



## 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.

A handwritten signature in black ink, appearing to read 'D. McGinnis', written over a horizontal line.

David L. McGinnis



## TABLE OF CONTENTS

### INTRODUCTION

FORWARD from the Acting Assistant Secretary of Defense for Reserve Affairs.....	i
STARBASE Students Shine in State and National Competitions ....	2
A Letter from a DoD STARBASE Graduate, Teresa “Speedy” Gonzalez .....	4
DoD STARBASE Accolades .....	6
DoD STARBASE Supports Obama Administration’s Call for Work Force Preparation .....	8
An Issue of National Importance.....	10
Vision and Mission Statements of DoD STARBASE .....	12
A History of Continued Excellence .....	13
Collaborations With STEM Organizations.....	14
DoD STARBASE Map.....	16
The DoD STARBASE Curriculum.....	17
A Letter from Lt. Gen. Charles E. Stenner Jr., Chief of Air Force Reserve.....	18
A Letter from Brig. Gen. Brod Veillon, Assistant Adjutant General-Air, Director of Education Programs, Louisiana National Guard .....	20
A Letter from Rear Adm. Thomas Moore, USN, Program Executive Officer, Aircraft Carriers.....	22
A Letter from Paula Harris, President, Board of Education, Houston Independent School District (HISD) .....	23
A Letter from Keith J. Masback, President, United States Geospatial Intelligence Foundation.....	24
<b>2011 ASSESSMENT.....</b>	<b>26</b>
Executive Summary .....	26
The Participants.....	28
The Program Elements.....	29
Grade Level.....	29
Class Size.....	29
Class Schedule .....	29
Program Service Area.....	30
Racial Composition.....	30
Gender Composition.....	31
Employment Affiliation .....	31
Staffing Model.....	32
Staff Development.....	33
Staff Changes and Departures .....	33
Volunteers.....	35
Not-For-Profit Organizations .....	35

Program Growth.....	37
Linking with STEM Collaborators to Form a STEM Pipeline.....	37
Curriculum Enhancements and Upgrades: The Installation of the New Curriculum Across all DoD STARBASE Locations .....	37
DoD STARBASE 2.0 .....	38
Program Oversight.....	40
Compliance .....	40
Performance Assessment System.....	42
Fiscal Analysis .....	46
Assessment Instruments .....	49
Overview.....	49
DoD STARBASE Staff Feedback on the Student Assessment Field Test (2011).....	52
2011 Student Assessment.....	55
Overview.....	55
Pilot Field Test: Administration, Methodology, Analysis, Results, Considerations and Next Steps.....	55
Results of the Students’ Knowledge and Skills Assessment ....	58
Student Attitudinal Results .....	69
Drivers of Opinion.....	84
Teacher Assessment.....	86
Overview.....	86
Classroom Teacher Demographics .....	90
DoD STARBASE’s Impact on the School System.....	91
School and Teacher Involvement.....	92
Teacher Attitudes by DoD STARBASE Evaluation Factor.....	93
Teacher Attitudinal Ratings on STEM-Related Activities .....	96
The Top Attitudinal Ratings Over the Last Five Years: 2007-2011 .....	97
Teacher Attitudes Across Military Service Components and Regions .....	98
Comparison of Attitudes Across Teacher Characteristics.....	99
Drivers of Teacher Opinion .....	103
Summary of Teacher Assessment .....	105
Military Volunteer Survey Results.....	105
<b>CONSIDERATIONS .....</b>	<b>107</b>
Considerations for the 2011 Program Year .....	107
Challenges for the 2011 Program Year.....	109
<b>APPENDICES .....</b>	<b>111</b>
<b>DIRECTORY.....</b>	<b>159</b>



## 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**



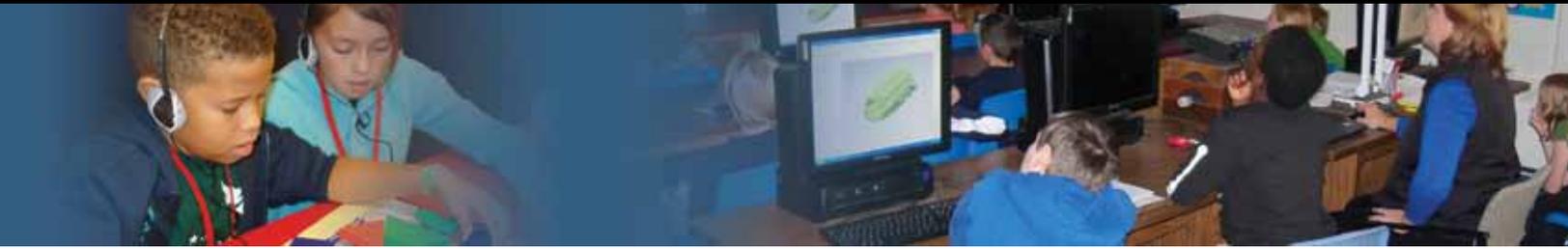
**HALEY AND JACK HANSON, A BROTHER AND SISTER TEAM FROM NEW MEXICO AND STARBASE GRADUATES, EARNED AN INVITATION FROM PRESIDENT OBAMA TO PARTICIPATE IN THE WHITE HOUSE SCIENCE FAIR.**

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<sup>1</sup>

“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.”

<sup>1</sup> 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.<sup>2</sup>

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.<sup>3</sup> 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.<sup>4</sup> 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."

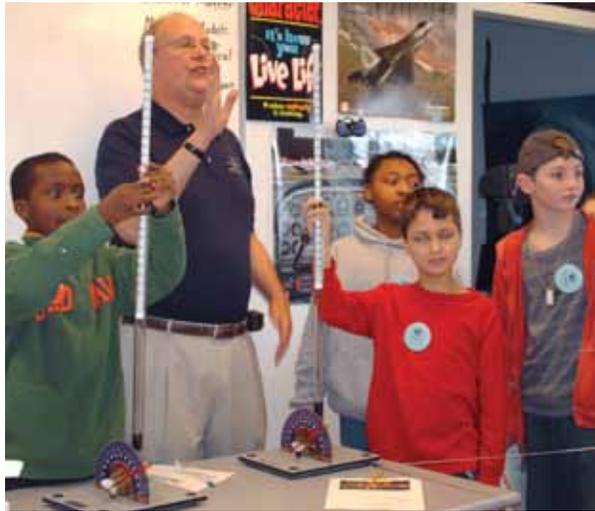
<sup>2</sup> President Obama Launches "Educate to Innovate" Campaign for Excellence in Science, Technology, Engineering and Mathematics (STEM) Education, The White House, Office of the Press Secretary, Nov. 23, 2009.

<sup>3</sup> Center on Education and the Workforce. Georgetown University

<sup>4</sup> <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.<sup>5</sup> 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).<sup>6</sup> The average score in science literacy, although not appreciably different from the OECD average, was behind 11 other OECD countries.

<sup>5</sup> 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.

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

<sup>7</sup> "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.

<sup>8</sup> "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 (TIMSS), found that students in “affluent suburban U.S. school districts score nearly as well as students in Singapore, the runaway leader on TIMSS math scores.”<sup>7</sup> 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.<sup>8</sup>

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

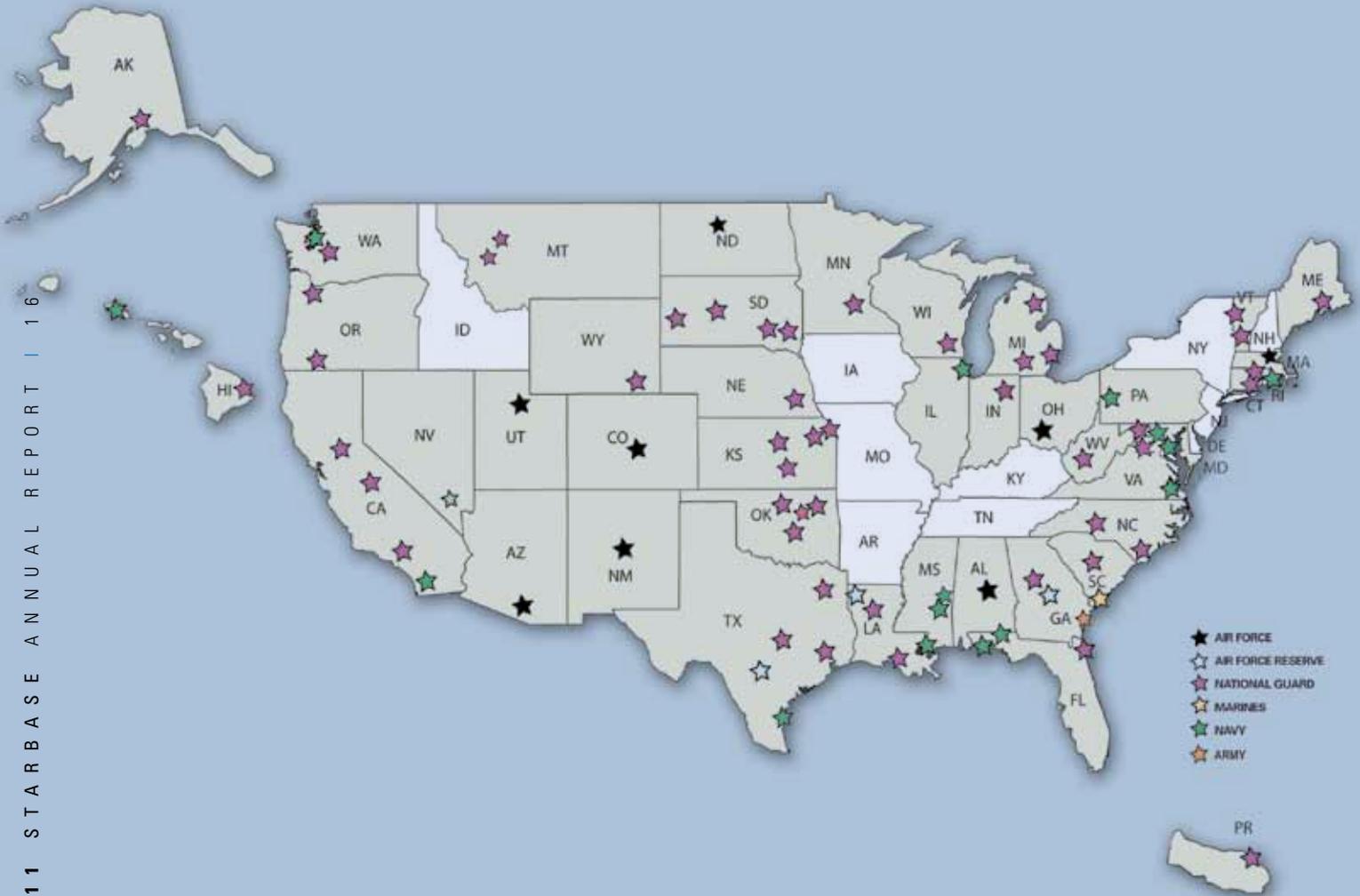
granted a three-year STEM/CTE grant to Hadnot-Hayes Elementary School based on its affiliation and involvement over the years with the DoD STARBASE Program and the STEM curriculum.

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

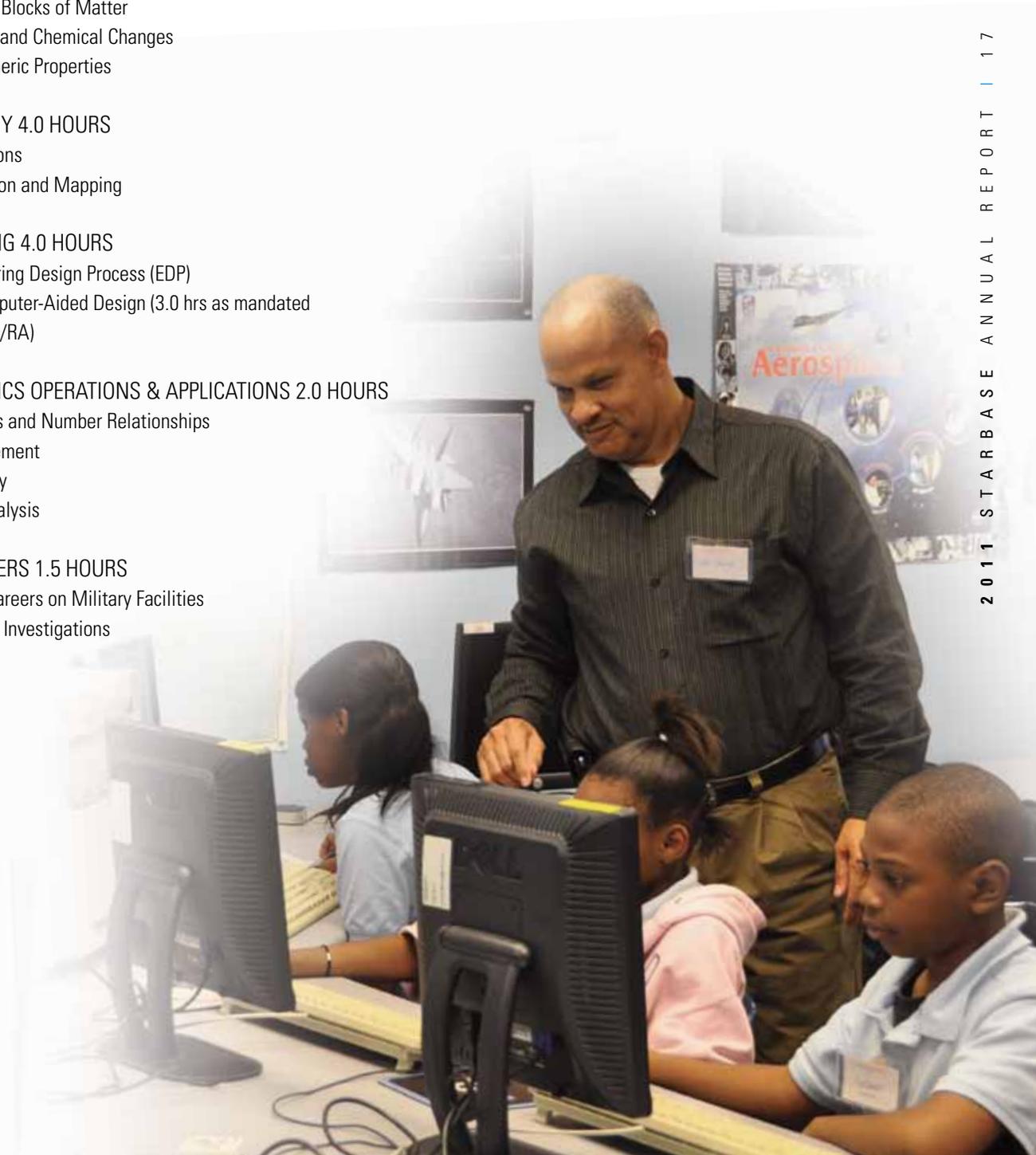
- A. Engineering Design Process (EDP)
- B. 3-D Computer-Aided Design (3.0 hrs as mandated by OASD/RA)

### 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



**“I’VE ALWAYS BEEN ASSOCIATED WITH AVIATION AND IT IS TRULY A PRIVILEGE TO CONTINUE THAT ASSOCIATION THROUGH STARBASE”**

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.





## 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-based 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,

A handwritten signature in black ink, appearing to read "Keith Masback". The signature is fluid and cursive.

Keith Masback  
President



## 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.<sup>1</sup> 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.

<sup>1</sup> 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.<sup>2</sup> 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<sup>3</sup>  
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%

<sup>2</sup> DoD STARBASE sites in District of Columbia, Maine, Minnesota, and Mississippi-Choctaw reported averages of less than 20 students.

<sup>3</sup> 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

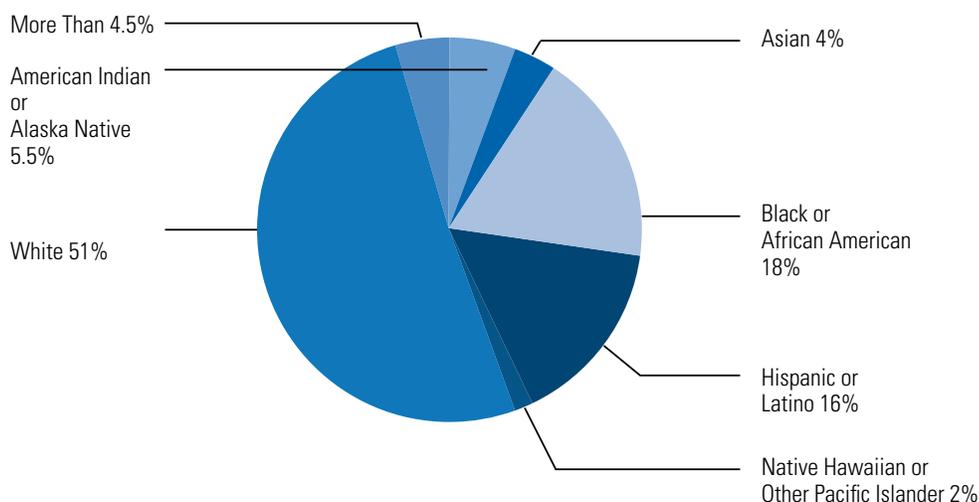
The following table shows the racial composition of the DoD STARBASE student population over the past two years (see Exhibit 2). Hispanic or Latino students along with the Native Hawaiian or Pacific Islanders and White populations display positive growth in the program over the past year. The Hawaiian 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 respectively.

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 <sup>4</sup>	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.

<sup>4</sup> 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%

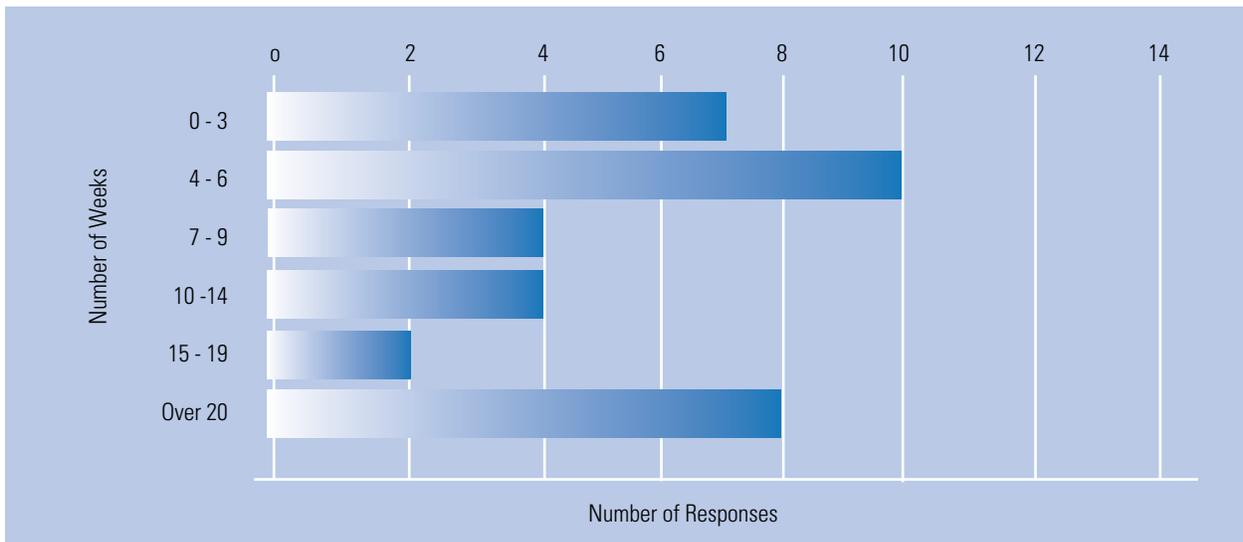


**Reasons for Staff Departure**  
**Exhibit 7**



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 <sup>5</sup>	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.

<sup>5</sup> 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.<sup>6</sup> 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

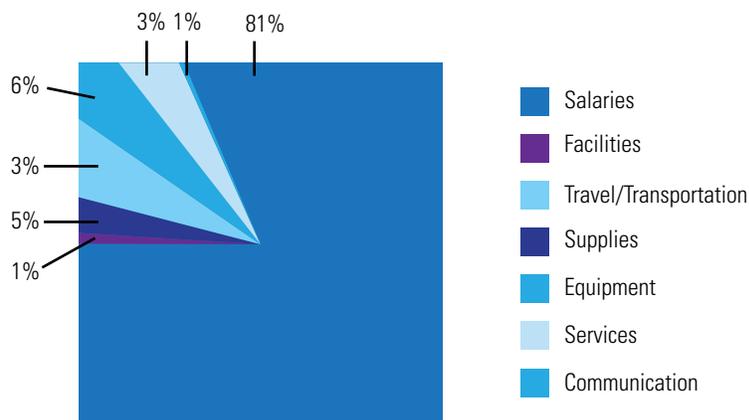
\*Include students attending a four- or five-day program.

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.

<sup>6</sup> 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**

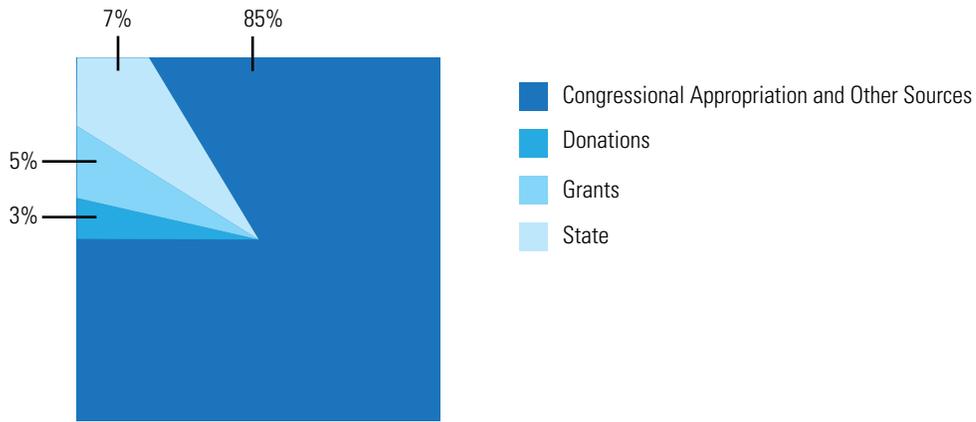
**Exhibit 14**

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**

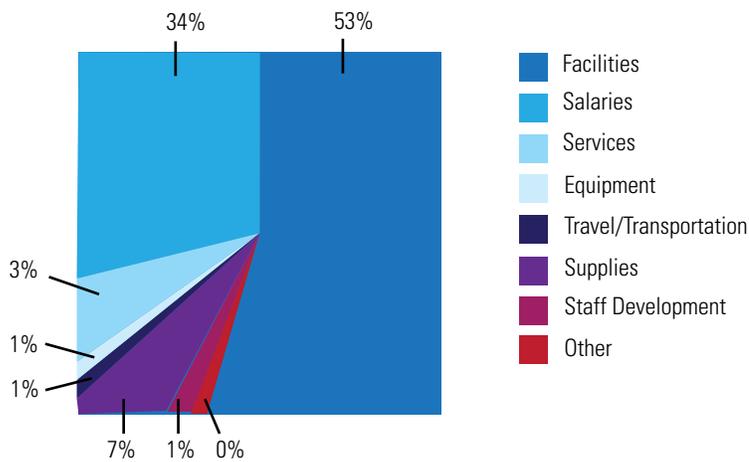
**Exhibit 15**



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
<b>Survey Administration Items</b>					
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
<b>Survey Content Items</b>					
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
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
<b>I have met military people before coming to STARBASE</b>			
	No	555	36.3
	Yes	928	60.7
	Unknown/No answer	47	3.1
<b>I heard about STARBASE before I knew I was coming here</b>			
	No	526	34.4
	Yes	957	62.5
	Unknown/No answer	47	3.1
<b>I know someone who went through STARBASE before me</b>			
	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**

<b>CHEMISTRY SCIENCE (E3.1.1.2)</b>		
<b>Atmospheric Properties</b>	<b>Item #</b>	
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
<b>Building Blocks of Matter</b>		
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 <sub>2</sub> O). What does this bonded substance represent?	29	New
<b>Physical and Chemical Changes</b>		
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
<b>ENGINEERING (E3.1.1.4)</b>		
<b>3-D Computer-Aided Design</b>		
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
<b>MATHEMATICS OPERATIONS &amp; APPLICATIONS (E3.1.1.5)</b>		
<b>Data Analysis</b>		
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
<b>Geometry*</b>		
In the graph above, find the letter that is at the coordinates (3,-2). Is it A, B, C, or D?	11	New
<b>Measurement</b>		
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*

<b>Numbers and Number Relationships</b>		
A red blood cell is about 10,000 nanometers in diameter. What would this be in meters?	13	New
<b>PHYSICS (E3.1.1.1)</b>		
<b>Fluid Mechanics &amp; Aerodynamics</b>		
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
<b>Newton's Laws of Motion</b>		
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
<b>TECHNOLOGY (E3.1.1.3)</b>		
<b>Innovations</b>		
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
<b>Navigation and Mapping</b>		
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
<b>Chemistry Sciences (Subtotal)</b>	<b>13</b>	<b>5.36</b>	<b>8.53</b>	<b>+3.17</b>
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
<b>Physics (Subtotal)</b>	<b>6</b>	<b>2.59</b>	<b>3.90</b>	<b>+1.31</b>
Fluid Mechanics and Aerodynamics	2	.45	1.14	+0.69
Newton's Three Laws of Motion	4	2.14	2.76	+0.62
<b>Mathematics Operations and Applications<sup>a</sup> (Subtotal)</b>	<b>8</b>	<b>4.14</b>	<b>4.90</b>	<b>+0.76</b>
Data Analysis	2	1.28	1.48	+0.20
Geometry <sup>b</sup>	1	.50	.63	+0.13
Measurement	4	2.54	2.99	+0.45
Numbers and Number Relationships	1	.37	.43	+0.06
<b>Technology (Subtotal)</b>	<b>4</b>	<b>2.02</b>	<b>2.46</b>	<b>+0.44</b>
Innovation	2	1.39	1.55	+0.16
Navigation and Mapping	2	.66	.91	+0.25
<b>Engineering: 3-D Computer-Aided Design</b>	<b>2</b>	<b>1.20</b>	<b>1.42</b>	<b>+0.2</b>

*\*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.<sup>7</sup> 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.

<sup>7</sup> 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**

<b>Knowledge Items</b>	<b>Pre-Program</b>	<b>Post-Program</b>	<b>% Difference</b>
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 (H <sub>2</sub> O). 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 <sup>^</sup>	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.*

*<sup>^</sup> 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 <sup>^</sup>	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.

<sup>^</sup>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 inverted: 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.

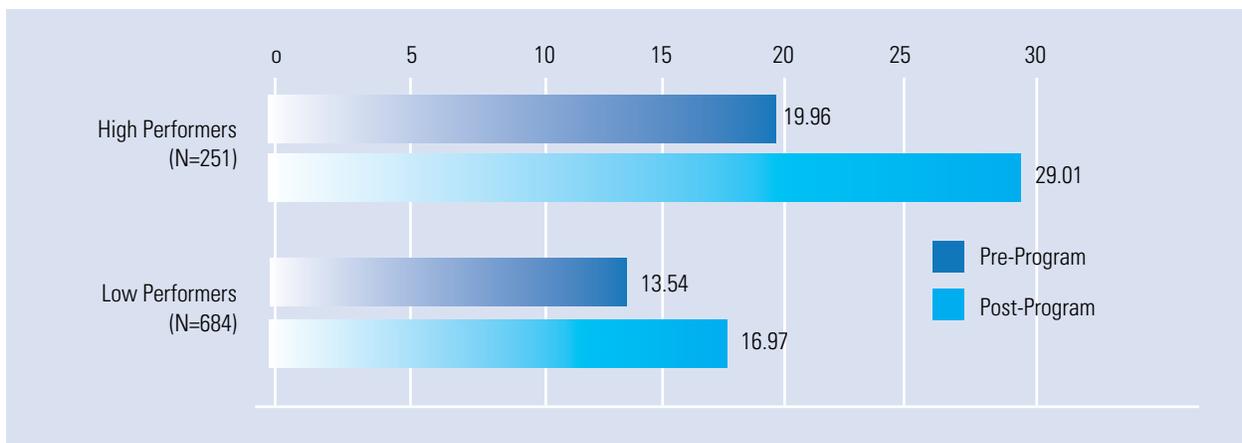
The criteria for identifying high and low student scores was to take one standard deviation plus or minus from the total post-program mean of 21.53; thus, those with scores equal to or less than 16 were designated “lower performers,” and those with scores greater or equal to 27 were designated “high 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**

Attitudinal Items	2006		2007*		2008		2009		2011	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
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**

	2004	2005	2006	2007	2008	2009	2011
Post-Program Attitudes	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		2007		2008		2009		2011	
	Shift	Rank	Shift	Rank	Shift	Rank	Shift	Rank	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
<b>Post-Program Attitudes</b>	<b>5.16</b>	<b>6.37</b>	<b>1.21</b>
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 <sup>^</sup>	2.50	1.53	-0.97
I do not think STARBASE will help me do better in school <sup>^</sup>	2.38	1.53	-0.85

<sup>^</sup> 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
<b>Favoring Female</b>					
<b>I think I can graduate from High School.</b>	1	<b>6.62</b>	1	<b>6.46</b>	<b>.16</b>
STARBASE Instructors are kind and helpful.	2	6.51	2	6.43	.08
<b>You can learn a lot by trying things.</b>	3	<b>6.45</b>	3	<b>6.35</b>	<b>.10</b>
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
<b>I am good at following directions.</b>	<b>10 (tie)</b>	<b>5.93</b>	20	<b>5.54</b>	<b>.39</b>
<b>Learning can be fun</b>	<b>10 (tie)</b>	<b>5.93</b>	16	<b>5.69</b>	<b>.24</b>
<b>I can make my dreams come true</b>	<b>13</b>	<b>5.91</b>	15	<b>5.73</b>	<b>.18</b>
<b>I make good decisions</b>	<b>16</b>	<b>5.86</b>	19	<b>5.57</b>	<b>.29</b>
<b>Favoring Male</b>					
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
<b>I am good at math</b>	<b>23</b>	<b>5.28</b>	21	<b>5.51</b>	<b>.23</b>

\*Bolted 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	+0.01
Remaining Locations	1,364	5.76	5.93	+0.17

**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)
<b>Knowledge Items</b>				
Pre-Program Mean	18.48	18.43	19.16	13.53
Post-Program Mean	25.34	23.77	22.32	17.75
<b>Attitudinal Items</b>				
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 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
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.

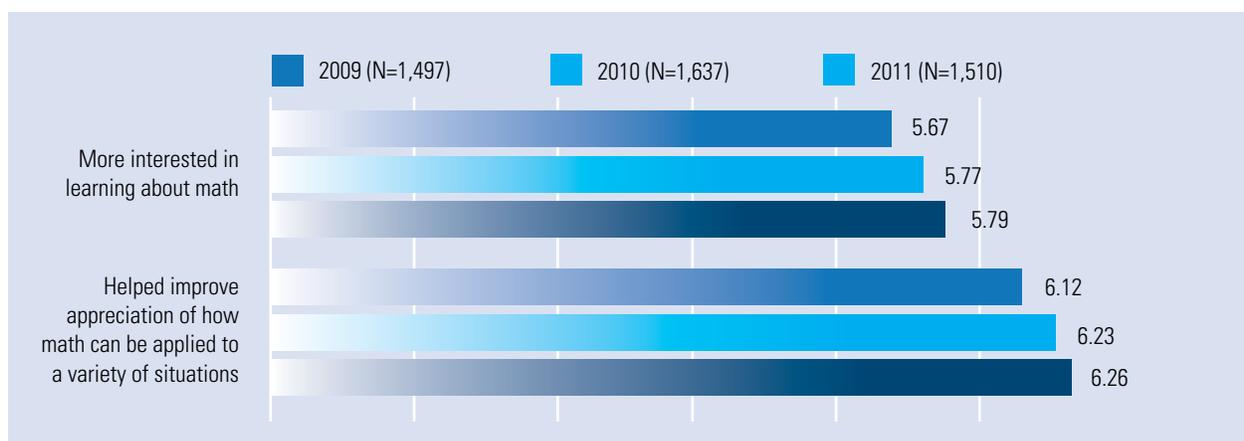
Teacher profiles are also very consistent with past years in that respondents are predominantly fifth-grade teachers with more than two years of experience and few had exposure to the military environment prior to their DoD STARBASE involvement. The analysis indicates that the more vested the teachers 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.

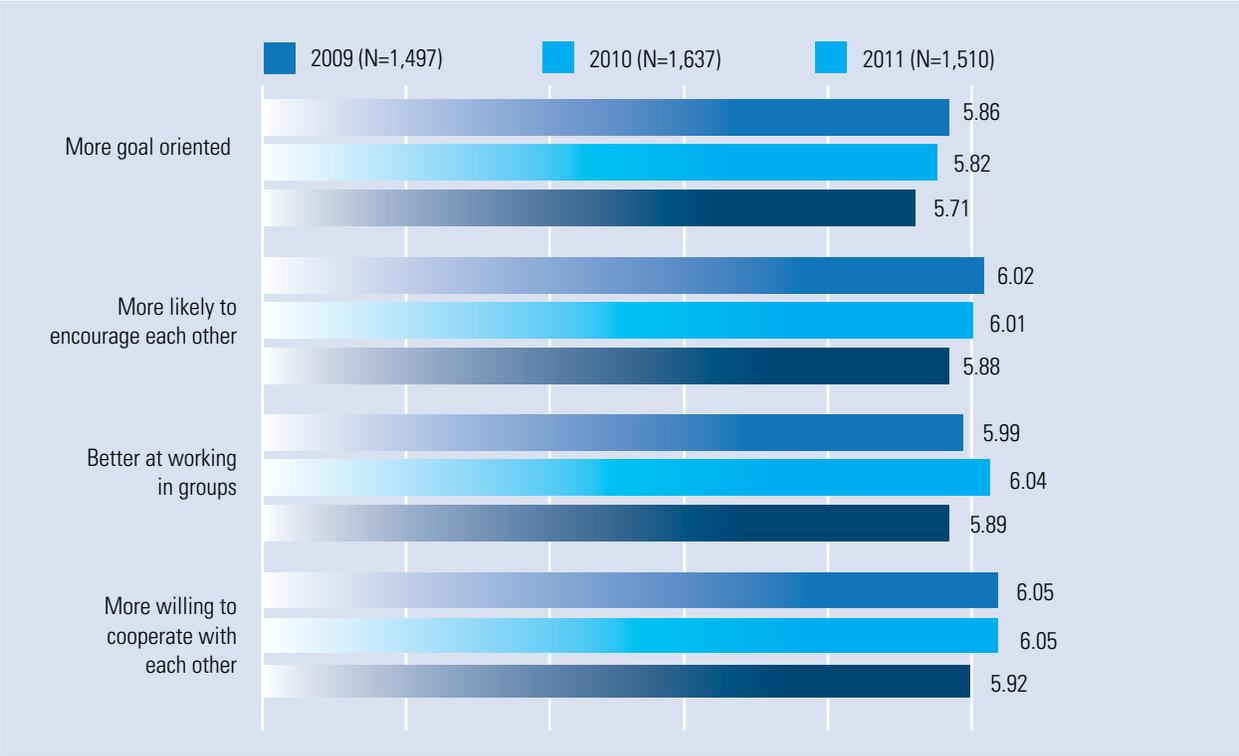
There was a positive shift from scores in 2009 in the teachers' perception on the increases in students' interest in math and an appreciation of how math could be applied (see Exhibit 58). This upward shift in student math attitudes, however, was offset by an attitudinal decrease in those constraints 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.

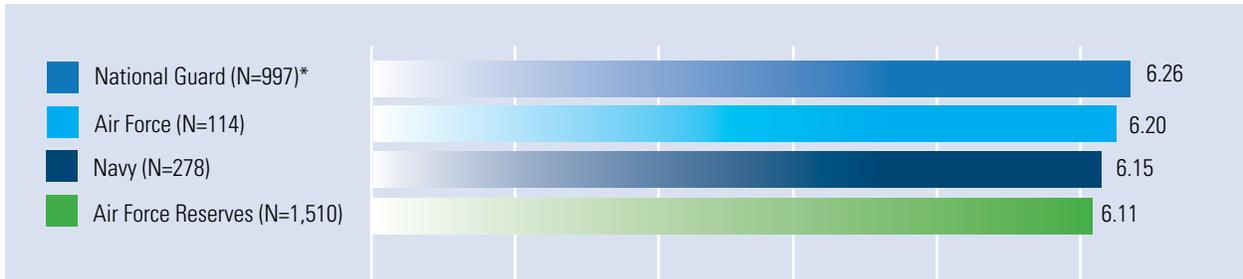
**Classroom Teacher’s Perception on Citizenship Items Over the Past Three Years (2009-2011)**  
**Exhibit 59**



**MILITARY SERVICE BRANCH AND REGIONAL DIFFERENCES**

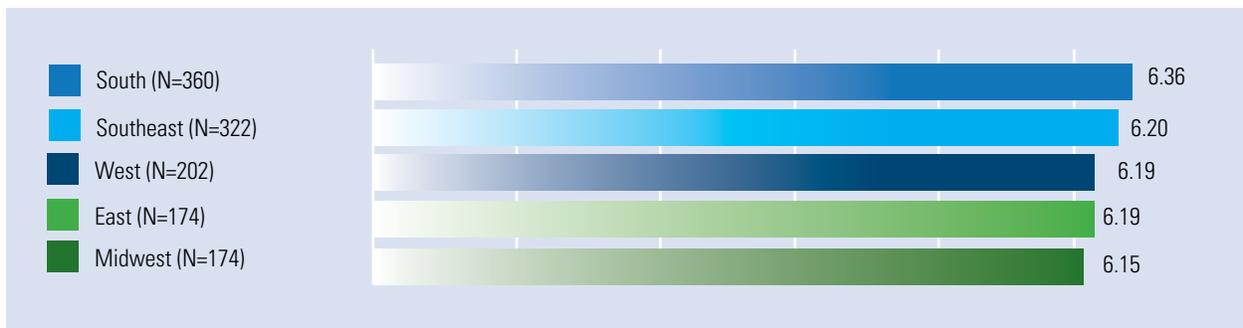
The National Guard hosts the majority of the DoD STARBASE locations and has representation in all five regions. Navy DoD STARBASE locations have similar regional representation but are fewer in number. Responses from four different military branches and five regions were compared (see Exhibits 60 and 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**

Response	2009 (N=1,497)		2010 (N=1,637)		2011 (N=1,510)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
<b>Grade Taught</b>						
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%
<b>Ever visit a military base prior to your current STARBASE involvement?</b>						
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%
<b>Number of years with STARBASE</b>						
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%
<b>Number of years teaching</b>						
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)	Positive (Yes)	Positive (Yes)
	Responses	Responses	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%

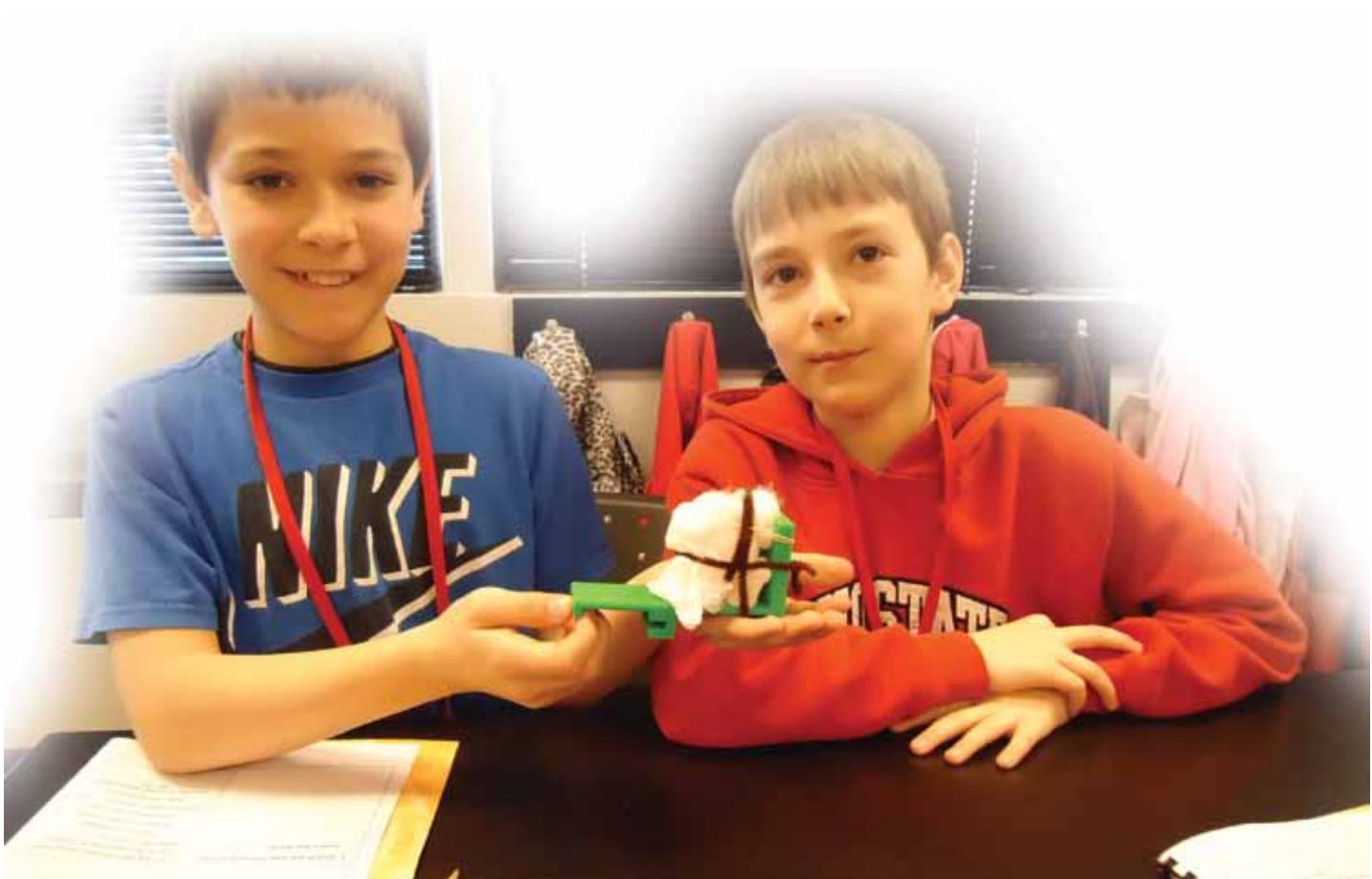
## SCHOOL AND TEACHER INVOLVEMENT

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:

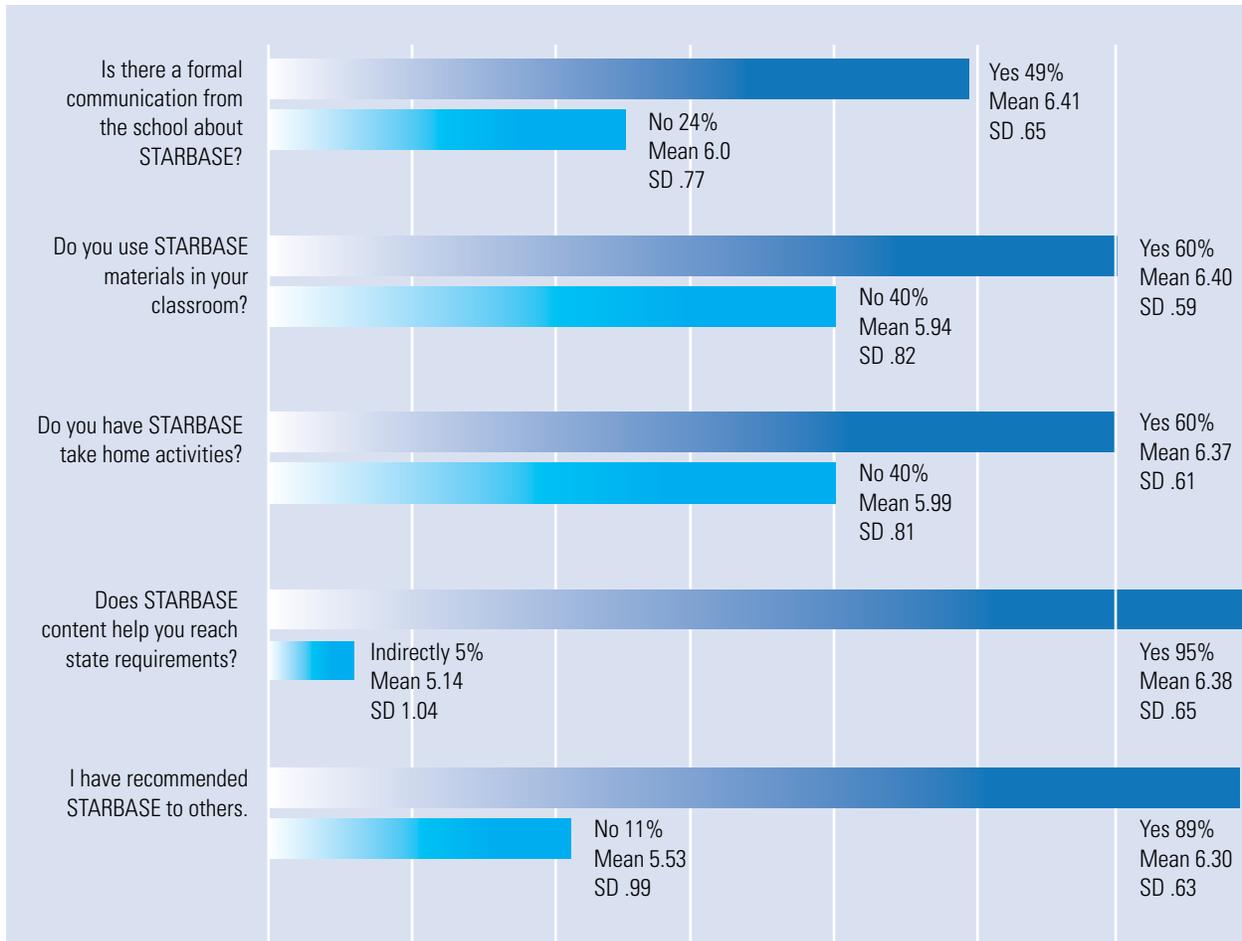
- Formal communication from the school about DoD STARBASE
- Teacher’s use of DoD STARBASE materials in their classrooms
- Teacher utilizes DoD STARBASE materials for “take-home” activities
- DoD STARBASE program helps in meeting state requirements
- Teacher recommends DoD STARBASE to others

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,<sup>8</sup> 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)<sup>9</sup>

Exhibit 65

Overall Index	Year										
	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

Construct Items	Year					Gap Difference 2007-2011(+/-)
	2007	2008	2009	2010	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

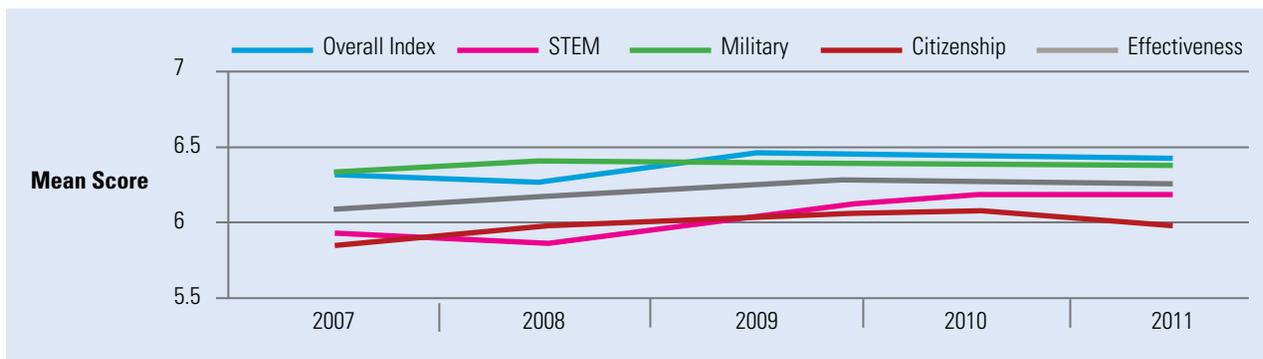
STEM-related activities demonstrated the greatest degree of improvement among the four constructs, and citizenship was the lowest improvement. However, all group scores in the four areas displayed significant gap score improvement (see Exhibit 66 and Exhibit 67). The following exhibit graphically traces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

<sup>8</sup> Details provided within the Student Survey Analysis Report.

<sup>9</sup> 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**

Items	Mean Scores Across Years				
	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<sup>10</sup>

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**



<sup>10</sup> 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

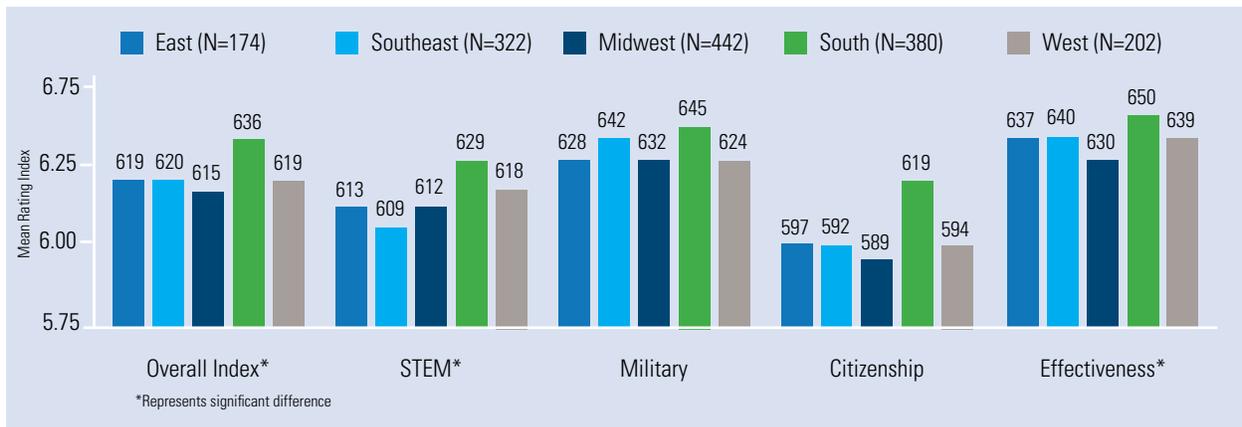
Regional differences are important because of the concentration of DoD STARBASE locations in the South and Southeast and the wide geographic dispersion of the other locations. The teacher survey covers 59 DoD STARBASE locations in five regions (see Exhibit 71).

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 <sup>^</sup>	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**

<sup>^</sup>1,374 teachers that reported teaching grades 4 through 8 were included.

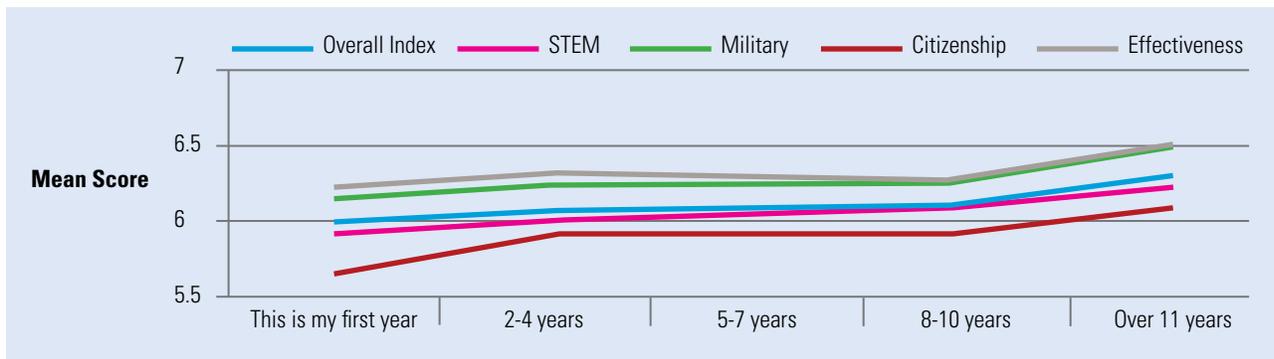
\*\* Correlation is significant at the 0.01 level (2-tailed).

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

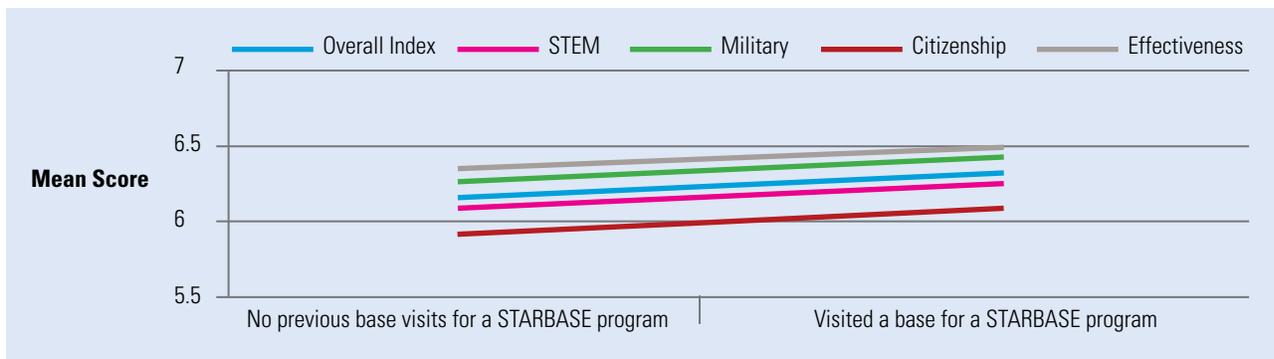
TEACHING EXPERIENCE AND EXPERIENCE WITH DOD STARBASE: SHIFTS IN ATTITUDINAL SURVEY CONSTRUCTS

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**



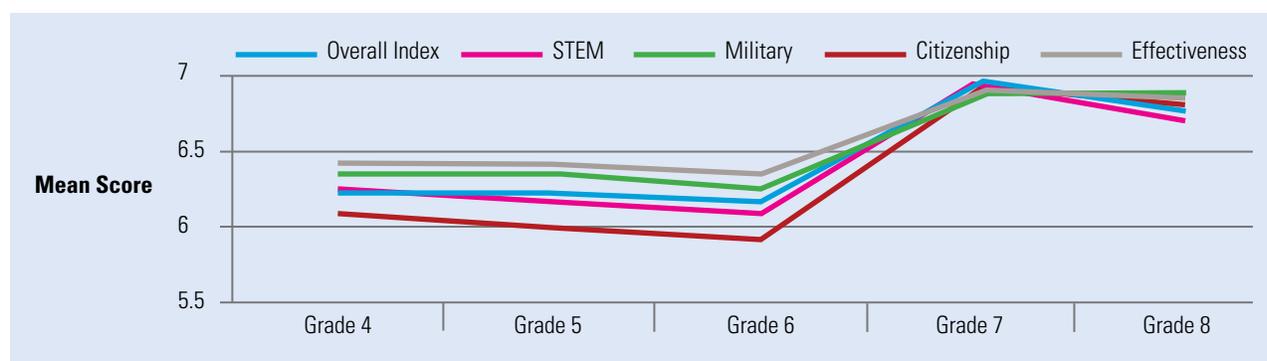
**Shift in Teacher Attitudinal Constructs Based on Number of Years with DoD STARBASE**  
**Exhibit 74**



## 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.

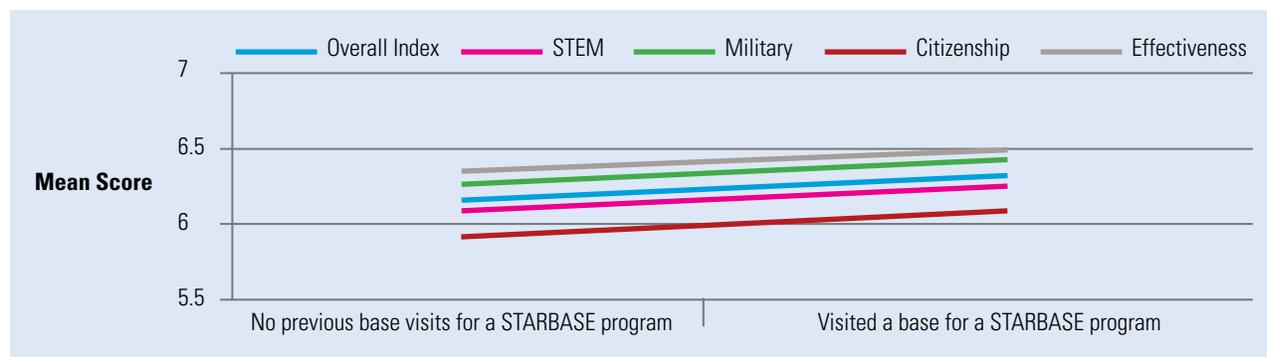
**Shift in Teacher Attitudinal Constructs Based on Educational Experience**  
Exhibit 75



## 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
More interested in learning about math All respondents (n=423)	The STARBASE instructors are good role models for the students	.775
	STARBASE has helped to improve appreciation of how math can be applied to a variety of situations	.576
	(Students are) More goal oriented	.649
STARBASE reinforces many positive behaviors I try to teach my students All respondents (n=423)	(Students are) More interested in learning about science	.680
	The students talk about STARBASE long after the program has ended	.611
	The children enjoy sharing their STARBASE experiences with others	.697
The STARBASE experience will be a positive influence on students in coming years All respondents (n=423)	I use the resources STARBASE provides to teachers	.726
	STARBASE has helped improve the climate for participative learning in the classroom	.741
	The STARBASE instructors are good role models for the students	.574
	The students enjoyed being on a military base	.651
More excited about their futures All respondents (n=423)	The children enjoy sharing their STARBASE experiences with others	.692
	STARBASE has helped improve the climate for participative learning in the classroom	.718
	(Students are) More goal oriented	.626
	The students ask more questions about technology	.681
I look forward to my classes' continued participation in the STARBASE program All respondents (n=423)	(Students are) More excited about learning	.708
	(Students are) More comfortable making decisions	.724
	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.

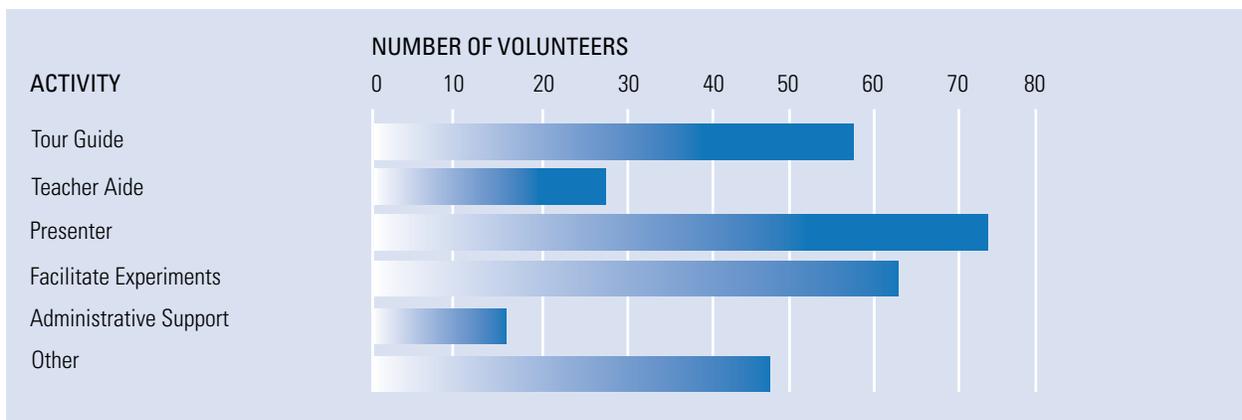
## MILITARY VOLUNTEER SURVEY RESULTS

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 be a source 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 evolvment 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.

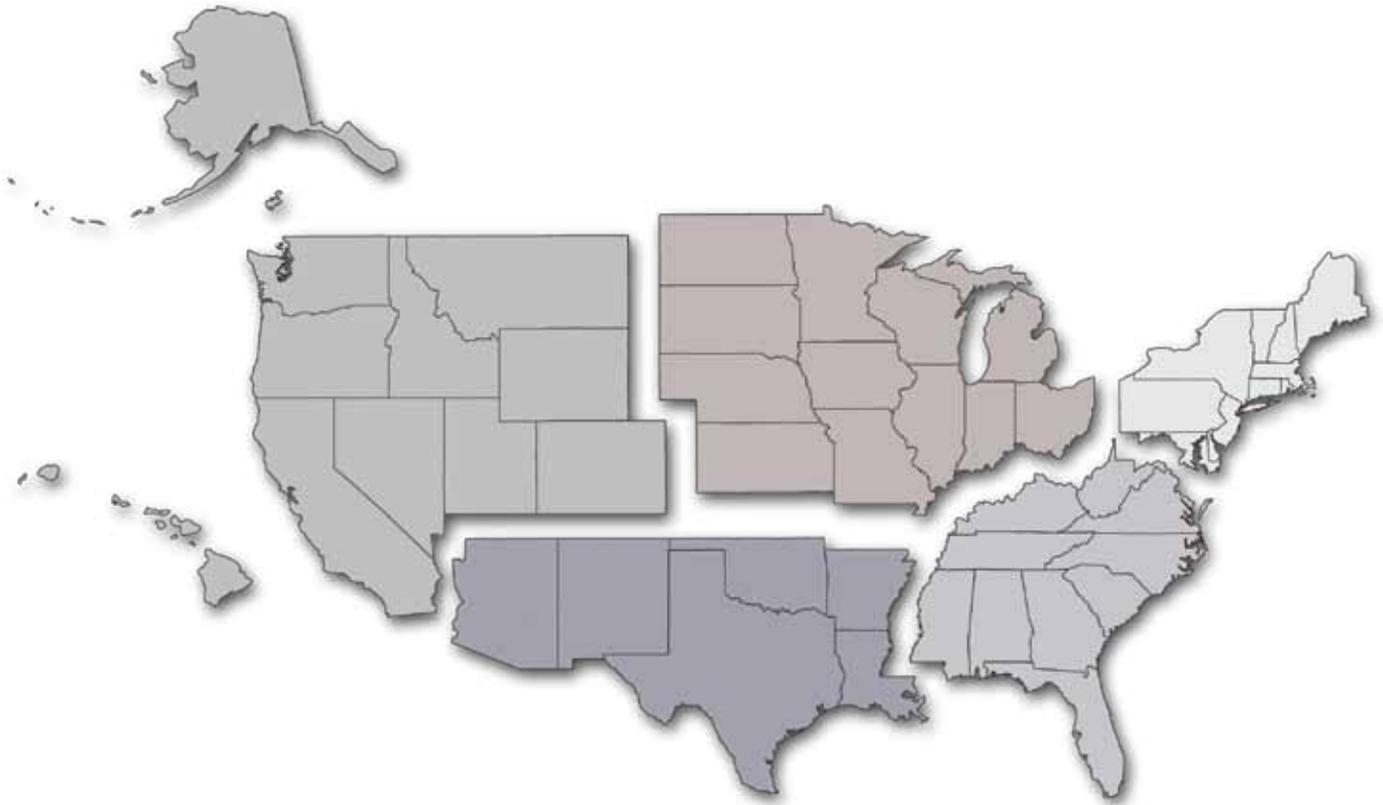
The test development process will continue well into a two-year period as the curriculum is fully installed and program options are finalized. However, analysis and results on gap score differences on the traditional analytical framework will continue as well as suggestions for testing, item remarks,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



## 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

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?
<input type="text"/>	Choose Here ▼	<input type="text"/>	Choose Here ▼	<input type="text"/>
<input type="text"/>	Choose Here ▼	<input type="text"/>	Choose Here ▼	<input type="text"/>
<input type="text"/>	Choose Here ▼	<input type="text"/>	Choose Here ▼	<input type="text"/>
<input type="text"/>	Choose Here ▼	<input type="text"/>	Choose Here ▼	<input type="text"/>
<input type="text"/>	Choose Here ▼	<input type="text"/>	Choose Here ▼	<input type="text"/>

### 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	<input type="text"/>	<input type="text"/>
Teachers	<input type="text"/>	<input type="text"/>
Parents	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
If other, please explain		
<input style="width: 100%; height: 50px;" type="text"/>		

### 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	<input type="checkbox"/>
Duplication/Printing	<input type="checkbox"/>
Audiovisual Equipment	<input type="checkbox"/>
Teachers as Monitors	<input type="checkbox"/>
Educational Supplies	<input type="checkbox"/>
Communications	<input type="checkbox"/>
Lunches	<input type="checkbox"/>
Graphics	<input type="checkbox"/>
Computers	<input type="checkbox"/>
Other (Please specify below)	<input type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>

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	<input type="text"/>
Principal	<input type="text"/>
Base Commander	<input type="text"/>
Community Leaders	<input type="text"/>
Other	
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

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	<input type="checkbox"/>	<input type="text"/>
Review of potential staff personnel	<input type="checkbox"/>	<input type="text"/>
Budget planning and review	<input type="checkbox"/>	<input type="text"/>
Review of recommendation of subcontractor relationships	<input type="checkbox"/>	<input type="text"/>
Grant writing/submissions	<input type="checkbox"/>	<input type="text"/>
Program planning/annual review	<input type="checkbox"/>	<input type="text"/>
Fundraising/marketing of program	<input type="checkbox"/>	<input type="text"/>
Compliance with DoDi policies and review	<input type="checkbox"/>	<input type="text"/>
Other (Please specify below)		
<input type="text"/>		<input type="text"/>

## 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	\$ <input type="text"/>	<input type="text"/>
Staff Development	\$ <input type="text"/>	<input type="text"/>
Facilities/Furnishings	\$ <input type="text"/>	<input type="text"/>
Transportation/Travel	\$ <input type="text"/>	<input type="text"/>
Supplies	\$ <input type="text"/>	<input type="text"/>
Equipment	\$ <input type="text"/>	<input type="text"/>
Services	\$ <input type="text"/>	<input type="text"/>
Program/Curriculum Development	\$ <input type="text"/>	<input type="text"/>
Communications/Outreach	\$ <input type="text"/>	<input type="text"/>
Other	\$ <input type="text"/>	<input type="text"/>
Total	\$ <input type="text"/>	<input type="text"/>

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	\$ <input type="text"/>	<input type="text"/>
Donations	\$ <input type="text"/>	<input type="text"/>
State	\$ <input type="text"/>	<input type="text"/>
Other (Please Specify Below)		
<input type="text"/>	\$ <input type="text"/>	<input type="text"/>
<input type="text"/>	\$ <input type="text"/>	<input type="text"/>
<input type="text"/>	\$ <input type="text"/>	<input type="text"/>
Total	\$ <input type="text"/>	<input type="text"/>

## 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	<input type="text"/>	<input type="text"/>
Furnishings	<input type="text"/>	<input type="text"/>
Supplies	<input type="text"/>	<input type="text"/>
Transportation/Travel	<input type="text"/>	<input type="text"/>
Services	<input type="text"/>	<input type="text"/>
Equipment	<input type="text"/>	<input type="text"/>
Communications/ Outreach	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>
Total	<input type="text"/>	<input type="text"/>

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	\$ <input type="text"/>	<input type="text"/>
Donations	\$ <input type="text"/>	<input type="text"/>
State	\$ <input type="text"/>	<input type="text"/>
Other Please Specify Below)		
<input type="text"/>	\$ <input type="text"/>	<input type="text"/>
<input type="text"/>	\$ <input type="text"/>	<input type="text"/>
<input type="text"/>	\$ <input type="text"/>	<input type="text"/>
Total	\$ <input type="text"/>	<input type="text"/>

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

Please indicate your level of agreement with these statements.

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



## 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
<b>STEM-Science, Technology, Engineering, Math</b>	<b>5.95</b>	<b>.91</b>	<b>5.92</b>	<b>.90</b>	<b>6.10</b>	<b>.82</b>	<b>6.17</b>	<b>.82</b>	<b>6.16</b>	<b>.86</b>
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
<b>Citizenship</b>	<b>5.89</b>	<b>.93</b>	<b>6.00</b>	<b>.95</b>	<b>6.06</b>	<b>.90</b>	<b>6.07</b>	<b>.89</b>	<b>5.98</b>	<b>.95</b>
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
<b>More excited about learning</b>	<b>5.97</b>	<b>1.08</b>	<b>6.06</b>	<b>1.09</b>	<b>6.18</b>	<b>1.02</b>	<b>6.18</b>	<b>1.02</b>	<b>6.17</b>	<b>1.02</b>
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
<b>More willing to cooperate with each other</b>	<b>5.86</b>	<b>1.09</b>	<b>5.92</b>	<b>1.16</b>	<b>6.05</b>	<b>1.09</b>	<b>6.05</b>	<b>1.06</b>	<b>5.92</b>	<b>1.14</b>
<b>Better at working in groups</b>	<b>5.85</b>	<b>1.17</b>	<b>5.95</b>	<b>1.17</b>	<b>5.99</b>	<b>1.12</b>	<b>6.04</b>	<b>1.09</b>	<b>5.89</b>	<b>1.20</b>
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
<b>Better at following directions</b>	<b>5.41</b>	<b>1.30</b>	<b>5.63</b>	<b>1.33</b>	<b>5.66</b>	<b>1.29</b>	<b>5.67</b>	<b>1.26</b>	<b>5.57</b>	<b>1.35</b>
<b>Effectiveness</b>	<b>6.25</b>	<b>.82</b>	<b>6.26</b>	<b>.71</b>	<b>6.41</b>	<b>.64</b>	<b>6.41</b>	<b>.65</b>	<b>6.39</b>	<b>.67</b>
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). <sup>a</sup>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	National Guard	Navy
Alabama, Montgomery	Alaska, Anchorage	California, San Diego
Arizona, Tucson	California, Sacramento	District of Columbia, Washington
New Mexico, La Luz	Connecticut, Hartford	Florida, Pensacola
North Dakota, Minot	Connecticut, Waterbury	Florida, Pensacola - Whiting Field
Ohio, Wright-Patterson	Florida, Jacksonville	Hawaii, Pearl Harbor
	Georgia, Atlanta - Dobbins	Illinois, Great Lakes
<b>Air Force Reserves</b>	Kansas, Kansas City	Maryland, Patuxent River
Georgia, Macon - Robins	Kansas, Salina	Mississippi, Gulfport
Louisiana, Barksdale	Kansas, Topeka	Mississippi, Choctaw Indian Reservation
Texas, San Antonio	Kansas, Wichita Falls	Pennsylvania, Pittsburgh
	Louisiana, Pineville	Rhode Island, Newport
<b>Marines</b>	Maine, Bangor	Texas, Corpus Christi
South Carolina, Beaufort	Michigan, Battle Creek	Virginia, Norfolk
	Michigan, Selfridge	Washington, Silverdale
	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	



## 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
<b>Overall Index</b>	<b>6.20</b>	<b>6.11</b>	<b>6.26</b>	<b>6.15</b>	<b>6.19</b>	<b>6.20</b>	<b>6.15</b>	<b>6.36</b>	<b>6.19</b>
<b>STEM-Science, Technology, Engineering, &amp; Math</b>	<b>6.04</b>	<b>6.08</b>	<b>6.21</b>	<b>6.06</b>	<b>6.13</b>	<b>6.09</b>	<b>6.12</b>	<b>6.29</b>	<b>6.18</b>
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
<b>Military/Military Personnel/Military Careers</b>	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
<b>Citizenship and Pro-social Attitudes</b>	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
<b>STARBASE Effectiveness/Impact</b>	<b>6.38</b>	<b>6.26</b>	<b>6.43</b>	<b>6.31</b>	<b>6.37</b>	<b>6.40</b>	<b>6.30</b>	<b>6.50</b>	<b>6.39</b>
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	<b>6.65</b>	<b>6.63</b>	<b>6.86</b>	<b>6.79</b>	6.85	6.78	6.77	6.83	6.87
The STARBASE curriculum supports our state standards	<b>6.50</b>	<b>6.65</b>	<b>6.78</b>	<b>6.60</b>	6.65	6.74	6.69	6.72	6.80
The STARBASE experience has been a positive influence on me personally	<b>6.61</b>	<b>6.47</b>	<b>6.76</b>	<b>6.70</b>	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	<b>6.61</b>	<b>6.28</b>	<b>6.66</b>	<b>6.44</b>	6.68	6.50	6.58	6.62	6.58
My principal is a strong advocate of STARBASE	<b>6.42</b>	<b>6.26</b>	<b>6.45</b>	<b>6.23</b>	6.48	6.37	6.33	6.48	6.34
I would like more STARBASE resources to take back to my classroom	<b>6.39</b>	<b>5.87</b>	<b>6.48</b>	<b>6.10</b>	<b>6.13</b>	<b>6.29</b>	<b>6.29</b>	<b>6.57</b>	<b>6.42</b>
STARBASE has helped improve the climate for participative learning in the classroom	6.11	6.05	6.13	6.00	<b>6.10</b>	<b>6.07</b>	<b>5.92</b>	<b>6.34</b>	<b>6.12</b>
I use the resources STARBASE provides to teachers	6.06	5.83	6.09	6.05	<b>6.18</b>	<b>6.09</b>	<b>5.77</b>	<b>6.25</b>	<b>6.21</b>
Students who attend STARBASE perform better on standardized state assessments	5.91	5.94	6.06	5.94	<b>5.73</b>	<b>6.12</b>	<b>5.88</b>	<b>6.35</b>	<b>5.85</b>
My school board is very involved in supporting STARBASE	<b>5.96</b>	<b>6.14</b>	<b>5.70</b>	<b>5.64</b>	<b>5.51</b>	<b>6.02</b>	<b>5.54</b>	<b>6.00</b>	<b>5.42</b>
I have included many STARBASE resources in my curriculum	5.73	5.62	5.74	5.71	<b>5.83</b>	<b>5.72</b>	<b>5.37</b>	<b>6.00</b>	<b>5.92</b>

*Bolded items represent statistically significant difference in means*

# Pre-Flight and Post-Flight Questionnaire 2011

63  
62  
61  
60  
59  
58  
57  
56  
55  
54  
53  
52  
51  
50  
49  
48  
47  
46  
45  
44  
43  
42  
41  
40  
39  
38  
37  
36  
35  
34  
33  
32  
31  
30  
29  
28  
27  
26  
25  
24  
23  
22  
21  
20  
19  
18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

**ASSIGNED STUDENT NUMBER**

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

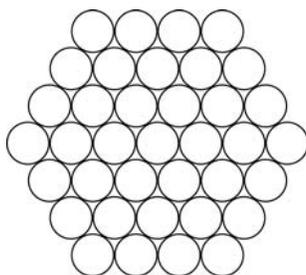
I am a:  Boy  
 Girl

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<sub>2</sub> (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

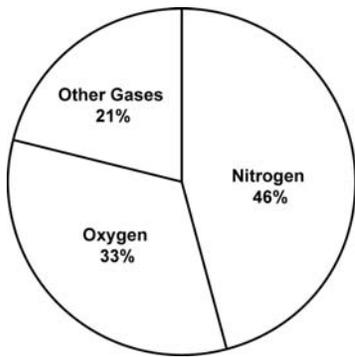


[SERIAL]

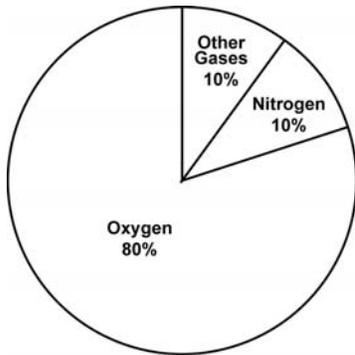
63  
62  
61  
60  
59  
58  
57  
56  
55  
54  
53  
52  
51  
50  
49  
48  
47  
46  
45  
44  
43  
42  
41  
40  
39  
38  
37  
36  
35  
34  
33  
32  
31  
30  
29  
28  
27  
26  
25  
24  
23  
22  
21  
20  
19  
18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

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

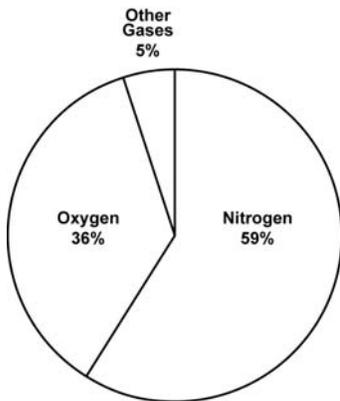
(A)



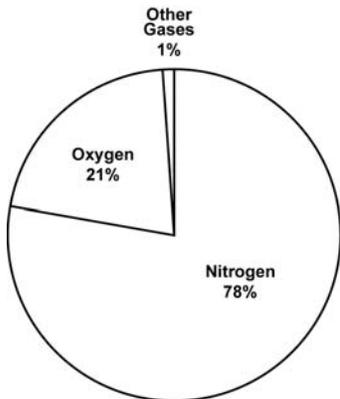
(B)



(C)



(D)

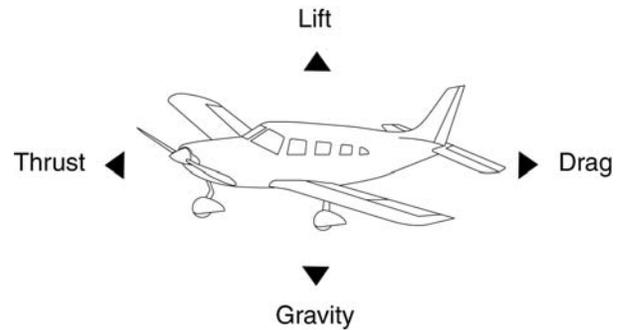


6. Air presses down 14.7 pounds on every inch of our bodies. Why don't we feel this pressure?

- (A) The atmosphere cushions the weight of the air.
- (B) Our bodies push out 14.7 pounds on every inch to equalize the pressure.
- (C) We are inside a building, so we don't feel it.
- (D) 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?

- (A) The objects will move away from each other.
- (B) The objects will move towards each other.
- (C) The objects will not move since the air or water is not hitting them directly.
- (D) 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?

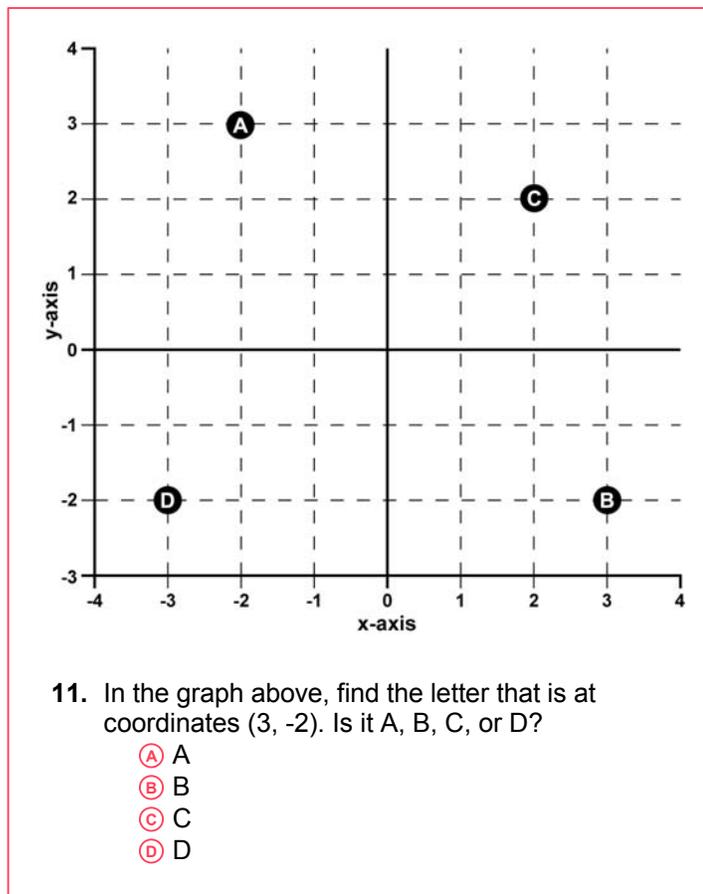
- (A) Lift
- (B) Thrust
- (C) Gravity
- (D) Drag

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

- (A) Lift
- (B) Gravity
- (C) Drag
- (D) 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?
- (A) 300 milliliters
  - (B) 350 milliliters
  - (C) 400 milliliters
  - (D) 450 milliliters



12. When measuring the amount of liquid in a bottle of water, what unit of measurement is most commonly used?
- (A) Meter
  - (B) Gram
  - (C) Liter
  - (D) Celsius
13. A red blood cell is about 10,000 nanometers in diameter. What would this be in meters?
- (A)  $1 \times 10^{-13}$  meters
  - (B)  $1 \times 10^{-9}$  meters
  - (C)  $1 \times 10^{-5}$  meters
  - (D)  $1 \times 10^{-3}$  meters

14. One reason an airplane is able to gain lift is because the air moving across the top of the wing....
- (A) exerts less pressure than the air moving along the bottom.
  - (B) exerts more pressure than the air moving along the bottom.
  - (C) exerts the same amount of pressure as air moving along the bottom.
  - (D) does not exert any pressure on the wing.
15. What scientific law is operating that makes it important to wear a seat belt?
- (A) Newton's Law of Inertia which explains that the greater the mass of an object, the greater the force needed to accelerate it.
  - (B) Newton's Law of Inertia which explains that an object in motion will stay in motion unless acted upon by an outside force.
  - (C) Newton's Third Law of Motion that states for every action there is an equal and opposite reaction.
  - (D) 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?
- (A) The heavier rocket would go the highest.
  - (B) The lighter rocket would go the highest.
  - (C) The two rockets would go the same height.
  - (D) 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?
- (A) Solid
  - (B) Liquid
  - (C) Gas
  - (D) Plasma
18. Which of the following has properties similar to the properties of air?
- (A) A truckload of sand
  - (B) A sea of water
  - (C) A hunk of aluminum metal
  - (D) A field of grass

Wait for your instructor to read the directions and questions.

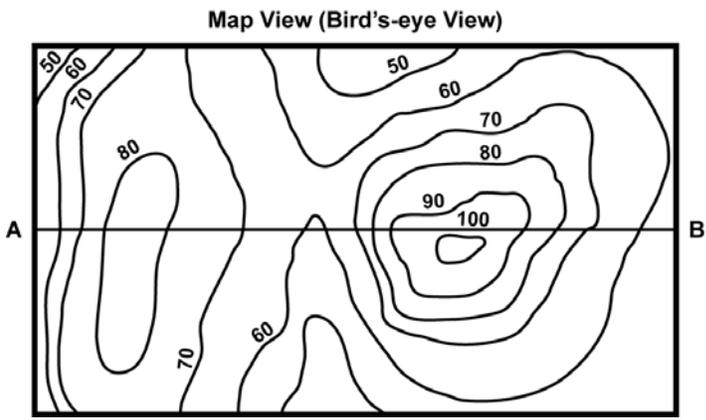
PLEASE DO NOT WRITE IN THIS AREA



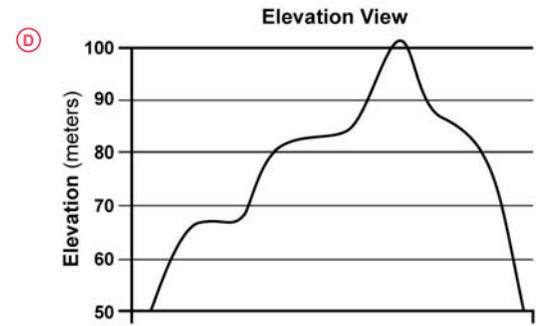
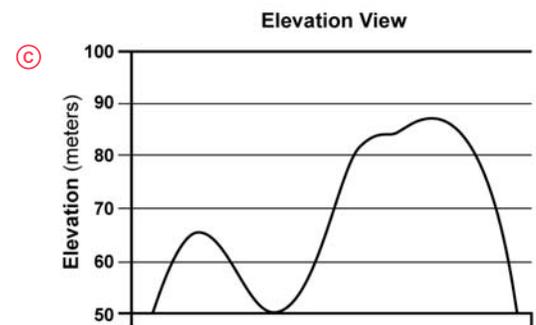
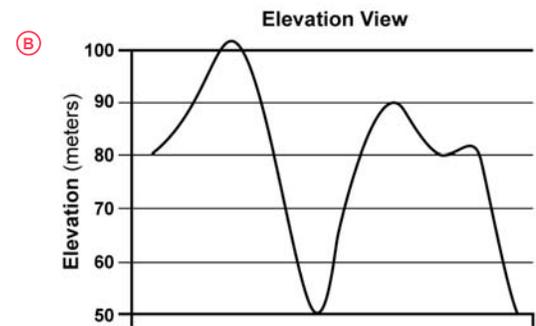
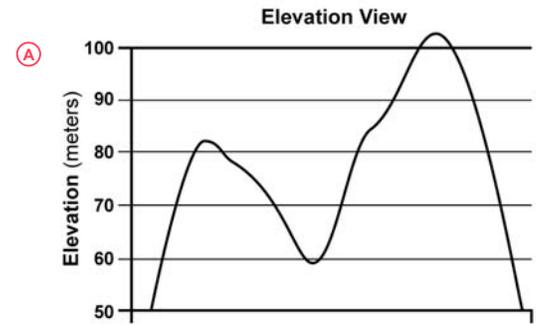
[SERIAL]

63  
62  
61  
60  
59  
58  
57  
56  
55  
54  
53  
52  
51  
50  
49  
48  
47  
46  
45  
44  
43  
42  
41  
40  
39  
38  
37  
36  
35  
34  
33  
32  
31  
30  
29  
28  
27  
26  
25  
24  
23  
22  
21  
20  
19  
18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

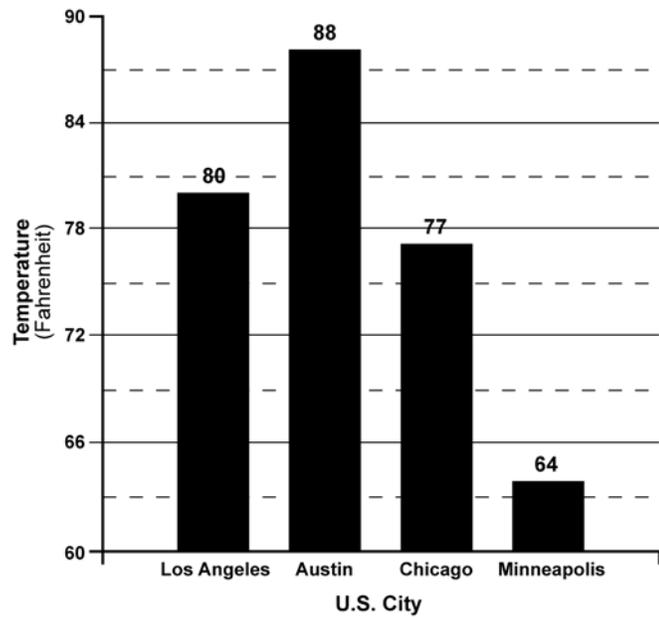
19. A student wants to find out which type of sponge holds the most water. He uses four identical containers with holes in the bottom. He puts a different type of sponge in each container and pours the same amount of water in each container. How can he find out how much water each sponge absorbs?
- (A)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



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



Average May Temperature in U.S. Cities



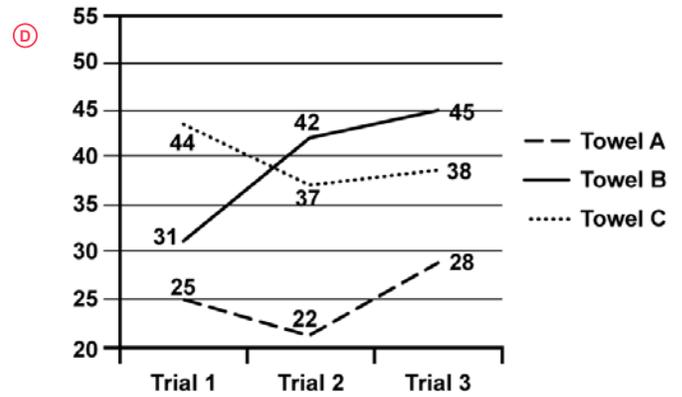
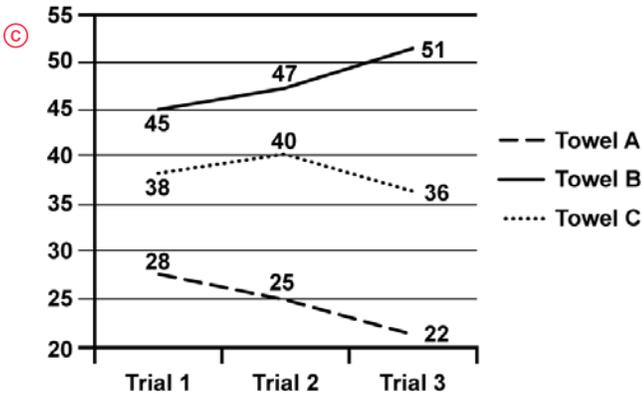
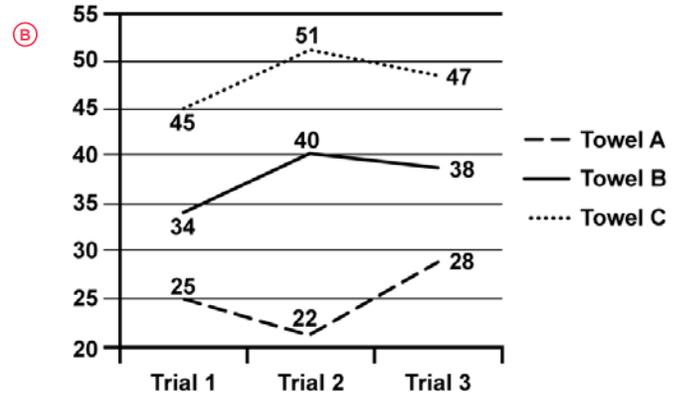
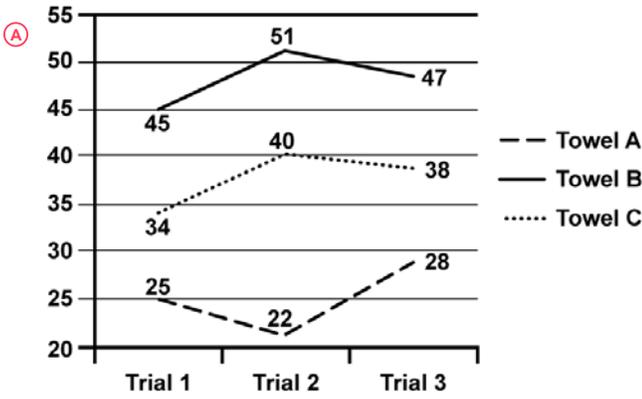
20. What conclusion can be drawn from the above bar chart?
- (A) Austin's average May temperature is 10 degrees warmer than Los Angeles.
  - (B) Austin has the warmest average temperature and Minneapolis has the coolest average temperature in May.
  - (C) Chicago's average May temperature is 4 times warmer than Minneapolis.
  - (D) Los Angeles had a warmer spring than expected.

Wait for your instructor to read the directions and questions.

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

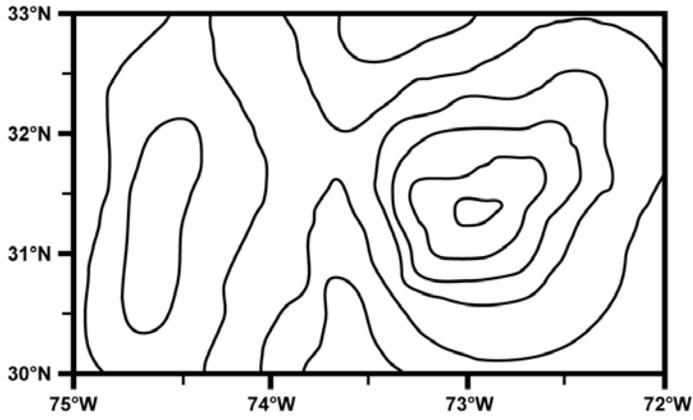


23. An engineer is testing how well three different towels absorb liquids over three trials. For the three trials, Towel A absorbed 25, 22, and 28 milliliters, Towel B absorbed 34, 40, and 38 milliliters, and Towel C absorbed 45, 51, and 47 milliliters. Select the graph that correctly represents the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



Wait for your instructor to read the directions and questions.

63  
62  
61  
60  
59  
58  
57  
56  
55  
54  
53  
52  
51  
50  
49  
48  
47  
46  
45  
44  
43  
42  
41  
40  
39  
38  
37  
36  
35  
34  
33  
32  
31  
30  
29  
28  
27  
26  
25  
24  
23  
22  
21  
20  
19  
18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

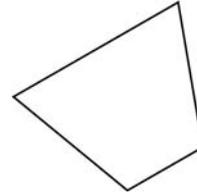


24. You are biking on a path and stop at GPS coordinates of  $31^{\circ} 50' 48''$  N and  $74^{\circ} 20' 18''$  W. Which direction should you head if you want to reach coordinates of  $31^{\circ} 50' 48''$  N and  $74^{\circ} 0' 0''$  W?
- (A) North
  - (B) South
  - (C) East
  - (D) West

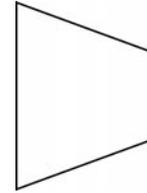
25. Compared to the first solid trapezoid, select the trapezoid that has been rotated 90 degrees.



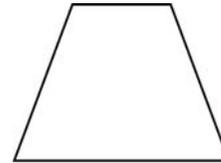
(A)



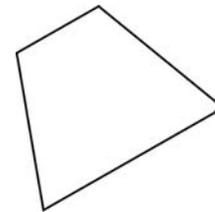
(B)



(C)



(D)



Wait for your instructor to read the directions and questions.

PLEASE DO NOT WRITE IN THIS AREA



[SERIAL]

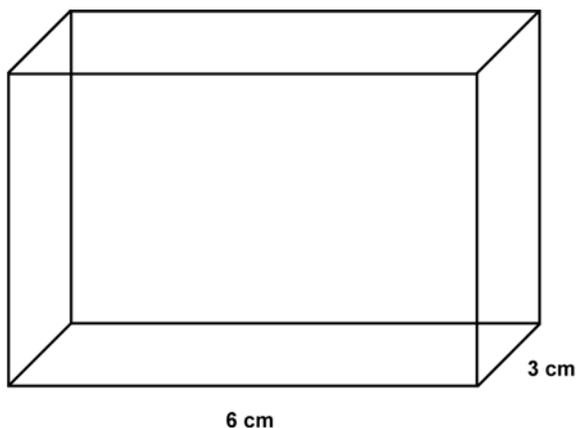


26. Which of the following is an example of chemical change?

- (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.

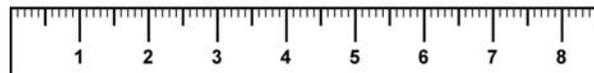
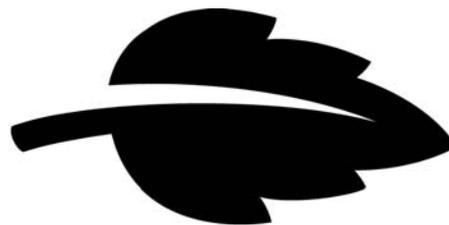


28. What is the volume of the above container?

- (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



centimeters

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

63  
62  
61  
60  
59  
58  
57  
56  
55  
54  
53  
52  
51  
50  
49  
48  
47  
46  
45  
44  
43  
42  
41  
40  
39  
38  
37  
36  
35  
34  
33  
32  
31  
30  
29  
28  
27  
26  
25  
24  
23  
22  
21  
20  
19  
18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

# 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 month 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

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

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

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

N = the sample size

2. Standard deviation: measure of the average deviation of each score from the mean

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

n = the sample size.

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

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

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

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

$$r_{12} = \frac{[\sum Y_1 * Y_2 - \sum Y_1 * \sum Y_2 / N] / (N-1)}{s_{y_1} s_{y_2}}$$

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

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

Y = the predicted value of the dependent variable.

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

b = the regression coefficients for the predictors.

X = the value of the predictor variable



## 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 Cathedral 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

**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

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](mailto:donna.eichling@navy.mil)

Website: [www.cnet.navy.mil/comunity/starbase/sa.html](http://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](mailto:donna.eichling@navy.mil)

Website: [www.cnic.navy.mil/WhitingField/programs/TenantActivities/StarbaseAtlantis/index.htm](http://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

**School Districts & Schools****District: Kea'au - Ka'u – Pahoia (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  
 Pahoia 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](mailto:director@kansasstarbase.org)  
Website: [www.kansasstarbase.org](http://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](mailto:director@kansasstarbase.org)  
Website: [www.kansasstarbase.org](http://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 Public 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

**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

*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  
Leonardtwn 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

**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 Mississippi - 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

*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 School

*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.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  
 Codrington 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

**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 Borromeo 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: Indianoma Public School District***

Indianoma 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

**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](http://www.mil.state.or.us/starbaseor/starbasepdx/starbase.html)**

- 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

***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***

Damascus 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

***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](mailto:starbase.ken.mechlingjr@comcast.net)**

**Website: [www.starbase-atlantis-pittsburgh.org](http://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

*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](http://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

**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  
 Pritcherville 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: Smeeth 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

**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 Elementary 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 Elementary School  
Hutchins Elementary School

***District: Southwest Independent School District***

Elm Creek Elementary School  
Sky Harbour Elementary School

***District: Private Schools***

The Carver Academy

**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/](https://www.netc.navy.mil/centers/slc/ttfbangor/pers_dev/starbase/starbase.htm)

[ttfbangor/pers\\_dev/starbase/starbase.htm](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

***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

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

**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](mailto:wvang.starbase@ang.af.mil)

Website: [www.wvstarbase.org](http://www.wvstarbase.org)

***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](mailto:sherra.triggs@ang.af.mil)

Website: [www.wvstarbase.org](http://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

***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](mailto:brianw@starbasewy.org)

Website: [www.starbasewy.org](http://www.starbasewy.org)

#### *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

### *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



This page was intensely left blank.





**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](http://www.dodstarbase.org)**