schools
- St. John Berchmans Catholic School
- St. John Bosco Catholic School

District: San Antonio Independent School District
- Bonham Academy
- Foster Elementary School
- JT Brackenridge Academy
- Madison Elementary School
- Nelson Elementary School
- Stewart Elementary School

District: South San Antonio Independent School District
- Carrillo Elemetary School
- Hutchins Elementary School

District: Southwest Independent School District
- Elm Creek Elementary School
- Sky Harbour Elementary School

District: Private Schools
- The Carver Academy

continued

VERMONT

Rutland

STARBASE Vermont - Rutland
Start Date: 2001
Service Component: Air National Guard
Military Location: Vermont Army National Guard
Address:
Rutland Armory
15 West Street
Rutland, VT 05701
Tel: 802.786.3820
Fax: 802.728.3822
Director: Doug Gilman
Email: douglas.gilman@ang.af.mil
Website: www.starbasevt.org

School Districts & Schools

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

District: Addison Rutland Supervisory Union
Benson Village Elementary School
Orwell Village Elementary School

District: Approved and Recognized Independent Schools
Christ the King Elementary School
Kurn Hattin Homes

District: Rutland Central Supervisory Union
Proctor Elementary School

District: Rutland City School District
Rutland Intermediate School

District: Rutland Northeast Supervisory Union
Lothrop School
Neshobe Elementary School

District: Rutland South Supervisory Union
Clarendon Elementary School
Shrewsbury Mountain School

District: Rutland Southwest Supervisory Union
Poultney Elementary School

District: Rutland Windsor Supervisory Union
Ludlow Elementary School
Mount Holly Elementary School

District: Southwest Vermont Supervisory Union
Shaftsbury Elementary School

District: Vermont Recognized Schools
Rutland Area Christian Elementary School

District: Windham Central Supervisory Union
Jamaica Village School
Windham Elementary School

District: Windham Northeast Supervisory Union
Bellows Falls Middle School

District: Windsor Central Supervisory Union
Killington Elementary School

District: Windsor Northwest Supervisory Union
Rochester School
Stockbridge Central School

District: Windsor Southwest Supervisory Union
Cavendish Town Elementary School

South Burlington

STARBASE Vermont - South Burlington
Start Date: 1994
Service Component: Air National Guard
Military Location: Vermont Air National Guard, 158th FW
Address:
100 NCO Drive
South Burlington, VT 05403
Tel: 802.660.5201
Fax: 802.660.5940
Director: Doug Gilman
Email: douglas.gilman@ang.af.mil
Website: www.starbasevt.org

School Districts & Schools

District: Addison Northeast Supervisory Union
Bakersfield Elementary School
Bristol Elementary School
Lincoln Community School

District: Addison Northwest Supervisory Union
Vergennes Union Elementary School #44

District: Approved and Recognized Schools of Vermont
Central Vermont Catholic School
Christ the King

District: Burlington Public School District
C.P. Smith Elementary School
Integrated Arts Academy at H.O. Wheeler
J.J. Flynn Elementary School
Sustainability Academy at Lawrence Barnes

District: Franklin Central Supervisory Union
St. Albans Town Educational Center

District: Franklin West Supervisory Union
Bellows Free Academy Fairfax

District: Grand Isle Supervisory Union
Folsom Educational and Community Center
Grand Isle School

District: Home School
Home School Group

District: Lamoille North Supervisory Union
Cambridge Elementary School

District: Winooski School District
John F. Kennedy School

VIRGINIA

Norfolk

STARBASE Atlantis - Norfolk
Start Date: 1995
Service Component: Navy
Military Location: Naval Station Norfolk
Address:
1474 Gilbert Street
Building N25 Room 252
Norfolk, VA 23511
Tel: 757.445.5905
Fax: 757.445.2624
Director: Laura Bennett
Email: laura.bennett@navy.mil

School Districts & Schools
District: Norfolk Public School District
Campostella Elementary School
Chesterfield Academy
Dreamkeeper's Academy at J.J. Roberts Elementary School
Fairlawn Elementary School
Ghent Elementary School
Granby Elementary School
James Monroe Elementary School
W. H. Taylor Elementary School

WASHINGTON

Silverdale

STARBASE Atlantis-Silverdale
Start Date: 2001
Service Component: Navy
Military Location: Trident Training Facility Naval Base Kitsap
Address:
2000 Thresher Ave.
Room D-222
Silverdale, WA 98315
Tel: 360.315.2671
Fax: 360.315.2747
Director: Morrell Yates
Email: morrell.yates@navy.mil
Website: https://www.netc.navy.mil/centers/slc/ttfbangor/pers_dev/starbase/starbase.htm

School Districts & Schools
District: Bremerton School District
View Ridge Elementary School

District: Central Kitsap School District
Brownsville Elementary School
Emerald Heights Elementary School
Esquire Hills Elementary School
Jackson Park Elementary School
PineCrest Elementary School

District: Chimacum School District
Chimacum Elementary School

District: Concordia Lutheran School
Concordia Lutheran School

continued

District: North Kitsap School District
- Breidablik Elementary School
- Gordon Elementary School
- Pearson Elementary School
- Poulsbo Elementary School
- Suquamish Elementary School
- Vinland Elementary School
- Wolfle Elementary School

District: Peace Lutheran Elementary School
- Peace Lutheran Elementary School

WEST VIRGINIA

Charleston

West Virginia STARBASE Academy
Start Date: 2001
Service Component: Air National Guard
Military Location: 130th Airlift Wing, WV National Guard
Address:
1679 Coonskin Drive
Charleston, WV 25311
Tel: 304.341.6441
Fax: 304.341.6445
Director: Chris Treadway
Email: wvang.starbase@ang.af.mil
Website: www.wvstarbase.org

School Districts & Schools

District: Kanawha County School District
- Alum Creek Elementary School
- Belle Elementary School
- Bridgeview Elementary Center
- Cedar Grove Elementary School
- Central Elementary School
- Chamberlain Elementary School
- Chesapeake Elementary School
- Clendenin Elementary School
- Grandview Elementary School
- Holz Elementary School
- JE Robins Elementary School
- Kanawha City Elementary School
- Kenna Elementary School
- Lakewood Elementary School
- Malden Elementary
- Marmet Elementary School
- Mary Ingles Elementary School
- Midland Trail Elementary School
- Montrose Elementary School
- Nitro Elementary School
- Piedmont Year-Round Education
- Pinch Elementary School
- Richmond Elementary School
- Ruffner Elementary School
- Ruthlawn Elementary School
- Sharon Dawes Elementary School
- Shoals Elementary School
- Watts Elementary School
- Weimer Elementary School

District: Private School
- St. Francis of Assisi School

Martinsburg

STARBASE Martinsburg
Start Date: 2002
Service Component: Air National Guard
Military Location: 167th Airlift Wing, Martinsburg
Address:
222 Sabre Jet Blvd.
Martinsburg, WV 25405
Tel: 304.616.5501
Fax: 304.616.5478
Director: Sherra Triggs
Email: sherra.triggs@ang.af.mil
Website: www.wvstarbase.org

School Districts & Schools

District: Berkeley County Public School District
- Eagle Intermediate School
- Mill Creek Intermediate School
- Mountain Ridge Intermediate School
- Orchard View Intermediate School
- Potomac Intermediate School
- Tomahawk Intermediate School

WYOMING

Cheyenne

STARBASE Wyoming
Start Date: 1994
Service Component: Air National Guard
Military Location: 153rd Airlift Wing, WY National Guard
Address:
217 Dell Range Boulevard
Cheyenne, WY 82009
Tel: 307.772.6161
Fax: 307.772.6017
Director: Brian L. Wright
Email: brianw@starbasewy.org
Website: www.starbasewy.org

School Districts & Schools

District: Laramie County School District #1
- Afflerbach Elementary School
- Alta Vista Elementary School
- Anderson Elementary School
- Arp Elementary School
- Baggs Elementary School
- Bain Elementary School
- Buffalo Ridge Elementary School
- Cole Elementary School
- Dildine Elementary School
- Fairview Elementary School
- Freedom Elementary School
- Gilchrist Elementary School
- Goins Elementary School
- Hebard Elementary School
- Henderson Elementary School
- Hobbs Elementary School
- Jessup Elementary School
- Miller Elementary School
- Pioneer Park Elementary School
- Rossman Elementary School
- Saddle Ridge Elementary School
- Sunrise Elementary School
- Willadsen Elementary School

District: Laramie County School District #2
- Carpenter Elementary School
- Pine Bluffs Elementary School
- West Elementary School

District: Local Private School
- St. Mary's School
- Trinity Lutheran School

This page was intensely left blank.

Designed and produced by HenkinSchultz Communication Arts www.henkinschultz.com
for The SPECTRUM Group, 11 Canal Center Plaza, Suite 103, Alexandria, Virginia 22314 www.spectrumgrp.com

DoD STARBASE
A Department of Defense Youth Program

For more information contact:

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

www.dodstarbase.org