

If you can
DREAM it...
...**STEAM**
can build it.



ANNUAL REPORT 2023

'23

DoD STARBASE

VISION & MISSION

DoD STARBASE is a premier educational program, sponsored by the Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs. At DoD STARBASE, students participate in challenging “hands-on, minds-on” activities in Science, Technology, Engineering, Art and Design, and Mathematics (STEAM). They interact with military personnel to explore careers and observe STEAM applications in the “real world.” The program provides students with 25 hours of stimulating experiences at Air Force, Air Force Reserve, Army, National Guard, Navy, and Space Force bases across the nation, Guam, and Puerto Rico.

Vision Statement

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

Mission Statement

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

DoD STARBASE

CURRICULUM

Science



- A. Science Fundamentals
- B. Characteristic Properties
- C. Motion & Force
- D. Science Explorations



Technology

- A. Applying Technology



Engineering

- A. Engineering Design Process
- B. 3-D Computer-Aided Design



Art & Design

- A. Creative Design Using 3-D Software



Mathematics

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



Science, Technology, Engineering, Art and Design, and Mathematics (STEAM) Careers

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

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“Working with the students at STARBASE was a great experience being able to speak to the next generation of engineers and scientists that will take on the challenges of tomorrow. In all my years of presenting at the corporations where I have worked, I believe this was the most challenging presentation I’ve made as I wasn’t presenting a solution or asking for project funding but rather trying to explain why I enjoy what I do so much. Thank you and the STARBASE team for working to inspire these children to follow their dreams.”

- MARK HILBORN,
 SENIOR STRUCTURES ENGINEER,
 UN COUNTRY AIRLINES,
 PARTNER WITH STARBASE
 MINNESOTA-ST. PAUL

All photo and name releases have been obtained and are on file with the STARBASE programs providing the images.

DoD STARBASE | FY2023

at a Glance

\$47,949,906
Program Operating Budget

\$571,206
Median Operating Cost per Location

104,829
Students Served in 2023
Basic and Required Supplemental Programs

1,678,127*
Students Served in all DoD STARBASE Programs Since 1993

*Basic, Required Supplemental and DoD STARBASE Advanced Programs

84 DoD STARBASE Locations in 37 States and 2 Territories

Students Served in DoD STARBASE Advanced Programs

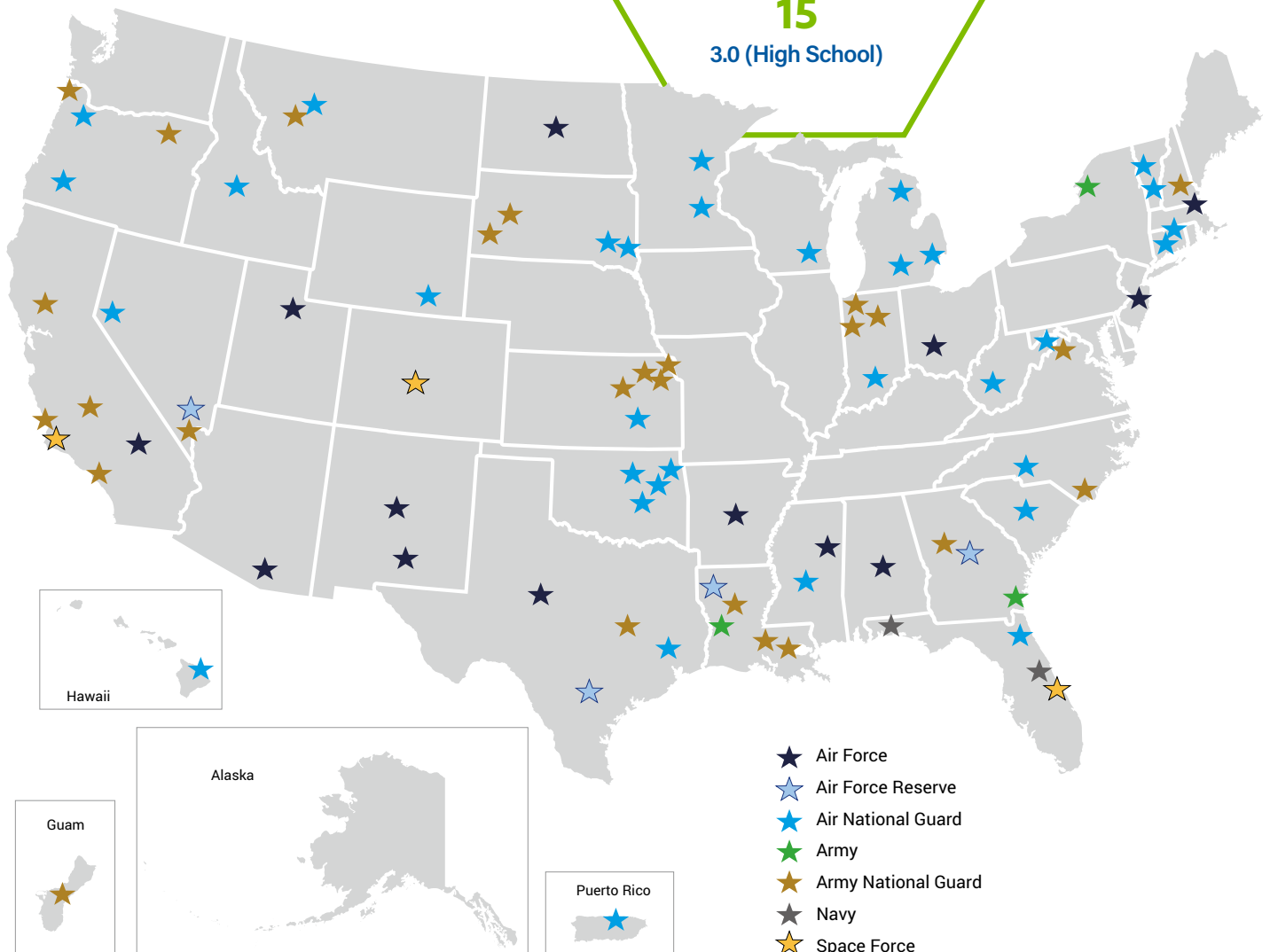
2,990
2.0 (Middle School)

535
3.0 (High School)

DoD STARBASE Advanced Program Locations

54
2.0 (Middle School)

15
3.0 (High School)



- ★ Air Force
- ★ Air Force Reserve
- ★ Air National Guard
- ★ Army
- ★ Army National Guard
- ★ Navy
- ★ Space Force

DoD STARBASE Locations

ST	Service Component Sponsor	Academy
AL	Air Force	STARBASE Maxwell
AR	Air Force	STARBASE Arkansas
AZ	Air Force	STARBASE Arizona
CA	Air Force	STARBASE Edwards
	Army National Guard	STARBASE Los Alamitos
	Army National Guard	STARBASE Porterville
	Army National Guard	STARBASE Sacramento
	Army National Guard	STARBASE San Luis Obispo
	Space Force	STARBASE Vandenberg
CO	Space Force	STARBASE Peterson
CT	Air National Guard	STARBASE Waterbury
	Air National Guard	STARBASE Connecticut Windsor Locks
FL	Air National Guard	STARBASE Florida
	Space Force	STARBASE Patrick
	Navy	STARBASE Central Florida
	Navy	STARBASE Pensacola
GA	Air Force Reserve	STARBASE Robins
	Army	STARBASE Savannah
	Army National Guard	Peach State STARBASE
GU	Army National Guard	STARBASE Guam
HI	Air National Guard	STARBASE Hawai'i
ID	Air National Guard	STARBASE Idaho
IN	Air National Guard	STARBASE Indiana - Fort Wayne
	Army National Guard	STARBASE Indiana - Gary
	Army National Guard	STARBASE Indiana - Indianapolis
	Army National Guard	STARBASE Indiana - South Bend
KS	Air National Guard	STARBASE Wichita
	Army National Guard	STARBASE Kansas City
	Army National Guard	STARBASE Manhattan
	Army National Guard	STARBASE Salina
	Army National Guard	STARBASE Topeka
LA	Air Force Reserve	STARBASE Louisiana
	Army	STARBASE Fort Johnson
	Army National Guard	Bayou State STARBASE
	Army National Guard	Pelican State STARBASE
	Army National Guard	STARBASE Jackson Barracks
MA	Air Force	STARBASE Hanscom
MI	Air National Guard	STARBASE Alpena
	Air National Guard	STARBASE Battle Creek
	Air National Guard	STARBASE One
MN	Air National Guard	STARBASE Minnesota - Duluth
	Air National Guard	STARBASE Minnesota - St. Paul
MS	Air Force	STARBASE Columbus
	Air National Guard	STARBASE Mississippi

ST	Service Component Sponsor	Academy
MT	Air National Guard	STARBASE Great Falls
	Army National Guard	STARBASE Fort Harrison
NC	Air National Guard	STARBASE Charlotte
	Army National Guard	STARBASE Wilmington
ND	Air Force	STARBASE North Dakota
NH	Army National Guard	STARBASE New Hampshire
NJ	Air Force	STARBASE Joint Base McGuire-Dix-Lakehurst
NM	Air Force	STARBASE Holloman
	Air Force	STARBASE New Mexico
NV	Air National Guard	STARBASE High Sierra
	Army National Guard	STARBASE Henderson
	Air Force Reserve	STARBASE Nellis
NY	Army	STARBASE Fort Drum
OH	Air Force	STARBASE Wright-Patt
OK	Air National Guard	STARBASE Oklahoma - Burns Flat
	Air National Guard	STARBASE Oklahoma - Fort Sill
	Air National Guard	STARBASE Oklahoma - Oklahoma City
	Air National Guard	STARBASE Oklahoma - Tulsa
OR	Air National Guard	STARBASE Kingsley
	Air National Guard	STARBASE Portland
	Army National Guard	STARBASE Camp Rilea
	Army National Guard	STARBASE Rees
PR	Air National Guard	STARBASE Puerto Rico
SC	Air National Guard	STARBASE Swamp Fox
SD	Air National Guard	STARBASE NOVA Courage
	Air National Guard	STARBASE Sioux Falls
	Army National Guard	STARBASE NOVA Honor
	Army National Guard	STARBASE Rapid City
TX	Air Force	STARBASE Goodfellow
	Air Force Reserve	STARBASE Kelly
	Army National Guard	Texas STARBASE Houston
UT	Army National Guard	STARBASE Austin
	Air Force	STARBASE Hill
VA	Army National Guard	Winchester STARBASE Academy
VT	Air National Guard	STARBASE Vermont - Rutland
	Air National Guard	STARBASE Vermont - South Burlington
WI	Air National Guard	STARBASE Wisconsin
WV	Air National Guard	West Virginia STARBASE Charleston
	Air National Guard	STARBASE Martinsburg
WY	Air National Guard	Wyoming STARBASE Academy

THE DOD STARBASE CURRICULUM AND THE SHIFT TO STE(+A)M

The Every Student Succeeds Act, Section 4107²⁵ focuses on activities to support well-rounded educational opportunities for students at the elementary and secondary level. STEM education has played a key role in those opportunities. In 2019, Title 10 US Code, Section 2193b was amended to incorporate Art and Design into STEM education offerings, and the basic STEM concept evolved into STEAM. DoD STARBASE has been incorporating art and design throughout the development of curriculum and implementation of instruction since its inception and eagerly embraces the opportunity to officially move forward as a premier STEAM program.

The DoD STARBASE curriculum is standardized, cutting-edge, research-based instruction that meets national educational standards and ensures a qualitative assessment of curriculum outcomes. DoD STARBASE curriculum is designed to increase students' involvement and interest in STEAM activities, enhance their understanding of the role that STEAM literacy plays in their lives, strengthen potential for future careers, and make the pursuit of STEAM activities more attractive and accessible. Curriculum development is aligned with the concepts presented by the Executive Office of the President of the United States. It also supports the Federal STEM Education goal to improve STEM instruction. The DoD STARBASE program was reported to have aligned with all the goals and pathways identified in the strategic plan by The Office of Science and Technology Policy (OSTP). Their findings indicated that the DoD STARBASE program made major contributions and impacts toward the attainment of the following federal goals: "Building strong foundations in STEM literacy; increasing diversity, equity and inclusion in STEM and preparing the STEM workforce for the future." The strategic plan is further organized around four pathways, representing a cross-cutting set of approaches to improve STEM education that will help fulfill its vision and achieve its three goals: through pathways developing and enriching strategic partnerships; engaging students where disciplines converge; and building computational literacy.²⁶

All STARBASE curriculum focuses on an accessible presentation of accurate scientific information, which promotes the development of STEAM skills, knowledge, and practices, thereby supporting the Federal goals of a learning investment. According to the Executive Office of the President, "Basic STEM concepts are best learned at an early age — in elementary and secondary school — because they are the essential prerequisites to career technical training, to advanced college-level and graduate study."²⁷

United States national standards, such as Next Generation Science Standards, International Society for Technology in Education Standards, National Council of Teacher of Mathematics Expectations, and Common Core Mathematics Standards, have influenced the creation of 27 DoD STARBASE learning objectives and various STEAM curriculum activity options. The DoD STARBASE curriculum engages students with rigorous, hands-on, minds-on STEAM lessons. STEAM is intertwined in standardized lesson plan activities and experiments to address real-world issues. Students work in teams simulating a workplace environment and find the learning meaningful and inspiring. For example, while studying the engineering design process, students design and create items with 3-D computer-assisted technology. The student summative assessment tool is applied pre- and post-program to determine if the learning objectives have been met.

²⁵ Every Student Succeeds Act (ESSA) 20 USC 6310 Section 4107a.vi (Public Law 114-95) December 10, 2015.
<https://www.congress.gov/114/plaws/publ95/PLAW-114publ95.pdf>

²⁶ https://dodstem-assets.dodstem.us/files/Final_2022_CoSTEM_Progress_Report.pdf
https://www.whitehouse.gov/wp-content/uploads/2023/02/Final_2022_CoSTEM_Progress_Report.pdf

²⁷ Executive Office of the President of United States, "Charting a Course for Success: America's Strategy for STEM Education, Report by The Committee on STEM Education of the National Science and Technology Council," December 2018. Executive Summary, page v.

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

1. **Parent lesson plans** provide the introductory background, instructional strategies, and materials required to teach the overall concepts of a curriculum topic. These are used in conjunction with lesson plan appendices.
2. **Appendix lesson plans** offer a choice of activities that provide students “hands-on, minds-on” opportunities to understand the introductory material presented in the parent lesson plan. Instructors teach the parent lesson plan and then choose one of the approved appendices to complete the lesson. This allows DoD STARBASE instructors to differentiate their approach to teaching the learning objective.
3. **Activity Station lesson plans** are intended to give students multiple activities to strengthen their understanding of the learning objective. These inquiry-based stations are generally short, and in most cases, a number of stations are taught in conjunction with a curriculum segment.
4. **Stand-Alone lesson plans** are complete, self-contained documents that fully address the stated components of the curriculum objective. They contain the necessary background information, instructional guidance, and support criteria to meet the requirements for the objective.

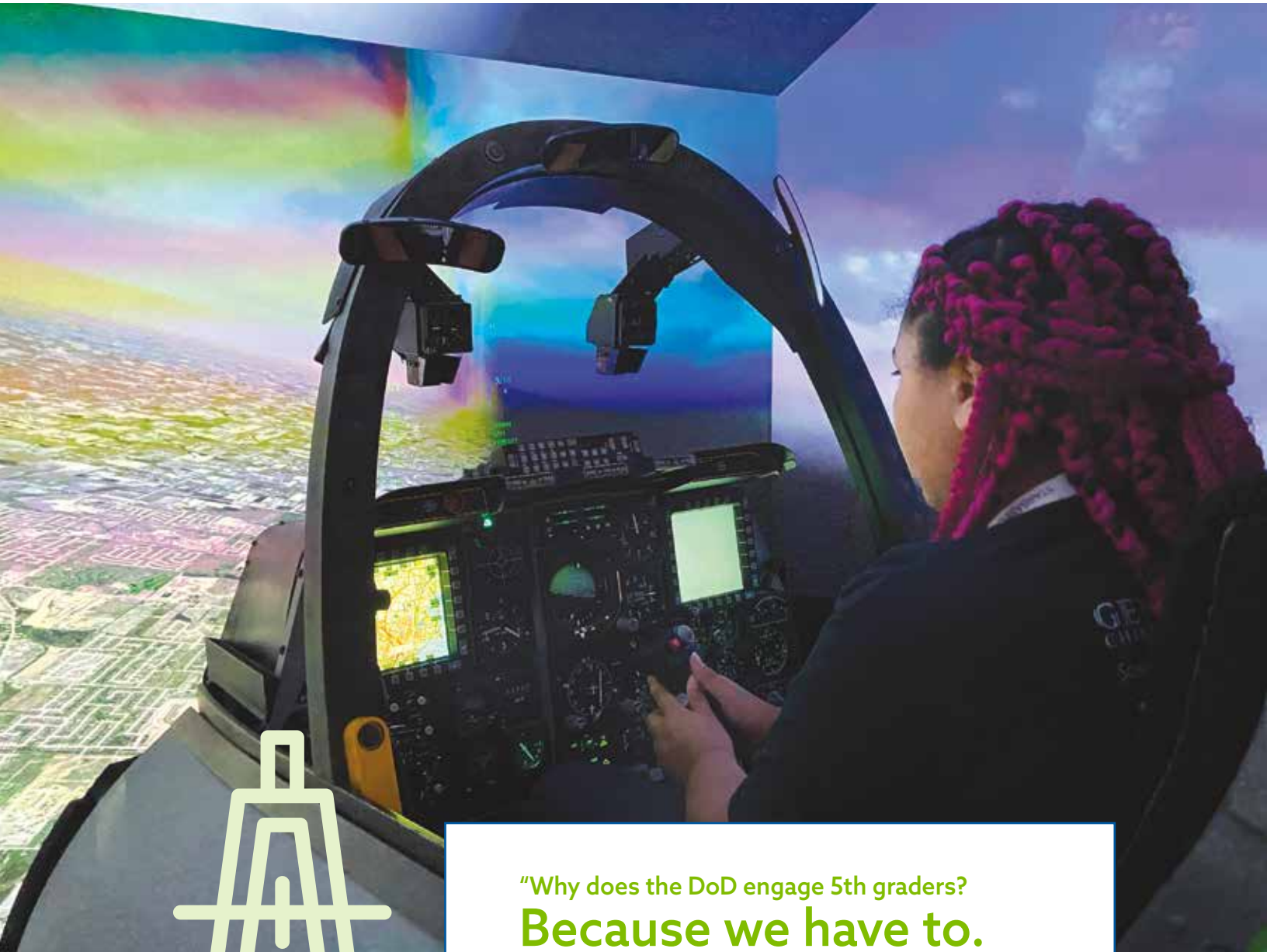
STARBASE utilizes a rigorous process to continuously expand and enhance their curriculum offerings with a peer reviewed evaluation process. DoD STARBASE directors and instructors may choose from multiple approved lesson plans to teach the required 27 objectives. Directors are asked to create a schedule outlining the lessons they have chosen to teach. The schedule also includes any time spent on academy management, student breaks, lunch, and graduation to give an accurate portrayal of how students spend their days at each DoD STARBASE location. Curriculum schedules are submitted annually with the Directors' Questionnaire. They are then verified by a STARBASE Curriculum Advisory Group representative and validated during visitations by the Operational Evaluation team.



“My students were so much more engaged in the curriculum because it had a real-world feel to it. They were doing math and science because they could see it directly impact their experiences and the real-world problems they were trying to solve.”

- SHANE WHALEN,
EDUCATOR AT WILLOW LANE
ELEMENTARY SCHOOL ATTENDING
STARBASE MINNESOTA-ST. PAUL





**“Why does the DoD engage 5th graders?
Because we have to.**
These students are the future of the
Department of Defense and all supporting
industry. We have to get young U.S. citizens
interested in becoming STEM professionals.”

- COL MICHAEL PONTIUS, 307 OPERATIONS GROUP COMMANDER -
STARBASE LOUISIANA

MILITARY LETTER OF SUPPORT

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Topeka, KS 66611-1287



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Brigadier General Michael T. Venerdi
The Adjutant General
Director of Emergency Management
Director of Homeland Security

Laura Kelly, Governor

The future of our nation relies on the education of our children. The Department of Defense STARBASE program in Kansas has been at the forefront of providing hands-on, minds-on learning academies for children for the past 30 years. DoD STARBASE is designed to spark students' interest in Science, Technology, Engineering and Math through engaging, high-tech projects that explore electronics, computer aided design, engineering design, robotics, physics and chemistry, while interacting with Airmen and Soldiers of the Kansas National Guard. Our DoD STARBASE instructors, Soldiers and Airmen connect those STEM experiences with real-world civilian and military applications. I cannot overstate the importance of generating excitement in our youth to help satisfy the demand of a world reliant on these STEM disciplines that are critical for national prosperity and security.



The Kansas DoD STARBASE program epitomizes the Department of Defense's vision to deliver a premier STEM program. We are proud to have one of the largest programs in the country! Located at five sites in Kansas - Kansas City, Manhattan, Salina, Topeka and Wichita - the program has provided a 25-hour STEM curriculum to more than 120,000 students since its inception in 1993. While the programs complement state and national standards, they also provide the type of innovative STEM projects that most schools cannot replicate. Priority is given to schools in underserved and underrepresented areas of our urban and rural communities. Research shows that the demand for STEM professionals has never been higher, and I am proud that our five programs are playing a pivotal role in the solution.

In addition to the school-day program, which is primarily for fifth grade students, and the after-school program for middle school students, over the last four years the DoD STARBASE program has expanded to work with high school students. Kansas DoD STARBASE has been deeply involved in this nation-wide endeavor from the beginning. DoD STARBASE was instrumental in providing engineering and coded robotics training for JROTC cadets across the country during their annual summer camp.

During the past three years, the Kansas DoD STARBASE program has grown from serving 5,000 elementary students each year to 7,500, with the potential to expand even more over the next five years including a new satellite location in Hays. By 2028, we expect to serve approximately 10,000 fifth graders each year.

The DoD STARBASE program inspires the next generation to be innovative problem solvers and the investment in our future is worth it! I will continue to be a strong advocate for the Kansas DoD STARBASE program. I am continually impressed by the professionalism and motivation of the DoD STARBASE staff and their commitment to the success of the statewide and national program. I am proud to be part of a program that has such a positive impact on Kansas youth!

MICHAEL T. VENERDI
Brigadier General, ANG
The Adjutant General, Kansas



MILITARY LETTER OF SUPPORT

Nathan P. Aysta

Colonel, MNANG

“The students graduating from the DoD STARBASE program have a new excitement and understanding for STEM and take with them a newfound confidence in their own abilities.”

- NATHAN P. AYSTA

I AM PROUD to host our DoD STARBASE mission here at the 148th Fighter Wing in Duluth, Minnesota. Every day, our wing members see the next generation growing through deliberate development and ground-level innovative education. This organization is fostering the growth of competitive professionals in our local community, region, and nation. Our DoD STARBASE has a top-notch faculty that work every day to influence our youth.

Over 10,000 students representing 48 schools from 19 school districts in Northeastern Minnesota have participated in DoD STARBASE programs at the 148th Fighter Wing since its inception in 2017. These programs focus on hands-on learning through applied science, technology, engineering, and math (STEM). The curriculum is organized, well-developed, and provides an opportunity for students to grow beyond STEM concepts. Students work in teams to solve problems, develop hypotheses, and test predictions. This format fosters the development of creativity, perseverance, and analytical thinking. Community members and families who experience our Fighter Wing take with them a greater appreciation for STEM and a greater understanding of our nation's military operations and the people who serve in our nation's armed forces.

I personally have a son and daughter who graduated from the DoD STARBASE curriculum. I have no doubt that their experiences with STARBASE will positively influence the rest of their lives. The program that they participated in piqued their interest in STEM and took their love of learning to the next level.

Our wing members take full advantage of the opportunity to partner with our DoD STARBASE program. Airmen and civilian employees regularly participate and directly influence these future leaders by volunteering. Volunteer time is spent speaking at class graduations and helping with interactive lessons in the classroom. Our full-time staff and our traditional guard members graciously donate hundreds of hours each year supporting this partnership. While volunteering, our members showcase their military experience as well as their civilian sector insights.

The students graduating from the DoD STARBASE program have a new excitement and understanding for STEM and take with them a newfound confidence in their own abilities. These critical life skills coupled with the positive military interactions will lead these young, driven students to contribute directly to the DoD, governmental agencies, government contractors, and prominent roles in our nation's workforce. DoD STARBASE is prepping our next generation for success! I am honored the 148th Fighter Wing is a partner with DoD STARBASE to positively impact area youth through meaningful STEM education.

NATHAN P. AYSTA, Colonel, MNANG
Commander, 148th Fighter Wing

PROGRAM OVERVIEW



DoD STARBASE
A Department of Defense Youth Program



EXECUTIVE SUMMARY

The Department of Defense (DoD) STARBASE program provides Science, Technology, Engineering, Art and Design, and Mathematics (STEAM) learning and career awareness experiences to youth at 84 military installations across the United States, Puerto Rico, and Guam. Each year, the conduct and effectiveness of the DoD STARBASE program is evaluated in many ways, including structured interviews, questionnaires, operational evaluations, resource management evaluations, program visits, and conversations with program participants. The program is also evaluated annually in terms of measuring basic STEAM knowledge gained from program participation and improvements in student attitudes toward STEAM subjects in the contexts of school, the military, and career opportunities. Assessments, interviews, and/or questionnaires were received from 2,606 students, 3,681 teachers, and all DoD STARBASE directors. A brief overview of the assessment highlights is provided below.

FY 2023 Highlights

DoD STARBASE Operations

- During FY 2023, funding was provided for three new STARBASE programs: MS - STARBASE Columbus, MS - STARBASE Mississippi (Jackson), NM - STARBASE Holloman.
- DoD STARBASE programs are located at a variety of military installations, including Air Force (13 locations), Air Force Reserve (4 locations), Army (3 locations), National Guard (59 locations), Navy (2 locations) and Space Force (3 locations).
- The median operating cost per location was \$571,206.

DoD STARBASE Basic Program

- During SY 2022-23, 96,280 students attended the basic DoD STARBASE program through 4,012 traditional five-day academies.
- A total of 315 weeks of required supplemental DoD STARBASE programs over school vacation breaks served an additional 8,549 students.
- A total of 1,743 schools from 590 school districts participated in the DoD STARBASE program during SY 2022-23.
- DoD STARBASE programs primarily served students from public schools (86 percent) in urban areas (73 percent) with 77 percent of the participating schools meeting Title 1 requirements. Most of the DoD STARBASE locations (90 percent) serve school districts within a 50-mile radius of their program site.
- The majority of DoD STARBASE students (96 percent) are 5th graders.
- Groups of students underrepresented in STEAM fields and careers served at DoD STARBASE include Females (49 percent), American Indian or Alaskan Native (3 percent), Blacks/African American (21 percent), Hispanic or Latino (25 percent), Low Income Students (62 percent), Students with Disabilities (14 percent), Students who use English as a second language (13 percent). The average instructor to student ratio for FY 2023 was 2:21.
- The average class size for FY 2023 was 24 students. The highest average class size was 30 students at CA - STARBASE Los Alamitos, KS - STARBASE Manhattan, KS - STARBASE Wichita, and NV - STARBASE Henderson.



"STARBASE provides students with the opportunity to investigate STEM topics and skills in a collaborative approach. I love that students become mathematicians, scientists, and engineers and see themselves in that light during our week at STARBASE. Investigations are connected to real-world experiences and careers."

- HOLLY LIGHTCAMP, EDUCATOR AT
EVENDALE ELEMENTARY, ATTENDING
WINCHESTER STARBASE ACADEMY

DoD STARBASE Advanced Program

- In SY 2022-23, 54 DoD STARBASE locations in 27 states and Puerto Rico reported coordinating a total of 138 DoD STARBASE Advanced 2.0 programs and 196 individual STARBASE 2.0 clubs for middle school students.
- Almost 2,990 students participated in STARBASE 2.0 Advanced clubs during SY 2022-23.
- The average student retention rate within the STARBASE 2.0 Advanced programs was 88 percent. Relocations, time conflicts, and lack of interest in the chosen curriculum are cited by directors as the main reasons why students leave the program.
- Former DoD STARBASE students made up 48 percent of the DoD STARBASE 2.0 program participants.
- Fifteen DoD STARBASE locations initiated or continued high school level STARBASE Advanced 3.0 programs for high school students through 19 organized clubs, involving over 535 participants.
- STEAM Coaches (620 coaches) from a variety of professions participated in the DoD STARBASE 2.0 and 3.0 programs to include: Military (43 percent), DoD Science and Engineering coaches (9 percent), non-military/DoD Professionals (7 percent), industry professionals (2 percent), staff members from the school hosting the 2.0 program (20 percent), STARBASE staff members (16 percent), and other (3 percent).
- The DoD STARBASE Advanced programs operate through a combination of federal and private funds.¹ Of the 54 DoD STARBASE Advanced locations, 80 percent operate solely using their federal DoD STARBASE funds. The remaining 20 percent reported receiving additional funding from a combination of non-DoD and private organizations.
- Partnerships involved in the 2.0 program include a wide variety of local and national outreach programs, such as FIRST LEGO League, FIRST Robotics, Civil Air Patrol, The American Rocketry Challenge, Girl Scouts, and Scouts BSA.

Other DoD STARBASE Program Activities

- A total of 147 additional STARBASE STEAM educational activities were conducted for 476 schools/participant groups, 359 of which were considered “at-risk.” A total of 10,174 students and 2,154 adults were reported as participants in these additional initiatives.
- The DoDI requirement to conduct at least four outreach activities per academy was met at 70 of the 76 reporting STARBASE locations. Three additional locations conducted at least one outreach program. These activities include, but are not limited to, providing teacher training, judging science fairs, participating in local STEAM activities/conferences, and informational presentations for local organizations.

DoD STARBASE Staffing

- Contractor affiliations make up 54 percent of the employment relationships, followed by state and federal² affiliations which are at 43 percent and 1 percent, respectively.
- In FY 2023, 49 percent of DoD STARBASE staff have more than three years of DoD STARBASE experience with 29 percent in the one to two-year range and 22 percent new to the STARBASE program with less than one year of experience. Directors and deputy directors/instructors have typically worked with DoD STARBASE for over five years at 57 percent and 48 percent experience, respectively. FY 2023 data indicates that 38 percent of instructors have over two years of STARBASE experience compared to 42 percent a year ago. Most instructors currently fall into the one to two-year range at 36 percent. The experience level of office managers with more than three years with the STARBASE program is 58 percent. Instructional assistants have the least amount of DoD STARBASE experience with 73 percent in their first or second year.
- There were 92 staff departures in FY 2023. This is a 10 percent decrease in the number of employees who left the program in FY 2022 (102 employees). The majority (46 departures) were at the instructor level. Instructional Assistants were the next highest at 24 departures, followed by Director at eight positions, Office Manager at seven positions, Deputy Director at four positions, and “other” positions with three departures. The overall turnover rate in FY 2023 was 19 percent, down from 23 percent a year ago.

¹ Private funds include not-for-profit, donations, grants, and host school contributions.

² STARBASE Edwards is the only location with federal employment affiliations (four employees) in FY 2023.

DoD STARBASE Program Support and Training

- Director's Launch Training (DLT), an orientation tool for new program directors at existing or newly established academies, was provided for 16 Program Directors in FY 2023.
- In FY 2023, seven Brown Bag Training sessions were conducted to provide additional information on high-interest topics.
- Specialized training and staff development was provided on PTC Onshape, Aerial Robotics, Rocketry, Modeling and Simulation and STARBITS.
- STARBASE U continued to expand course offerings as a dedicated internal on-line Learning Management System.

DoD STARBASE Program Volunteers

- The DoD STARBASE locations documented a total of 14,254 volunteers who contributed a total of 191,288 hours, worth an estimated \$6,013,543³ to the program during FY 2023.
- DoD STARBASE directors reported 18,399 hours of support by 3,853 military personnel with an additional 857 hours of support provided by 221 DoD Science and Engineering (DoD S&E) personnel. This is a significant increase from FY 2022 and indicates a steady return to pre-pandemic volunteer participation.



"I had the opportunity to speak at STARBASE this past year sharing my story from growing up in a small town to becoming a C130 Navigator. I incorporated my "3 Life Goals" and the different jobs I worked over a 23-year career in the military. I hope sharing my adventures will contribute to the spark of chasing their dreams to become future aviators."

- MAJ TAMMY "TOGGLE" WAJER, C130 INSTRUCTOR NAVIGATOR, STARBASE GREAT FALLS

Student Assessment FY 2023

- 2,606 mostly fifth-grade students who attended DoD STARBASE in person at 76 STARBASE academies between January and May 2023 anonymously answered questions about their understanding of STEAM concepts and their attitudes toward STEAM-related topics and careers. They also gave their opinions of STARBASE and military settings.
- Student performance on STEAM knowledge questions improved significantly from the pre- to post-program, with 15 percent more correct answers on average. The gain was particularly evidenced by increases of 21 percent in answering engineering questions correctly and 19 percent for science questions related to motion and force.
- Students' positive opinions of STEAM rose on all of the attitude questions, of which 95 percent were significant increases. The largest shifts were toward greater science confidence, understanding that engineers solve challenging problems, awareness of jobs using STEAM — including military, and belief that the STARBASE experience will be helpful in school.
- Analyses found that students with prior exposure to military personnel achieved significantly higher knowledge scores, both pre- and post-program, and also attained greater improvements in STEAM knowledge. Even so, students who have no prior military exposure made significant STEAM improvements, too, though their gains were smaller.
- Students who had prior experience with military personnel also showed significantly more favorable pre-program and post-program attitudes about STEAM, including feeling that learning about science is easy, being good at mathematics, realizing that engineers help solve challenging problems, and concluding that people who work for the military do a lot of different things. In addition, they showed more awareness of and interest in STEAM-related jobs.

³ The value of volunteer time presented here is the average wage of non-management, non-agricultural workers by state found at: https://www.independentsector.org/volunteer_time.

Teacher Assessment FY 2023

- 3,681 classroom teachers who attended DoD STARBASE at 77 different Academies from August 2022 to June 2023 with their fifth grade classes anonymously answered survey questions online about their students' experiences with DoD STARBASE and their own.
- Teachers indicate that the biggest impact of DoD STARBASE on student attitudes and behaviors related to STEAM is an improved understanding of science.
- Additionally, teachers say that participation in DoD STARBASE leads to greater student interest in learning about science and more appreciation of mathematics applications.
- Teachers strongly agree that attending DoD STARBASE helps students better understand how STEAM skills and abilities fit job requirements of certain fields.
- 65 percent of teachers visiting DoD STARBASE for the first time say they are "Extremely Likely" or "Very Likely" to recommend DoD or the military as career options to students.
- Notably, almost every teacher that responded (99.3 percent) agrees they will recommend DoD STARBASE to other school personnel and also expresses high confidence that their school plans to attend DoD STARBASE again next year (6.92 rating on a scale of 1 to 7).



"Getting to speak and interact with students at STARBASE was incredibly rewarding and enjoyable. The students seemed engaged and interested in how my background translated to my military service. It was especially meaningful to see the little girls' faces light up seeing a woman involved in STEM and realizing they too, could go into STEM careers in the military!"

- CAPT NOEL LATULIPE, FLIGHT COMMANDER, MAO, 5TH ELECTROMAGNETIC WARFARE SQUADRON,
STARBASE PETERSON



INDUSTRY SUPPORT



I am writing to express my sincere gratitude for your organization's dedication to STEM education. We at Esri understand the challenges of providing high-quality educational programs, especially in the STEM fields. Your work is essential to ensuring that our nation's youth have the skills and knowledge they need to succeed in the 21st century economy.

DoD STARBASE'S STEM educational program is truly innovative and engaging. The hands-on activities and real-world applications that you provide are sure to capture the interest of young students and inspire them to pursue STEM careers. We are particularly impressed by your focus on providing opportunities for students from underserved communities. You are making a concerted effort to reach out to students from all backgrounds, and I believe that this is essential to ensuring that everyone can succeed in STEM.

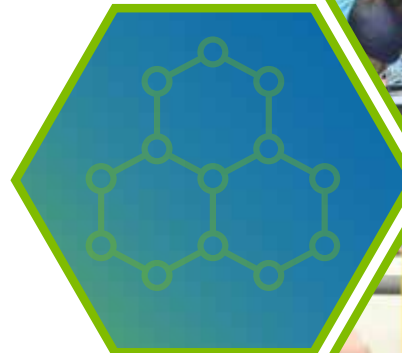
We are also grateful for your commitment to continuous improvement. DoD STARBASE is constantly innovating and developing new programs to meet the needs of your students. The recent pilot program at STARBASE Vermont focused on Geographic Information System (GIS) is a great example of this. I am confident that this program will be a success, and we look forward to seeing what's next.

I know that you are facing many challenges as you continue to grow and expand your program. However, we are confident that you will continue to succeed. You have a strong team of dedicated professionals, and you are committed to providing the best possible educational experience for your students.

The STARBASE Vermont team has worked tirelessly and leaned way forward not only to learn, but also to be able to teach a new skill. To do our part, Esri has donated over \$425,000 worth of software and services for this GIS lesson endeavor and look forward to assisting with your future success.

Thank you again for your hard work and dedication. DoD STARBASE is making a real difference in the lives of young people, and we are proud to support your organization.

Sincerely,
AVERY D. WHITE
Senior Account Manager, US Army
Esri



DoD STARBASE PROGRAM OVERVIEW

The Participants

DoD STARBASE programs operate under the auspices of the Department of Defense (DoD) through the Office of the Assistant Secretary of Defense (OASD) for Manpower and Reserve Affairs (M&RA). A Congressional Appropriation to the DoD funds the operation of DoD STARBASE. Constructive collaboration between the local military installation, schools, and surrounding communities enhances and strengthens the program. As such, it provides underserved youth with a variety of STEAM programs and activities as defined in the Department of Defense Operating Instruction (DoDI) 1025.07, dated 15 January 2021, which governs the STARBASE program. Seventy-six active STARBASE programs reported participant data for the 2022-23 academic year.⁴

The Students

Traditional 5-Day Program: The traditional STARBASE program focuses on classroom-based STEAM lessons and activities targeted toward 5th grade students and is typically conducted on a military installation. Each STARBASE unit of an instructor pair and classroom must conduct at least 30 classes during the school year, each comprised of 25 classroom contact hours over five days.

During SY 2022-23, DoD STARBASE program conducted 4,012 classes serving a total of 96,280 students across the United States, Guam, and Puerto Rico. During the previous school year, service had only included 3,562 classes and 79,618 students. This reflects an increase of 11 percent in classes and 17 percent in students from SY 2021-22 and is attributed to a return to normal class size/operations after the pandemic and overall program growth.

Required Supplemental Programs: In addition to the basic 5-day STARBASE program, the DoDI requires each STARBASE location to provide at least two weeks of classroom contact hours (20-25 hours per week) over schools' vacation breaks. This requirement is multiplied by the number of instructional pairs and classrooms. During SY 2022-23, this included a variety of specialized STEAM summer camps/activities (drones, rocketry, robotics, coding, engineering), targeted to specific underserved groups (girls, Native Americans, migrant, and inner-city youth, etc.) as well as summer academies for military dependents from host locations.



"STARBASE has opened doors for students and teachers to engage kinesthetically in various branches of STEM-based activities. This program provides opportunities for students to experience inquiry, collaboration, trial and error, and exploration of various STEM career fields. This engaging experience is a highlight of the fifth-grade year for both students and teachers. A carefully articulated curriculum created by experts prepares students for state testing while giving them experiences they retain and reflect on throughout the school year."

- SUSAN FINNEY, EDUCATOR
AT CENTRAL ELEMENTARY,
ATTENDING STARBASE IDAHO

⁴ Annual report information was not received from STARBASE WI - Milwaukee due to turnover at the Director level. Seven additional STARBASE programs; CA - STARBASE Porterville and STARBASE San Luis Obispo, LA - STARBASE Fort Johnson, MS - STARBASE Columbus and STARBASE Mississippi, NH - STARBASE New Hampshire, and NM - STARBASE Holloman) received start-up funding but did not see students during the 2022-23 academic year.



"HUGE THANK YOU for the incredible program that the STARBASE team put together for our migrant summer school. I've never seen our kids so interested and engaged in programming like they were with you. It was very evident that your team put their heart into teaching our kids. The teachers loved it as well! I really hope we can partner for next year!"

- GISEL HOLDCROFT, FEDERAL PROGRAMS, COMMUNITY OUTREACH ENGAGEMENT COORDINATOR FOR NAMPA SCHOOL DISTRICT, PARTNER WITH STARBASE IDAHO

Of the 76 reporting locations, 66 fully met or exceeded supplemental programming requirements. All of the remaining 10 programs conducted some supplemental programs but did not meet the per instructional pair/classroom level requirements for their location. A total of 6,626 hours (approximately 315 weeks) of required supplemental programs were conducted in SY 2022-23 serving 8,549 additional students.

Community Outreach: The DoDI also requires each STARBASE location to participate in a minimum of four community outreach activities each academic year to strengthen existing relationships and work to develop new connections between educational entities, employers, and the communities. These are intended to build community support and strong STEAM ecosystems to help broaden and enrich a learner's journey. These include but are not limited to participating in local STEAM activities and community events, judging science fairs, conferences, and informational presentations for local organizations. These outreach requirement activities were met at 70 of the 76 reporting STARBASE locations. An additional three locations conducted at least one outreach program, and the remaining three did not conduct any outreach during the academic reporting year.⁵ Many of these relationships include a wide variety of local and national outreach programs such as FIRST LEGO League, FIRST Robotics, Civil Air Patrol, The American Rocketry Challenge, Girl Scouts, and Scouts BSA. In addition, the DoD STARBASE location may coordinate a DoD STARBASE Advanced 2.0/3.0 program at the middle/high school level to extend the overall STARBASE experience and influence.

Teacher training is another way that STARBASE shares their STEAM expertise with outreach to the community. During SY 2022-23, 23 DoD STARBASE locations provided training to local teachers. This ranged from general program orientation to training on specialized STEAM subjects such as CAD/3D printing, modeling and simulation, and aerial robotics/drones. Some participating teachers were able to obtain continuing education credits for these initiatives.

Other Alternative Supplemental Programs: Some STARBASE locations also utilized other optional forms of program delivery which were outside of the required DoDI basic and supplemental program criteria. Some of these initiatives were developed to accommodate the schools and students impacted by school-related circumstances, such as bus transportation issues or limitations on travel outside their school. Other sessions, such as a two-day "Taste of STARBASE" were conducted to accommodate schools that could not otherwise be scheduled for a full STARBASE experience.

During the 2022-23 school year, 147 additional supplemental programs were conducted for 476 schools/participant groups, 359 of which were considered "at-risk." Some were done in partnership with community youth programs. A total of 10,174 students and 2,154 adults were reported as participants in these additional initiatives.

⁵ OR - STARBASE Rees (Umatilla), OR - STARBASE Kingsley, and OK - STARBASE Burns Flat did not conduct outreach activities due to staff shortages and facility issues, respectively.

The Military

The military hosts and supports DoD STARBASE programs at various military installations.⁶ During FY 2023, funding was provided for three new STARBASE programs: MS - STARBASE Columbus, MS - STARBASE Jacksonville, NM - STARBASE Holloman. This results in a total of 84 STARBASE programs across the United States, Guam, and Puerto Rico as indicated in Table 1 below.

Table 1 - Distribution of DoD STARBASE Programs by Branch of Service

Air Force	Air Force Reserve	Army	Navy	National Guard	Space Force	Total Programs
13	4	3	2	59	3	84

The military is an integral part of the overall STARBASE experience. DoD has a wealth of expertise in STEAM education and provides the DoD STARBASE locations with access to resources and services that most school districts cannot offer. Many elementary school teachers do not have the time, educational background, and/or resources to cover STEAM topics appropriately and simply cannot match the DoD STARBASE experience in their own classrooms. OASD/M&RA provides state-of-the-art equipment and technology; military commands provide classroom space, utilities, and security. The host command may also provide additional equipment, janitorial services, maintenance, travel services, and IT support. DoD STARBASE operates at the discretion of the host commander who may view this program as a venue for military personnel to positively interface with their community. As such, military personnel are encouraged to volunteer their time to the program as STEAM coaches, expert speakers, tour guides, and other support activities.

Military volunteers share unique, informative, and highly varied experiences with the students, which provides an exciting, stimulating environment to enhance their STEAM experience. Military volunteers provide a powerful force to inspire students to set goals for their own lives and serve their communities as they grow. Modeling selfless service, consistent and conscientious leadership, dedication to mission, and respect and dedication to the United States, these hard-working, highly disciplined men and women distinguish themselves in such a way that others admire and want to emulate. Participating classroom teachers are also inspired and encouraged by the involvement of military volunteers in the DoD STARBASE program.



⁶ Most STARBASE academies operate within the confines of a military base. A few operate in an affiliate site contiguous to the military installation but under the property management of the base. LA - Bayou State STARBASE is located in Rosedale at the original Iberville High School because there is not a military installation within 50 miles of a population of Title I students. CT - STARBASE - Waterbury is located at Naugatuck Community College because space became limited at the Waterbury Armory. OK - STARBASE - Burns Flat, SD - STARBASE NOVA Courage and STARBASE NOVA Honor are outreach programs that serve Native Americans.

The Schools and School Districts

Students from local school districts surrounding the host military installation participate in the DoD STARBASE program. School districts enter a formal agreement with the military command hosting the program in order to participate in DoD STARBASE. Accompanied by their classroom teacher, entire elementary classes are transported to their DoD STARBASE location to attend the 25-hour program over five consecutive days or one day a week over five consecutive weeks. As such, DoD STARBASE exposes a richly diverse population of students to content and careers in STEAM fields presenting unparalleled opportunities for underrepresented/underserved populations in STEAM enrichment. As a result of the school's participation in DoD STARBASE, the school's curriculum is enhanced, students are better prepared for standardized state testing, and they are excited about continued STEAM education and STEAM careers.

A total of 1,743 schools from 590 school districts participated in the basic DoD STARBASE program during SY 2022-23 through traditional five-day academies. Specific breakout areas are illustrated in Table 2 below with a comparison to the most recent two school years.

Table 2 - FY 2023 Participating School Demographics - Full 5-Day Programs⁷

School Type	School Year 2020-21 Number of Schools	School Year 2021-22 Number of Schools	School Year 2022-23 Number of Schools
Title I Eligible	518 (69%)	1163 (79%)	1,348 (77%)
Public	404 (64%)	1228 (84%)	1,485 (86%)
Private (includes Homeschool Groups)	230 (36%)	241 (16%)	61 (3%)
Urban/Urban Cluster	403 (70%)	1068 (76%)	1,281 (73%)
Rural	176 (30%)	336 (24%)	462 (27%)

Table 2 clearly reflects the impact of the pandemic in SY 2020-21 and the return to more normal distribution in SY 2021-22 and 2022-23. Data from the past two school years shows that the DoD STARBASE program served primarily students from Title I public schools in urban areas. Title I, Part A (Title I) of the Elementary and Secondary Education Act, as amended by Every Student Succeeds Act (ESEA) provides financial assistance to local educational agencies (LEAs) and schools with high numbers or high percentages of children from low-income families to help ensure that all children meet challenging state academic standards.⁸

This year, 90 percent of the DoD STARBASE programs served school districts within a 50-mile radius of the programs' location.⁹ Most locations that extended beyond a 50-mile radius have established special accommodations to reach more students such as those in the Native American outreach programs in South Dakota, or in sparsely populated areas such as northern Minnesota and Vermont. In Puerto Rico, students typically travel from all over the island to participate in the program located in San Juan.

⁷ Numbers shown are for five-day programs and do not include other supplemental programs. Some schools may be counted in more than one category.

⁸ U.S. Department of Education, Office of State Support. (2018). Improving Basic Programs Operated by Local Educational Agencies (Title I, Part A). Retrieved from <https://www2.ed.gov/programs/titleiparta/index.html>.

⁹ MN - STARBASE Duluth, NM - STARBASE New Mexico, PR - STARBASE Puerto Rico, SD - STARBASE NOVA Honor and STARBASE NOVA Courage and VT - STARBASE Rutland and STARBASE South Burlington served students beyond 50 miles of their host facility during this reporting period.

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, visiting classrooms, and/or providing financial support and awareness about the DoD STARBASE program. 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 nurture student interest in STEAM, and facilitate a well-trained STEAM workforce and a STEAM-literate public, thereby enhancing the future of their communities.



“STARBASE offers our small town of Klamath Falls students an opportunity to experience big town science and discovery. Strong partnerships with our local school districts and community stakeholders has ensured that STARBASE is experienced by all local youth. We are incredibly lucky to have it as the leader in Klamath Falls STEM education.”

- LAURA NICKERSON, KLAMATH COUNTY SCHOOL DISTRICT/OREGON INSTITUTE OF TECHNOLOGY STEM&M COORDINATOR, PARTNER WITH STARBASE KINGSLEY

DoD STARBASE 2023 HIGHLIGHTS



STARBASE Martinsburg Partners with Air National Guard Drug Demand Reduction Program to Host Community STEM Night

By Senior Master Sgt. Emily Beightol-Deyerle, 167th Airlift Wing, West Virginia Air National Guard

Remote-controlled robots rolled across the hangar floor as foam rockets launched towards the rafters above. Jupiter could be viewed through a telescope outside, while drones buzzed around the rear of the building. Drug dogs demonstrated their ability to sniff out illegal substances, and students wearing alcohol impairment goggles navigated a road map on a floor mat.

THE HANGAR, formerly used by Sino Swearingen at the Eastern West Virginia Regional Airport, was full of activity again for the Family STEM Night, Oct. 26, co-hosted by STARBASE Martinsburg and the Air National Guard's (ANG) Drug Demand Reduction Program (DDRP), in honor of Red Ribbon Week, a drug-use prevention campaign.

More than 30 vendors comprised of law enforcement, civilian, and military agencies with ties to Science, Technology, Engineering, and Mathematics (STEM) and drug and alcohol awareness were on hand offering activities and education on a wide range of topics.

The event had been a longtime goal for STARBASE Martinsburg program director, Sherra Triggs. She and her staff bring Berkeley and Jefferson County fifth graders to the 167th Airlift Wing to provide STEM education each year, but she had been looking for ways to engage a wider audience with STEM education and STEM career possibilities.

"Creating a big outreach event can be a huge undertaking. The more people you have invested and participating, the more success you are bound to have," said Triggs.

Which is why the event only came to fruition after Chief Master Sgt. Christina Rader, senior regional manager for the Air National Guard's





Drug Demand Reduction Program, asked Triggs for assistance reaching more youth for Red Ribbon Week. By joining forces, Triggs and Rader were able to leverage support from STARBASE, regional DDRP, the 167th Airlift Wing, and numerous community agencies.

"It seemed natural to partner with STARBASE during 2022 National Red Ribbon Week for a STEM night, promote drug and alcohol awareness, and have community helping agencies and resources readily available for families," said Rader. "This event was actually used to serve as a benchmark to show other wings what is possible with prevention, education, and outreach efforts when they team up with STARBASE and others in their communities."

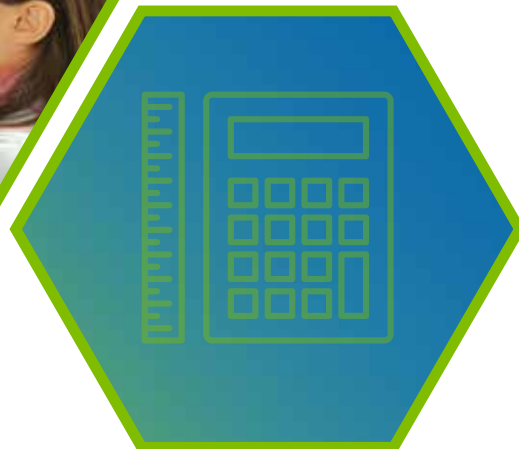
Rader and Triggs both hope to make Family STEM Night an annual event during Red Ribbon Week. "After the success and community outreach of this event, I only see it getting bigger and better," said Triggs.





"STARBASE Kelly (SBK) is a phenomenal educational experience every child should have the opportunity to participate in. SBK provides students and teachers with hands on lessons, knowledge & content, tools, experiments, engaging labs, experts in their field, and real world connections and experiences they might never get to be a part of without SBK. In just 5 short weeks, the wonderful educators of SBK build relationships with students, earn their trust, inspire students, guide them, and encourage them to be the best versions of themselves, all while learning important science concepts they need to be successful academically. SBK is definitely growing tomorrow's leaders today, one engaging lesson at a time."

- DONNA CEPEDA, BOB HOPE ELEMENTARY SCHOOL, ATTENDING STARBASE KELLY



THE PROGRAM ELEMENTS

of DoD STARBASE

The guidelines and directives for the DoD STARBASE program are outlined in DoDI 1025.07, which include operational requirements such as budget, student grade level, class size, scheduling hours, curriculum guidelines, demographics,¹⁰ documentation requirements, testing, and program location. DoD STARBASE directors are required to report on these items annually by obtaining aggregate data on students from the schools participating in the DoD STARBASE program.



“During the program I learned A LOT. Such as: Newton’s Laws, Bernoulli’s Principle, physics, chemistry, and so much more. I am very proud to be able to tell my family all about atoms and physics laws! I will remember how much I learned without even knowing it, I never realized I could learn so much in a week!”

- AVERY RUSSELL, STUDENT AT GREENCASTLE-ANTRIM MIDDLE SCHOOL, ATTENDING STARBASE MARTINSBURG

DoD STARBASE Students

Grade Level

The DoD STARBASE program is authorized to serve students in kindergarten through 12th grade. Because of the dramatic decline in math and science performance by U.S. students after the fourth grade, the DoD STARBASE curriculum and standards are developed for the fifth-grade level. In order to fill SY 2021-22 class schedules, 29 locations (39 percent) used their Title 10 authority and adapted their full 25-hour curriculum to expand their reach beyond fifth grade. This year, that number reduced to 26 percent (20 of 76 reporting academies) as the program focus continued to normalize back to the fifth grade target audience. Table 3 shows the reported distribution of students for the basic 25-hour program in SY 2022-23.

Table 3: SY 2022-23 Grade Level of DoD STARBASE Students – Basic 25-Hour Program

Grade Level	Number of Students
Kindergarten through 3rd Grade	68
4th Grade	1,338
5th Grade	92,690
6th Grade	1,519
7th Grade	238
8th Grade	150
9th Grade and Above	277
Total Number of Students – Basic Program	96,280¹¹

¹⁰ The National Center for Education Statistics (NCES) requires aggregate demographic data concerning all elementary and secondary students be reported using one of seven aggregate reporting categories (<http://nces.ed.gov/ipeds/report-your-data/race-ethnicity-reporting-changes>).

¹¹ Grade distribution information was only collected for on-site basic 25-hour programs and does not include supplemental programs.



"DoD STARBASE Central Florida is a phenomenal place to learn. The students were excited, engaged, and did a great job welcoming us to their robotic challenge teams. I had a blast learning with the cadets!"

- CDR BETH TEACH,
SPECIAL ASSISTANT FOR PUBLIC AFFAIRS
TO VICE CHAIRMAN OF THE JOINT CHIEFS
OF STAFF

Underrepresented/Underserved in STEAM

DoD STARBASE presents a unique opportunity to expose groups of students that have been historically underrepresented in STEAM fields to STEAM content and STEAM careers. Information released in April 2021 by the National Science Foundation and the National Center for Science and Engineering Statistics stated that women, persons with disabilities, and some minority groups — Blacks or African Americans, Hispanics or Latinos, and American Indians or Alaska Natives — are underrepresented in science and engineering (S&E).¹² This also encompasses low-income students, students with disabilities and students who use English as a second language.

Table 4 shows the percentage of students from each of these underrepresented groups who attended basic STARBASE programs. While the information is fairly consistent with SY 2021-22 data in most categories, modest increases were seen in low-income students (4 percent), students with disabilities (3 percent), and students who use English as a second language (2 percent). The rate for Black/African American students increased by 2 percent with the most significant change being a decrease of 5 percent in Hispanic/Latino students, after experiencing a 7 percent increase the previous year.

Table 4: STARBASE Students - Groups Underrepresented/ Underserved in STEAM

Group	Percentage of Students
Females	49%
American Indians or Alaska Natives	3%
Blacks/African Americans	21%
Hispanics or Latinos	25%
Low Income Students	62%
Students with Disabilities	14%
Students that use English as second language	13%

¹² National Science Foundation/National Center for Science and Engineering Statistics (2021), Women, Minorities, and Persons with Disabilities in Science and Engineering. Retrieved from <https://nces.nsf.gov/pubs/nsf21321/report>.



"I thoroughly enjoyed the opportunity to interact with young minds! To watch the excitement on their faces meant a lot to me. Showing elementary-schoolers there are many paths to STEM careers is, in my mind, one of the amazing things about the STARBASE program. Making a connection between STEM curriculum and how it can apply to individuals is of paramount importance."

- MSGT TROY REICHERT, USAF (RET), STARBASE PETERSON

Class Size

Smaller class size is particularly important to the inquiry-based instruction used at DoD STARBASE locations. The DoDI requires two DoD STARBASE teachers per class or an average DoD STARBASE instructor to student ratio of 1:15, with 20-35 students as acceptable class size. The average class size for SY 2022-23 was 24 students with an average instructor-to-student ratio of 1:12. Sixty percent of the programs reported fell within the 20-24 student participant range. Last year, 85 percent of STARBASE programs reported an average class size of at least 25 students. Only two locations reported class averages of less than 20 students.¹³ The highest reported average class sizes were 30 students at CA - STARBASE Los Alamitos, KS - STARBASE Manhattan and STARBASE Wichita, NV - STARBASE Henderson. Program delivery schedules vary by location with 39 percent operating on consecutive days, 38 percent using a combination of consecutive days and one day per week class scheduling, and 22 percent providing programs one day per week for five weeks. Last year, classroom delivery was relatively similar with 37 percent of the programs being conducted on a combination schedule, 35 percent were conducted on consecutive days and 27 percent operated one day a week for five weeks.

Many DoD STARBASE locations have increased their efforts to serve more students by opening additional DoD STARBASE classrooms so that classes may operate simultaneously. Additional DoD STARBASE classrooms allow schools to send more students, using the same transportation, who are then assigned a DoD STARBASE class. Depending on the number of students arriving from the school, the resulting "DoD STARBASE class" may contain students originating from multiple classrooms. In SY 2022-23, 36 percent of the STARBASE locations reporting operated with a single classroom, while 64 percent run two or more classrooms at a time. Under the DoDI, STARBASE locations are expected to serve a minimum of 30 classes per classroom and instructor pair each year. Table 5 shows the number of sites operating each different classroom configuration and their required operational tempo.

Table 5: Number of Locations by Number of Classrooms

Number of Classrooms	Number of STARBASE Locations	DoDI Required Classes Per Year
1	27	30
2	37	60
3	9	90
4 or More ¹⁴	4	120+

¹³ HI - STARBASE Hawaii reported an average of 17 students per class. NY - STARBASE Fort Drum, a new location open for only a partial school year, reported an average of 18 students per class.

¹⁴ AL - STARBASE Maxwell, GA - STARBASE Robins, MN - STARBASE Duluth, and OH - STARBASE Wright-Patt have the capacity to run four or more simultaneous classes.

DoD STARBASE Staff

Employment Affiliation

The Department of Defense Instruction (DoDI) 1025.07 provides general guidelines on staffing models, salary parameters, and position descriptions. The primary employment affiliations are federal, state, and contractor agencies. Employment affiliation is an important consideration for each location. The employee's affiliation determines salary administration, hiring requirements, benefits, personnel policies, and practices, as well as reporting relationships. Federal and state affiliations often provide retirement and health benefits, which increase a location's personnel costs and uses a greater portion of the location's operating budget. Contractor affiliations make up 56 percent of the employment relationships, followed by state at 43 percent. CA - STARBASE Edwards was the only location with federal employment affiliations (four employees) in FY 2023.

Staffing Model

The DoDI outlines the prototypical staffing model for a DoD STARBASE location operating a single classroom. This basic staffing model includes four full-time paid staff positions: a director, a deputy director/instructor, an instructor, and an office manager or instructor assistant. For each additional classroom that operates at a DoD STARBASE academy, an additional instructor pair is required. The "instructor pair" required may include two instructors or an instructor and instructor assistant combination based on the needs of that location. A STARBASE Advanced Program Coordinator position may be added with the approval of OASD/M&RA to coordinate robust STARBASE Advanced program initiatives. The DoDI also includes broad guidelines on the pay scale for each staff position which is also the basis for an annual budget for each location. 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 5-9, respectively. Of the 76 reporting STARBASE locations, 28 operated a single classroom during SY 2022-23.¹⁵ Table 6 outlines the staffing profile for full-time and part-time personnel at the reporting DoD STARBASE locations.

Table 6: FY 2023 Staffing Profile

Position	Number of Staff	Full-Time ¹⁶	Part-Time
Director	72 ¹⁷	72	0
Deputy-Director/Instructor	66	64	2
Instructor	171	138	33
Office Manager	62	46	16
Instructor Assistant	79	39	40
STARBASE Advanced Coordinator	24	20	4
Other (Technical Assistants)	2	1	1
Total	476	380	96

¹⁵ DoD STARBASE locations that operate a single classroom: AZ - STARBASE Arizona, CA - STARBASE Edwards, CT - STARBASE Connecticut - Waterbury, FL - STARBASE Central Florida, GA - STARBASE Savannah, HI - STARBASE Hawaii, KS - STARBASE Manhattan, LA - Bayou State STARBASE and Pelican State STARBASE, MA - STARBASE Hanscom, MI - STARBASE Alpena, MT - STARBASE Fort Harrison and STARBASE Great Falls, ND - STARBASE North Dakota, NJ - STARBASE Joint Base McGuire-Dix-Lakehurst, NV - STARBASE Henderson and STARBASE High Sierra, OK - STARBASE Oklahoma - Burns Flat, OR - STARBASE Camp Rilea, STARBASE Kingsley, and STARBASE Rees (Umatilla), SD - STARBASE Rapid City/NOVA Honor and STARBASE Sioux Falls/NOVA Courage, TX - STARBASE Kelly, VT - STARBASE Vermont - Rutland and STARBASE South Burlington.

¹⁶ Full-time is defined as an employee working more than 195 days per year.

¹⁷ During FY 2023, Directors in Connecticut, South Dakota, and Vermont operated multiple STARBASE locations.

Staff Experience

In FY 2023, 49 percent of overall DoD STARBASE staff have more than three years of DoD STARBASE experience with 29 percent in the one-to-two-year range and 22 percent new to the STARBASE program with less than one year experience. Directors and deputy directors/instructors have typically worked with DoD STARBASE for over 5 years at 57 percent and 48 percent experience, respectively. FY 2023 data indicates that 38 percent of instructors have over two years of STARBASE experience compared to 42 percent a year ago. Most instructors currently fall into the one-to-two-year range at 36 percent. The experience level of office managers with more than three years with the STARBASE program is 58 percent. Instructional assistants have the least amount of DoD STARBASE experience with 73 percent in their first or second year. New staff members are typically trained on the job. Prior to teaching at DoD STARBASE, new instructors may observe experienced instructors, who often serve as their mentors. Instructors also attend regional workshops for delivery of the DoD STARBASE curriculum and computer-aided design (CAD) instruction.

Staff Departures

There were 92 staff departures in FY 2023. This is a 10 percent decrease in the number of employees who left the program in FY 2022 (102 employees). The majority (46 departures) were at the instructor level. Instructional Assistants were the next highest at 24 departures followed by Director at eight positions, Office Manager at seven positions, Deputy Director at four positions, and "other" positions with three departures. The overall turnover rate in FY 2023 was 19 percent, down from 23 percent a year ago. A total of 27 percent of departing staff cited a better opportunity elsewhere as their reason for leaving the STARBASE program. This was followed by "other" reasons (26 percent), relocation (14 percent), retirement (12 percent), and returning to school teaching (9 percent). Eleven employees (12 percent) were terminated from the program.



"Working with the STARBASE program is the highlight of my week. Seeing a program teach STEM in a fun, applicable way gives me great peace of mind for America's future. I am a STARBASE alum and it changed the vector of my future, and I am excited to see it still doing the same for students today. I don't think it's overstating to say that every school in the country needs its own STARBASE program to educate, inspire, and encourage innovation and progress for our country's future."

- 1LT BLAKE JONES, B-52
ELECTRONIC WARFARE OFFICER,
STARBASE NORTH DAKOTA



Volunteers and Military Support

Volunteers are an essential participant group in the DoD STARBASE program. Volunteers include teachers, parents, industry professionals, and community leaders that offer their time and support to enhance the overall STARBASE program. They serve as presenters, board members, advisors, tour guides, instructor aids, and perform a wide variety of daily support services.¹⁸

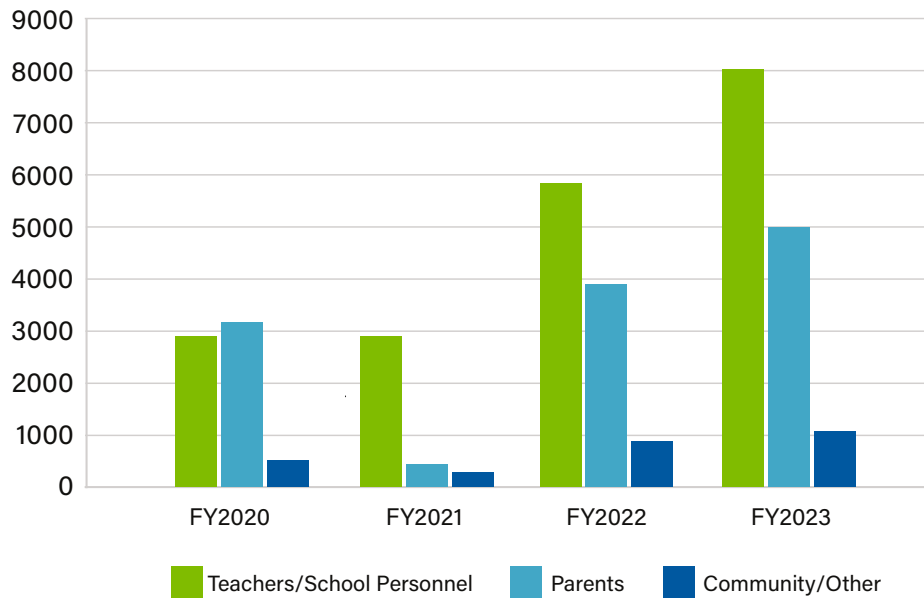
The DoD STARBASE locations documented a total of 14,254 volunteers who contributed a total of 191,288 hours, worth an estimated \$6,013,543¹⁹ contribution, to the program during FY 2023 (see Table 7).

Table 7: FY 2023 Volunteer Participation

	Volunteers	Hours	Value
Teachers/School Personnel	8,121	154,849	\$4,899,136
Parents	4,994	28,518	\$870,062
Community/Other ²⁰	1,139	7,921	\$244,345

The volunteer numbers have steadily increased over previous years and have returned to pre-pandemic numbers. In addition, factoring in additional classrooms that sites have added, as well as new STARBASE locations, has also served to increase these numbers (see Figure 1).

Figure 1: Volunteer Participation



¹⁸ The following locations reported no volunteer usage during SY 2022-23: OK-STARBASE Burns Flat, OK-STARBASE Ft. Sill, OK-STARBASE Tinker.

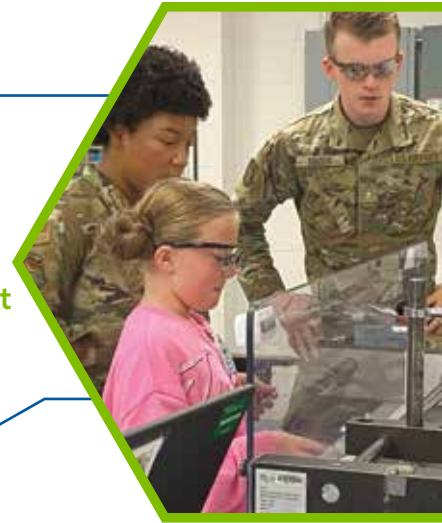
¹⁹ The value of volunteer time presented here is the average wage of non-management, non-agricultural workers by state found at https://www.independentsector.org/volunteer_time.

²⁰ Other volunteers include STEM groups, firefighters, board members, etc.



“STARBASE is a phenomenal place that has the ability to reach so many kids’ lives and spark a love for learning. Volunteering at STARBASE hits everything that is important to me – educating young minds and showing kids a part of the military most don’t get to see and being surrounded by people that truly love their jobs.”

- TSGT, SHANNON JOBST, TRAINING MANAGER 19 LRS, STARBASE ARKANSAS



Teachers and school personnel account for the greatest number of volunteers and the most hours. Teachers participate in the DoD STARBASE program along with their students. Teachers and school personnel provide instructional support to the DoD STARBASE classroom and gain valuable classroom techniques that can be applied to activity-based education. It is estimated that teachers and school personnel provided a volunteer value of \$4,899,136 to the program in FY 2023. The amount of time donated by this field of experts (over 150,000 hours) remains a testament to the school’s commitment and support of the DoD STARBASE program.

Military Support and DoD Scientists and Engineers

Military personnel and DoD STEAM professionals who support the DoD STARBASE program, inspire students’ interest and community engagement with linkages between education and application. Approximately 91 percent of STARBASE locations were able to use military personnel to support their program this year. They may serve as guest speakers to explain the use of STEAM in different careers and/or act as base tour guides highlighting the use of STEAM concepts in their missions and giving students access to military facilities and equipment. Military personnel share unique, informative, and highly varied experiences with the students, which provides an exciting, stimulating environment to enhance their STEAM experience. It is important to note that the number of military volunteers and support hours have increased from 6,630 hours of support by 2,902 military personnel to 18,399 hours of support by 3,853 personnel over the previous year.

Table 8: FY 2023 Military/DoD Science and Engineering Participation

	Volunteers	Hours	Value
Military	3,853	18,399	\$530,337
DoD STEM	221	857	\$28,264

DoD Scientists and Engineers (DoD S&E) also play an integral part in the DoD STARBASE program. These professionals serve as special speakers and often interact with the STARBASE Advanced programs. It is noted that the numbers of volunteers have increased from 213 DoD S&E personnel to 221 DoD S&E personnel, with a slight decrease in hours from 1,074 to 857 during FY 2023.

DoD STARBASE 2023 HIGHLIGHTS

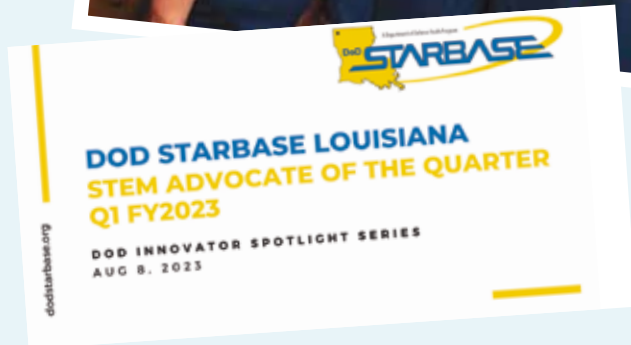


STARBASE Louisiana Wins DoD STEM Advocate of the Quarter Award

STARBASE Louisiana was selected as the recipient of the Department of Defense STEM Advocate of the Quarter for the 1st Quarter of Fiscal Year 2023. This quarterly award recognizes outstanding STEM education and outreach efforts that further the mission of the Department of Defense.

THIS AWARD usually goes to an individual, but the selection committee was impressed with the nomination packet submitted by Global Strike's Chief Scientist's office. In his congratulatory email, Dr. Steven Wax, the Acting Deputy Chief Technology Officer for Science and Technology (A/DCTO(S&T)) in the Office of the Under Secretary of Defense for Research and Engineering, stated, "We were impressed with the breadth and depth of the nominations we received and are proud to have selected you for this award. Your work as mentors and advocates for STEM education, especially to plan, coordinate, and execute such a diverse portfolio of programs to a largely underserved community base, is inspiring. Your efforts [in FY23] reached over 2,200 students encouraging them to have a better understanding of math, physics, and coding to name a few, all while building life skills that give them a more positive view of their future and what is possible."

STARBASE Louisiana began in 1999 with a basic 5th-grade, one-class program and is now a Level III program serving over 2,300 students in 5th-12th grade. Their program instructs approximately 2,000 5th-grade students in approximately 90 academies each year. They also instruct 30 STARBASE Advanced Programs at middle schools and 8 STARBASE Advanced high school sessions at eight different schools. Their Advanced STARBASE high school program has taken six teams from several high schools to national competition of The American Rocketry Challenge (TARC) over the past three years. All five graduating seniors from



the first national qualifying TARC team entered aerospace fields of study at universities nationwide.

That type of outcome is music to the ears of Dr. Donna Senft, the chief scientist for Air Force Global Strike Command, who nominated STARBASE Louisiana for the award.

"The future capabilities of Air Force Global Strike Command and the DoD, in general, depend upon a pipeline of STEM graduates," she said. Col. David Anderson, 307th Bomb Wing commander agrees. "STARBASE Louisiana has been a leader in STEM education since its inception more than 20 years ago, and the 307th Bomb Wing is proud to sponsor them," he said. "Laurie and her team's efforts will have a positive impact for decades."

PROGRAM SUPPORT AND TRAINING

With the rapid growth of the DoD STARBASE program, the need for additional program support and training has intensified. As such, previous initiatives have been enhanced, and new initiatives have been developed to provide training and staff development opportunities for new and existing locations.

Director's Launch Training

The Director's Launch Training (DLT) concept, initiated in FY 2022, has evolved into a valuable orientation tool for new program directors at existing or newly established academies. The DLT allows the new director to network and receive information and reference materials on program operations, best practices, testing administration, reporting schedules, documentation, performance expectations, resource management, training, and other operational protocols. This time is also used to answer any questions and concerns the staff and host command may have. Along with the provided program guidance, new directors are also able to observe classroom instruction and curriculum delivery as the DLT is traditionally hosted by a high performing DoD STARBASE program. Following the training, program mentors are assigned to the new directors as a direct line of support and communication in the field as the trainees navigate their first year at the helm of the program and prepare for their first evaluation visit. The most recent DLT was conducted at WV - STARBASE Martinsburg in October 2022 for 16 Program Directors. Plans are to conduct these trainings on an annual or as-needed basis.

Brown Bag Virtual Trainings

As the DLT has grown and developed, it became clear that additional training opportunities for existing directors and program staff needed to be developed and made available. Thus, the DoD STARBASE Brown Bag training series was born. While these trainings are based off the content made available at the new director's training, here concepts are elaborated upon to provide for more collaboration between new and experienced program directors. These virtual trainings are led and facilitated by subject matter experts. After these training courses are completed, they are made available on STARBASE-U, the internal learning management system, for access and reference for the field.

In FY 2023, there were seven Brown Bag Training sessions on the following topics:

- Operational Tempo and School Relations
- Digital Tools and Resources
- Resource Management - Fiscal
- Resource Management - Property
- Reporting and Data Collection
- Curriculum Scheduling
- STARBASE Advanced Programming



Rocketry training for DoD STARBASE staff at STARBASE Louisiana.

Training and Staff Development

PTC Onshape

PTC Onshape training is geared toward learning the fundamentals of 3D Computer-Aided Design (CAD) software, focusing on navigation, assembly, part creation, modeling, learning measurements, materials, weights, volume, assembly and more. This training opportunity is required for all program instructors and is hosted at various STARBASE locations across the nation multiple times throughout the fiscal year. During the two-day training, participants improve their understanding of digital transformation, designing products, and the language of CAD, so they can accurately teach the mandatory three hours of PTC Onshape back at their home site during the basic program academies.

STEAM Professional Development Trainings

In FY23, DoD STARBASE offered four STEAM professional development courses for program staff. STARBASE locations with expertise in a particular area acted as hosts for the training. Many of the lessons learned have been brought back to the programs and implemented during their Supplemental and Advanced Programs.

- Aerial Robotics training was offered to DoD STARBASE program instructors and directors to build and enhance their knowledge of unmanned aerial vehicles (UAV's)/drones. The training was conducted at Peach State STARBASE in Georgia. Participants were not only able to build drones, but also learned the principles, technologies, aeronautics, operational techniques, and related skills.
- A Rocketry course, conducted at STARBASE Louisiana, taught the basics of rocketry, design, creating a computer simulation, assembly, and how to launch a rocket. Participants received sample files for 3D printing custom parts for their rockets using Onshape software.
- Modeling and Simulation training, conducted jointly by the four Florida STARBASE programs and held at the Orlando, Florida Convention Center, provided a wealth of knowledge about modeling, simulation, Augmented Reality (AR), Virtual Reality (VR), and Artificial Intelligence (AI). Participants also had the opportunity to attend the Interservice/Industry Training, Simulation and Education Conference (I/ITSEC), the world's largest modeling, simulation, and training event and talk to industry and military on the convention floor regarding real world technologies. In addition, the participants developed lesson plans to use back in their classrooms.
- A STARBITS workshop was conducted at STARBASE Camp Rilea in Oregon. This training provided an opportunity for program instructors to help their students understand how electricity moves through a circuit. Associated activities prompt the participants to engineer solutions to hypothetical problems by making circuits with the parts provided. Each participant made one circuit kit to use back at their site.

STARBASE U

STARBASE U is an internal on-line Learning Management System that is accessible to all STARBASE program staff. This resource was initiated in FY 2020 for STARBASE personnel across the nation to store and disseminate program information and provide a platform for enhanced training possibilities. New staff members are enrolled in courses that pertain to their position and have immediate access to training videos and resources. Throughout the last three years, a wide variety of training courses have been developed and shared with the field.

DoD STARBASE Advanced Program

STARBASE 2.0 AND 3.0

Program Elements

STARBASE Advanced is a unique school-based extracurricular program that targets underserved 6th - 12th grade students. It combines STEAM activities with a relationship-rich, school-based, after-school and extracurricular environment to provide the missing link for youth making the transition from elementary to middle school and/or high school. It extends the positive impact of the DoD STARBASE Program through an after-school STEAM coaching approach that solidifies students' attachment to and engagement with school. The program takes place in partnering schools that have expressed the desire for additional DoD STARBASE program instruction and resources. As with other school-based coaching/mentoring programs, STARBASE Advanced is highly structured and intended to help support school goals, provide safe environments for students, and improve student-teacher relationships. STARBASE Advanced started with a middle school component (STARBASE 2.0) in FY 2010 and in FY 2020 a similar program for high school students (STARBASE 3.0), was introduced.

Program Requirements

The DoDI 1025.07 formally documents operational requirements for the STARBASE 2.0 program, which also applies to the STARBASE 3.0 high school programs. In addition, a new STARBASE Advanced Program Guide was developed in response to the evolution of the program, and this additional resource has been made available to program directors via the STARBASE U platform. Execution of the STARBASE Advanced program must adhere to the following requirements:

- It must support STEAM activities and must target middle school students for 2.0 and/or high school students for 3.0.
- The program should be school-based with district support. Meetings will typically take place after school or during school breaks, and each session will be led by a teacher from the participating school.
- Meet for no less than four hours each month, for a minimum of 20 hours for the school year.
- Each STEAM coach will support no more than four students.
- Must have a memorandum of understanding or memorandum of agreement in place.
- Must have a designated DoD STARBASE Advanced coordinator.

The DoDI also requires cooperation from the participating school to include:

- Providing adequate meeting space, such as classroom or all-purpose room.
- Appointing a teacher or designated school representative as the STARBASE Advanced point-of-contact.
- Providing background checks of STEAM coach volunteers.
- Providing computer/information technology support as needed.
- Arranging for an after-school snack for students and providing parking for DoD STARBASE program staff and STEAM Coaches.



"STARBASE provides a wonderful opportunity to enrich the youth of our community by providing them with structured, STEM-based instruction. It is a bridge between our Soldiers, our Airmen, and the community that sparks a much needed interest in Science and Technology."

- COL, J. ALLEN MARTIN, WVARNG
77TH BDE COMMANDER,
WV STARBASE CHARLESTON

STARBASE Advanced Curriculum

Middle school STARBASE Advanced students typically work with a STEAM coach on a team project at their school, whereas high school students work with STEAM coaches both in person and in a virtual format. The outcomes for all students participating in the DoD STARBASE Advanced program are as follows:

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

Program locations use a variety of different team projects to achieve these goals. STEAM projects include robotics, rocketry, computer-aided design, coding, aerial robotics (drones), engineering design process, CO₂ cars, weather balloon launch, and wind energy. Several programs culminate with some related competition, such as FIRST LEGO League competitions and The American Rocketry Challenge (TARC).²¹

Participants

STARBASE 2.0

During SY 2022-23, STARBASE 2.0 programs were active at 54 STARBASE locations in 26 states and Puerto Rico.²² This is a 9 percent increase in program locations from FY 2022, and the total now exceeds the previous high level of 50 locations pre-pandemic.



In SY 2022-23, school districts and schools partnered with DoD STARBASE at 138 school locations to operate 196 STARBASE Advanced 2.0 clubs, which represents a 45 percent increase in school locations and a 16 percent increase in the overall number of clubs.

Thirty-five percent of the 2.0 clubs were conducted at GA - STARBASE Robins, LA - STARBASE Louisiana, and UT - STARBASE Hill at 22, 28, and 19 clubs, respectively.

The majority (86 percent) of clubs were located in urban school settings, which is consistent with data the previous school year. STARBASE Advanced program completions rose to nearly 100 percent last year and have remained at this level. Forty-eight percent of DoD STARBASE Advanced 2.0 students were former DoD STARBASE students, and the average club size was 15 students. This year, the DoD STARBASE 2.0 program served 2,990 student participants, up 24 percent. The majority (66 percent) of these students came from low-income backgrounds, 7 percent were military affiliated, 7 percent were designated as ESL/ELL, and 7 percent were students with disabilities.

The duration of STARBASE Advanced 2.0 club activity ranged from a concentrated time period to year-long initiatives with 61 percent of programs meeting in weekly sessions and 76 percent meeting after school hours. The retention rate for SY 2022-23 Advanced programs was 88 percent. Directors reported several reasons why students discontinued the program. School suspension/prohibition of after-school/extracurricular activities, relocation, time conflicts, and lack of interest in the chosen curriculum were cited as the main reasons why students drop from the program.

²¹ FIRST LEGO League is a global competition where elementary and middle-school students build LEGO-based robots to complete tasks on a thematic playing surface. The American Rocketry Challenge (TARC) is an annual model rocketry competition for students in 7th - 12th grades where they design, build, and launch a rocket with specific characteristics.

²² In FY 2023 STARBASE Advanced 2.0 programs were offered in Alabama, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Indiana, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Montana, North Carolina, New Mexico, Ohio, Oklahoma, Puerto Rico, South Dakota, Texas, Utah, Virginia, Vermont, West Virginia, and Wyoming.

STARBASE 3.0

Fifteen STARBASE locations reported initiating or continuing high-school level STARBASE Advanced 3.0 programs during FY 2023.²³ STARBASE programs at Los Alamitos, Martinsburg, Winchester, and all Kansas sites continued their joint summer activity with the United States Marine Corps Junior Reserve Officers' Training Corps (JROTC). This effort was joined by both STARBASE Vermont locations in FY 2023. Now in its third year, it served 90 JROTC cadets through a robust program on robotics. The American Rocketry Challenge (TARC) is being used as a STARBASE Advanced 3.0 program platform at STARBASE Louisiana, STARBASE Austin, and is being piloted at STARBASE New Mexico. The program in Louisiana works year-round and has six active TARC clubs. STARBASE Robins continued their rocketry program with JROTC cadets in Broward County, FL as part of their STEM Leadership Summit. The 3.0 club led by STARBASE Puerto Rico focused on robotics programming for island 9th, 10th, and 12th graders. In total, STARBASE Advanced 3.0 activities during FY 2023 served a total of 535 high school age students through 19 organized 3.0 club initiatives.

Staff

STARBASE Advanced Program Coordinator

DoD STARBASE Advanced is primarily a volunteer program. The participation of volunteer STEAM coaches and volunteer classroom teachers is managed by a designated DoD STARBASE Advanced Program Coordinator. This is typically a part-time position, and many programs choose to assign the coordinator in-house with their existing DoD STARBASE director, deputy director, program instructor, or office manager taking on the additional responsibilities. The STARBASE Advanced Program Coordinator plays an invaluable and critical role in the success of the program. The responsibilities of the Advanced Program Coordinator include:

- Creating and implementing program marketing
- Managing relationships with schools
- Recruiting and screening program volunteers
- Managing volunteer STEAM coaches
- Coordinating and delivering volunteer training
- Tracking data
- Supporting and motivating program volunteers
- Selecting program curriculum



"I have one young lady who would like to be an astronaut because of the time she spent at STARBASE. This past summer, she convinced her mom to let her go to space camp and was able to participate in that program. She just started high school this year but remembers how awesome this program is. It is incredible to know that STARBASE can ignite a spark in a child and lead them to think about choosing STEM careers. Thank you for providing this opportunity for my students! We truly appreciate it."

- TRACY ORTIZ, EDUCATOR AT
CLIPPERT MULTICULTURAL
MAGNET HONORS ACADEMY,
ATTENDING STARBASE ONE

²³ STARBASE 3.0 programs were conducted at CA - STARBASE Los Alamitos, GA - STARBASE Robins, KS - STARBASE Kansas - Kansas City, Manhattan, Salina, Topeka and Wichita, LA - STARBASE Louisiana, NM - STARBASE New Mexico, PR - STARBASE Puerto Rico, TX - Texas STARBASE Austin, VA - Winchester STARBASE Academy, VT - STARBASE Rutland and STARBASE South Burlington, and WV - STARBASE Martinsburg.

STEAM Coaches

STEAM Coaches play a vital role in the success of both the participants and the STARBASE Advanced program as accessible examples of successful STEAM professionals. Serial engagements with professionals in STEAM careers allow students to network with someone experienced in the field and to envision pathways for themselves to pursue those types of careers. Additionally, STEAM coaching can be a powerful experience for STEAM professionals — building communication skills and connecting them to their community. The ideal STEAM coaching team consists of a lead STEAM Coach, representatives from local STEAM industries, college students, and members of the military. To serve as a DoD STARBASE Advanced STEAM coach, volunteers must meet the following minimum requirements:

- Be at least 18 years of age
- Successfully pass screening/background check
- Volunteer six hours per month through the club duration

The 620 coaches who participated in the STARBASE Advanced programs during SY 2022-23 came from a variety of STEAM professions which included military, DoD professionals, industry professionals, and college students who support the STARBASE Advanced program staff (see Table 9). Working with a coach, participating students are exposed to the lifelong benefits of higher education and a career in a STEAM-related field. They may also receive guidance about educational and career options. The target coach-to-student ratio defined in the DoDI for the STARBASE Advanced program is 1:4, and approximately 57 percent of clubs met this ratio. The SY 2022-23 ratio

for STARBASE 3.0 clubs averaged one coach for every six student participants.



Table 9: STEM Coach Types

Type	Number of Coaches
Military	265
DoD Science and Engineering	58
Non-Military, DoD, Professionals	44
Industry Professionals	14
College Students	2
STARBASE Staff Members	99
Host School Staff Members	122
Other	16
Total Number of Coaches	620

Funding

The DoD STARBASE Advanced programs operate through a combination of federal and private funds.²⁴ Of the 54 DoD STARBASE Advanced locations, 80 percent operate solely using their federal DoD STARBASE funds. The remaining 20 percent reported receiving additional funding from a combination of non-DoD and private organizations.

STARBASE Advanced Program Oversight

Throughout SY 2022-23, directors of the participating locations were interviewed during site visits and surveyed to obtain data regarding program requirements, participants, curriculum, staff, and funding to help determine the overall operational status of the STARBASE Advanced programs.

²⁴ Private funds include not-for-profit, donations, grants, and host school contributions.



DoD STARBASE WHERE ARE graduates THEY NOW?

LETTER OF SUPPORT FROM DoD STARBASE GRADUATE Josh Cordova



IN SPITE of being home to three national laboratories, New Mexico's K-12 public schools do not have a concerted focus on STEAM education. So, I know I was very fortunate when my family signed me up for the charter school lottery to attend the Albuquerque Institute of Math and Science (AIMS), and again when my name was drawn to attend.

AIMS students are in grades six through twelve, and they get to take two additional enrichment programs along with their core courses. One of the most rewarding programs is the New Mexico (NM) STARBASE Advanced 2.0 program which focuses on rocketry. In this program, the Air Force Research Laboratory (AFRL) scientists and engineer mentors assist the STARBASE Advanced 2.0 Coordinator and classroom teacher as student teams design, build, and launch rockets. The AFRL sponsors the DoD STARBASE program in NM which developed the initiative at AIMS. Taking the STARBASE 2.0 rocketry class was an amazing opportunity to get to know adults employed in STEAM professions, and under their guidance, to apply the lessons we learned in math and science in a hands-on course. My team excelled, and we were fortunate enough to qualify to go to the national competition in Washington, D.C. While we did not do great at nationals — we did adequately adjust for humidity in our calculations. It was an important opportunity and experience to travel and compete based on our STEAM knowledge and application.

"Taking the STARBASE 2.0 rocketry class was an amazing opportunity to get to know adults employed in STEAM professions, and under their guidance to apply the lessons we learned in math and science in a hands-on course."

- JOSH CORDOVA

My STARBASE NM experience made me aware of other opportunities with the AFRL, so I applied and was accepted as a summer intern and later, as a student pathways scholar. Both positions have allowed me to keep a focus on my academic career while working in a STEAM environment. As with my high school rocketry course, the whole time I've been in college I've worked with professionals in STEM fields — engineers, architects, scientists. Though I am still a student, I now attend meetings, go on site visits, and work alongside many of them. That level of contact has been another kind of hands-on education, seeing how these professions come together in the real world on various projects.

This year, I was given the opportunity to give back as a mentor to the STARBASE Advanced 2.0 students studying rocketry at AIMS. It's really something to be on the other side of the equation, watching the students as they figure out how to design, build, launch, and then improve upon their work. I have high hopes for my new team, and while I appreciated the program when I took it, I think I appreciate it even more now, knowing the doors that STARBASE NM and AFRL have opened for me. I hope I can help do the same for the students I mentor.

DoD STARBASE 2023 HIGHLIGHTS

SHARING STEM

STARBASE Hanscom has long focused on building children's confidence in STEM fields. Now, Bridgewater State University students are bringing the learning to new heights.

TWENTY education majors recently helped teach science, technology, engineering, and mathematics to fifth-grade English language learners while improving their own skills as budding teachers.

"I love the hands-on aspects and learning alongside the kids," said Marissa Exama, class of 2024 and an early childhood education and English major from Gloucester. "I just wanted to step out of my comfort zone."

The experience, which will involve a second group of students next summer, is funded by a \$300,000 grant from the National Science Foundation (NSF).

Students took two free courses about teaching English language learners and incorporating STEM topics such as viscosity, force, motion, and coding in lessons. Then, they used their new skills during weeklong internships at STARBASE.

"They've blown us away with their enthusiasm and passion for this," said Dr. Jeanne Carey Ingle, an elementary and early childhood education professor coordinating the program with colleague Nicole Glen.

As part of the NSF grant, Ingle and Glen are researching how to prepare future educators to teach STEM to students who are not native English speakers.

"They've blown us away with their enthusiasm and passion for this."

- DR. JEANNE CAREY INGLE






"There are a lot of opportunities to do STEM where language doesn't need to be a barrier," Dr. Glen said. In one such activity, children from Boston's Josiah Quincy Elementary School watched excitedly as a robot they coded drove on an oval track. When it veered off course, BSU students helped the children discover why the robot failed.

"They bring inquisitiveness and energy, and I think they bring a fresh perspective," Dr. Peter Holden, director of STARBASE Hanscom, said of involving Bridgewater students.

Julia Sullivan, class of 2023 and an elementary education and English major from Cambridge, started with minimal STEM experience. Now, she sees it as an integral part of teaching. "The kids really like it and thrive off learning it," she said. "I'm learning lots of different strategies."

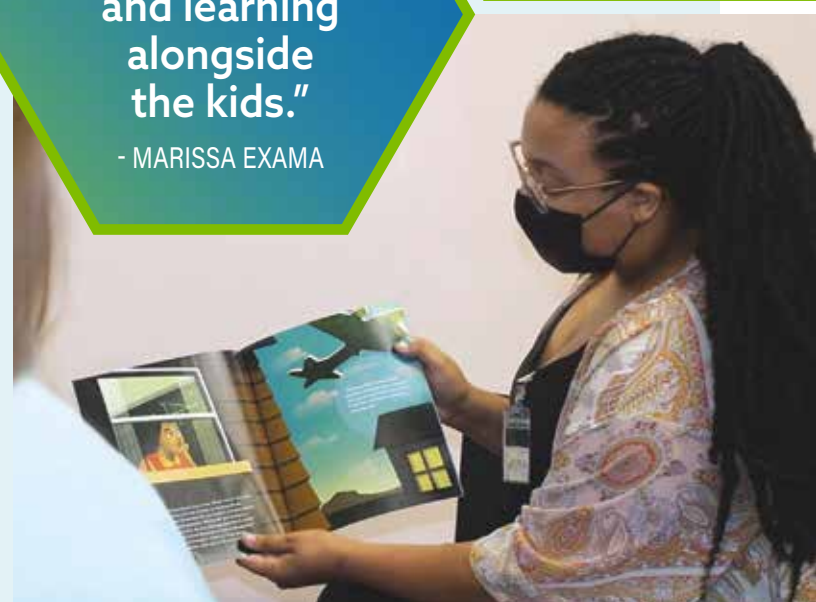
Grace Martel, class of 2023, who is from Uxbridge and aspires to become a reading specialist, said the program prepared her for the diverse students she will serve during her career. "I think it was a really good learning experience," said Grace, who is majoring in early childhood education and psychology and minoring in special education. "It shows how Bridgewater wants to expose education majors to different experiences we might face in the field."

Source: <https://www.bridgew.edu/stories/2022/sharing-stem>



"I love the hands-on aspects and learning alongside the kids."

- MARISSA EXAMA



"The kids really like it and thrive off learning it. I'm learning lots of different strategies."

- JULIA SULLIVAN



DoD STARBASE WHERE ARE graduates THEY NOW?

LETTER OF SUPPORT FROM DoD STARBASE GRADUATE **Michael Vincent**

I ATTENDED DoD STARBASE in Wichita, Kansas, at McConnell Air Force Base over the summer of 1997 as I was entering 5th grade. As a child, I was always fascinated with airplanes and hungry for any kind of knowledge about aviation. I would pore over books and magazines about aircraft and try my best to understand what was in them to become an expert. STARBASE was an opportunity to feed my hunger for knowledge, so I jumped at the chance to attend. The most memorable parts of the course were getting to fly the flight simulators and model rockets. I believe this was the first time I had used any type of computer simulator, and I became fascinated with flight simulators, which would become relevant later in my career. I remember that part of the curriculum talked about Bernoulli's principle and how it stuck with me. I understood

it in principle, but it would really click when I started flight training. I walked away from STARBASE, deciding that whatever I did in my career would involve aviation somehow.

My passion for aviation grew after STARBASE with my involvement in the Civil Air Patrol in high school. I studied psychology at Wichita State University (WSU) while earning my pilot's certificate at a local airport. During my psychology coursework, I discovered the field of human factors, which is the study of how humans interact with technology. This would open a path to the rest of my career. I volunteered in a research lab at WSU and would eventually be hired as a research associate at the National Institute for Aviation Research (NIAR) at WSU, helping design the user interface for an Air Force Unmanned Aerial Vehicle (UAV). My background in aviation and research made me uniquely qualified for the role. I would move on to earn my master's degree in human factors and systems engineering from Embry-Riddle Aeronautical University, where I continued working on research projects for pilots and aviation weather. I took an internship with Honeywell Advanced Technology Europe in Brno, Czech Republic, where I helped design an electronic flight bag that is now available in the Apple App Store.



"STARBASE was a pivotal point in my development as it inspired my interest in flight simulation and gave me the confidence to continue to learn."

- MICHAEL VINCENT



After my internship, I was overjoyed to be offered a job at NASA Langley Research Center in Hampton, Virginia. At NASA, I would lead research projects that defined the performance standards for how unmanned vehicles will detect and avoid other aircraft. This involved designing a large-scale, human-in-the-loop flight simulation experiment that investigated how UAVs would impact the workload of pilots and air traffic controllers. I would also be the principal investigator for a series of UAV flight tests at NASA Armstrong Research Center at Edwards Air Force Base, California and tested how well detect-and-avoid systems performed under different conditions. After the UAV project ended, I moved into my current role as an associate project manager for the System-Wide Safety project, which researches how we can manage

aviation safety as the airspace becomes busier and more complex with new types of vehicles like UAVs and electric vertical takeoff and landing (eVTOL) aircraft.

STARBASE was a pivotal point in my development as it inspired my interest in flight simulation and gave me the confidence to continue to learn. If I had not participated in STARBASE, I would not have felt empowered enough to continue to pursue my career in aviation.

MICHAEL VINCENT

Associate Project Manager – System Wide Safety Project
NASA Langley Research Center
Hampton, Virginia

DOD STARBASE STRIVES TO INCLUDE ALL STUDENTS

The dictionary defines “Inclusion” as the practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized, such as those who have physical or intellectual disabilities and members of other minority groups.

DOD STARBASE is uniquely designed for all students, regardless of socio-economic background, cognitive ability, physical limitations, language barriers and behavioral disorders, to be successful and have an engaging experience in STEAM. Through the hands-on, minds-on approach spiraled through various curriculum fields and activities, all participants are given the opportunity to learn in an inclusive environment. Through collaboration with experts, a focus on individual student needs and adjusting to necessary modifications, the STARBASE program can support all students throughout the 25 hours of instruction.





One program translated their activity log and key program documents into braille for a student who was visually impaired, while another adjusted their instruction to allow the use of technology to include a student who has worn hearing aids since they were nine months old.

DoD STARBASE Academies across the nation make adjustments based on student needs on a regular basis. Recently, two programs were highlighted in the national newsletter for their efforts in ensuring the success of students with disabilities. One program, STARBASE High Sierra, translated their activity log and key program documents into braille for a student who was visually impaired, while another, STARBASE Fort Harrison, adjusted their instruction to allow the use of technology to include a student who has worn hearing aids since they were nine months old.

No student should ever be excluded from participating in any aspect of the DoD STARBASE program due to physical or intellectual disabilities. From STEM tours on a military installation to rocket launches, the curriculum and foundational instructional design allows for the adaptation of content and strategies to make DoD STARBASE available for all. There are no limitations on what students can accomplish not only at the program, but in the future as the nation's next scientists, technologists, engineers, and mathematicians.





DoD STARBASE WHERE ARE graduates THEY NOW?

LETTER OF SUPPORT FROM DoD STARBASE GRADUATE Joshua Medina



“Thanks to the devotion of the STARBASE program and the love and passion that the staff put into their everyday jobs, I can certainly say that the experience lived that one short week brought me to where I am today!”

- JOSHUA MEDINA

MY JOURNEY began while attending the Carmen Sanabria Figueroa Elementary School, and I had the opportunity to attend STARBASE Puerto Rico at Muniz Air Force Base (AFB) as part of the Science program in sixth grade. This was the first time I had visited the base or even seen Air Force military personnel.

When I attended the STARBASE program, I became fascinated with all aspects of biology and the diversity of Planet Earth and beyond. The teachers and the resources at STARBASE were excellent, the number of daily projects was fascinating as well, and I quickly became engaged in the program. This ignited a passion for science that took me later to be accepted into the specialized High School for Science and Math, University Gardens, where I graduated with vast knowledge in topics like biology, anatomy, and physics. Later, I chose to study forensic sciences at Universidad del Turabo in Gurabo, Puerto Rico. While there, I had the opportunity to work in the Crime Scene Investigation Unit as a student and later became a State Police Officer for the Puerto Rico Police Department. I noticed how attention to detail is paramount in this career field, and I enjoyed the excitement of problem-solving in the process of discovering clues that lead to solving crimes.





Starbase Graduate, TSgt Joshua Medina (front row, far left) talks with students at STARBASE Puerto Rico.

“STARBASE Puerto Rico helped spark my initial interest in STEAM, and the positive role models at Muniz AFB opened my eyes to a possible military career.”

- JOSHUA MEDINA

I currently serve as a Unit Training Manager for the 156th Security Forces Squadron, 156th Wing, Muñiz Air National Guard Base, Puerto Rico. My job is to train, manage, supervise, and perform an array of Base Defense and Ground Combat training for more than 100 Defenders to protect personnel and resources from hostile forces. I had originally enlisted in the Marines in 2008 and joined the United States Air Force in 2014, completing the Security Forces Academy in February 2015. For the past seven years, I have held a variety of security and law enforcement positions related to Air Base Defense in Air Combat Command which included service in Kuwait and the Middle East.

STARBASE Puerto Rico helped spark my initial interest in STEAM and the positive role models at Muniz AFB opened my eyes to a possible military career. Thanks to the devotion of the STARBASE program and the love and passion that the staff put into their everyday jobs, I can certainly say that the experience lived that one short week brought me to where I am today!

PROGRAM OVERSIGHT

Compliance

The Office of the Assistant Secretary of Defense (OASD) for Manpower and Reserve Affairs (M&RA) has the overall responsibility for the management of the DoD STARBASE program. The Department of Defense Instruction (DoDI) 1025.071, provides the policies and procedures that guide the current DoD STARBASE academies. The DoDI directs the locations on operational requirements such as the number of classes, classroom hours, student numbers, target student population, participant eligibility, program site location, staffing models, core curriculum, and reporting requirements. These items are reviewed by the Operational Evaluation team. A separate Resource Management team ensures that all DoD STARBASE programs also comply with the regulations, policies, processes, and procedures associated with the accountability and management of DoD-owned property and equipment and the financial management of federal funds. Both types of evaluations are conducted on a scheduled three-year basis with special reviews conducted as directed by OASD/M&RA.

Operational Compliance Procedures

The Operational Evaluation (OE) process was designed and developed to ensure that the DoD STARBASE academies adhere to the DoDI as well as to other administrative directions and reporting requirements directed by OASD/M&RA. Three progressive levels of program and organizational performance are identified — Basic (Level I), Advanced (Level II) and High Performing (Level III). Each level has a prescribed set of activities which must be met for full program compliance at that level.

To improve efficiency of the overall evaluation process, several changes were made in FY 2023. To address the continued growth of the STARBASE program, all Basic (Level I) and Advanced (Level II) required reviews were combined into a single OE site visit. This allowed for review of both program levels at the same time, but also allowed the team to coach and guide locations on how they could better advance their program. In addition, the on-site review of hard copy required documents was changed to electronic submission prior to the visit. This allowed the evaluation team to review program documentation prior to the visit which gave them a better picture of program operations and areas, if any, that needed to be addressed during the visit.

The performance level of a STARBASE program is determined through site visitations, academy reporting requirements, and periodic surveys using detailed criteria, that is established and reviewed annually by OASD/M&RA and the STARBASE OE team. Shortfalls or non-compliance issues found are typically managed through a corrective action plan agreed upon by the participants and OASD/M&RA. In most cases, these corrective action plans are short-term and successfully obtained. The attainment of the performance level under review is held in abeyance and considered “pending” until the corrective action requirements are completed and verified.

The OE assessment system also ensures that the academy can only advance to higher levels of performance after it successfully attains a positive assessment at the prior level (i.e.: an academy must meet all required Basic (Level I) activities before it can claim any Advanced (Level II) designation and so on).

The successful attainment of these levels of performance provides OASD/M&RA and the military service representatives a way to determine the efficacy of the program. The system also distinguishes and identifies those locations that operate at higher levels of performance to their sponsors and participant groups, the local community, the target group of students, the school systems, and military sponsors.

The following sections outline details of the performance assessment system.

Performance Level Descriptions

The Basic Academy (Level I)

The Basic (Level I) criteria include all DoDI requirements and operating guidelines stipulated by OASD/M&RA. This incorporates required program activities such as student numbers, classroom hours, installation of core curriculum content, military-installation program delivery, emphasis on target student population, required documentation (i.e., MOU's, student participation forms, etc.), reporting requirements, and a number of administrative responsibilities such as employee evaluations, building accessibility, student assessments, visiting teacher surveys, etc.

The Advanced Performing Academy (Level II)

The second level of performance requires attainment of Basic (Level I) status and success with a set of defined operational extracurricular STEAM activities for middle school and/or high school students. The mission of the advanced performing academy is to extend the positive impact of the DoD STARBASE program using an afterschool and summer STEAM coaching approach that solidifies student involvement and engagement with the school.

The High Performing Academy (Level III)

Academies must achieve Level I and II status levels before they can be assessed at Level III. Level III requires the development of an activity, or set of activities, that significantly advances the DoD STARBASE program vision and mission. For FY 2023 this also required the maintenance of Level I and II for two evaluation cycles (six years). A revision to this requirement was approved by OASD/M&RA and will be implemented in FY 2024.

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

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



“Technology development plays a critical role in national defense. As an Air Force data scientist, I work directly to support the DoD. Technology development also more generally supports our economy and improves quality of life. I love STARBASE because it captures the imaginations of our nation’s youth. It gets them excited to learn more about STEM fields. The spark ignited in these children may be the first step to developing our future scientists and engineers.”

- LT. COL JESSE PETERSON,
UNIVERSITY OF MN DULUTH ROTC COMMANDER,
STARBASE MINNESOTA-DULUTH

FY 2023 Operational Compliance Results

Initial Operational Evaluations

New STARBASE programs are visited approximately one year after starting operations for their Initial Operational Evaluation. During this visit, program operations and documentation are reviewed, and guidance is provided to ensure that the new program and director have all the resources they need and are on target for success. During FY 2023, six Initial Operational Evaluations were conducted to help guide new directors at FL - STARBASE Central Florida and STARBASE Pensacola, STARBASE Guam, NJ - STARBASE Joint Base McGuire-Dix-Lakehurst, and NV - STARBASE Henderson and STARBASE High Sierra.

Operational Evaluations

The Operational Evaluation (OE) is conducted over a three-year cycle, regardless of performance level, to confirm basic compliance with program requirements. As previously indicated, this site visit process was modified in FY 2023 to combine Basic and Advanced program reviews into an overall OE.

The OE visit involves a 1 - 2 day review of program operations, documentation, classroom observation, interviews with the director and staff, and other participant groups, as appropriate. At the conclusion of the visit, an exit-briefing is conducted with the commanding officer hosting the program, other program representatives, and the DoD STARBASE director to review the preliminary results of the visit and to discuss if any corrective action is required. A plan-of-action is developed, and a schedule for completion is mutually agreed upon. A written report is then sent to the OASD/M&RA program manager upon completion of the visit. OASD/M&RA forwards the final report to the director and host command leadership and may discuss the key points of the report with them. A written summary of progress, made by the DoD STARBASE director, is sent to OASD/M&RA as corrective action tasks are completed, and in some instances, a follow-up visit may be recommended to ensure and document that corrective action has been

taken. Overall, the non-compliant activities most commonly noted are administrative/technical in nature. Given the number and scope of activities, the number of more serious compliance incidents is small and involves only a few academies. One of the most common concerns expressed by directors was student transportation and bus driver shortages which impacted their overall student numbers, hours of instruction, and program attendance.



"STARBASE Guam was an AWESOME experience for our fifth grade students and teachers. STARBASE provided opportunities for students to work "hands-on" with STEM activities that could not be provided in the regular classroom. The STARBASE teachers were excellent in encouraging critical thinking, creativity, problem-solving, and cooperative learning, which greatly impact child development and learning. In addition, the STARBASE Guam teachers made the learning activities MEANINGFUL and FUN! The students...and teachers alike wanted more!"

- ROCHELLE DIAZ, MARIA ULLOA ELEMENTARY SCHOOL
ATTENDING STARBASE GUAM

Special Assistance/Follow-Up Visitations

Eight Special Assistance/Follow-Up visitations were directed by OASD/M&RA during FY 2023.²⁸ The purpose of these visits varies, and the special assistance provided may include help with program set-up, curriculum, and specific local issues involved in the program. They may also be conducted to follow-ups on items of concern from a previous site visit.

²⁸ Special assistance visits were conducted at FL - STARBASE Patrick, LA - STARBASE Fort Johnson (Polk), NV - STARBASE Nellis, NY - STARBASE Fort Drum, OR - STARBASE Kingsley, STARBASE Rees (Umatilla) and STARBASE Camp Rilea and GA - STARBASE Savannah.



"STARBASE does an unbelievable job of keeping students engaged during the entirety of each day. As educators, we are very aware of how difficult it is for students to stay focused while learning. However, at STARBASE, students remain focused, learn new information, and participate in hands-on activities that they truly enjoy doing. The teachers at STARBASE are extremely knowledgeable, have excellent rapport with students, and make each activity a great experience for students."

- RUTH AGUILAR, EDUCATOR AT
TROST ELEMENTARY SCHOOL,
ATTENDING STARBASE PORTLAND



Resource Management Compliance Procedures

During FY 2023, OASD/M&RA combined Property Management and Financial Management into a more in-depth Resource Management Evaluation process to include all the fiscal responsibilities and requirements and the property accounting procedures of STARBASE programs. This included reviews of fiscal year expenditures to evaluate compliance with fiscal regulations and the execution of each location's annual budget and the accounting of all equipment and supplies.

The Department of Defense service component (Air Force, Air Force Reserve, Army, National Guard, Navy, and Space Force), governing fiscal documents and resource management procedures are vastly different in some instances. As such, the financial section of the Resource Management Checklist is broken down into two sections — National Guard (Cooperative Agreements) and Active/Reserve Programs, which allows the evaluation to center in on the pertinent requirements of the host service component.

Resource Management Compliance

During FY 2023, 22 existing STARBASE programs and four new programs were visited. Visitations to existing sites centered on their current Resource Management practices and how they could be improved. At the new STARBASE sites, the Resource Management team members trained the Directors and their staff on proper procedures and related documentation. All locations were found to be compliant with the Resource Management checklist.



DoD STARBASE WHERE ARE graduates THEY NOW?

LETTER OF SUPPORT FROM DoD STARBASE GRADUATE **Rachel Goss**

I GREW UP homeschooled, and I had a love for learning from an early age. Some people called me a know-it-all, but that was because I truly wanted to know everything about any given subject. I was curious about the world and how it works. Going to DoD STARBASE was an amazing experience for me because not only was I able to ask instructors questions, but I was also able to discover the answers for myself. The hands-on science curriculum was like nothing I had ever seen before.

"Working at STARBASE is truly such a fulfilling job. I can see the impact that it makes on students every day, because, 10 years ago, I WAS the student being impacted by this program."

- RACHEL GOSS



Above: Rachel Goss, holding an egg as a student at STARBASE Portland.
Right: STARBASE Portland Assistant Instructor, Rachel Goss (right), assisting in the classroom.



I attended Oregon's STARBASE Portland for the first time as a fifth grader and continued attending summer programs all throughout my sixth and seventh grade years.

One of my favorite activities at STARBASE as a kid was learning how to make 3D renderings of objects using a CAD program. I have always thought that 3D printing technology was so cool, and it was amazing to be able to bring things to life in that way.

I loved to be challenged, but I hated the idea of failing at something or not doing it the "right" way. It was an environment like STARBASE where you can never fail, that gave me the confidence to do things that I otherwise wouldn't have.

STARBASE heightened my passion for discovery. I loved my instructors, and I wanted to be just like them when I was older. My dream was to be a teacher and inspire confidence, curiosity, and a true love for learning just like they had for me.

Today, I work at STARBASE Portland as the office specialist and assistant instructor. I get to see kids come in and be excited to learn. I get to see kids who don't believe that they can do hard things, succeed in activities that they hadn't even heard of before. Kids come in and discover that they are extremely talented at programming robots, or using CAD, or they find chemistry fascinating, or they see an F-15 and realize that they are excited about aviation, and they get to ask a million questions about it.

Working at STARBASE is truly such a fulfilling job. I can see the impact that it makes on students every day, because, 10 years ago, I WAS the student being impacted by this program.



DoD STARBASE WHERE ARE graduates THEY NOW?

LETTER OF SUPPORT FROM DoD STARBASE GRADUATE Nolan Earnest

STARBASE Kingsley Leads Student into Career as a Mechanical Engineer

IT WAS during my five days of discovery at STARBASE Kingsley in 2014 that I decided I wanted to be an engineer. The “what if” hooked me. I’m currently in my junior year at Oregon Institute of Technology (OIT) as a mechanical engineering student. During those days as a STARBASE student, learning about the engineering design process and Newton’s Laws, the engineering field earned my interest.

My favorite memories of STARBASE were designing, building, and testing, especially Eggbert’s “spaceship,” for his trip slamming into the moon. I also enjoyed the straw rocket experiment. I tried different fletchings on my straw rocket but discovered that in this case, the best trajectory was all about mass, force, and angle of launch, and not so much about aerodynamics.

Busing onto Kingsley Field Air National Guard Base and seeing the service members in uniform made me feel like I should behave better because of a higher expectation. Pausing class at STARBASE to listen to the fighter jets scream by really brought into perspective how close we were to cutting-edge technology. Our class toured the Kingsley Engine Shop where they were fixing F-15 jet engines. It feels surreal now to think I had the opportunity to see professional NDI (Non-Destructive Inspection) lab mechanics, 10 years before taking the fracture mechanics course I am in right now.

The curiosity STARBASE gave me was the main reason I took the next step and applied for, and was accepted into, the Mazama High School/OIT STEM&M program as a high school sophomore. I was later accepted into the OIT Mechanical Engineering (ME) program and plan to graduate next year with a bachelor’s degree in ME. Upon graduation from OIT, I hope to work in the automobile industry and gain insight into how to design vehicles and hopefully build something that excites. I credit the hands-on experience of STARBASE for allowing me to discover my own aptitude for engineering and teaching me to get after it.

NOLAN EARNEST
Student at OIT, Mechanical Engineering Program

The curiosity STARBASE gave me was the main reason I took the next step and applied for, and was accepted into, the Mazama High School/OIT STEM&M program as a high school sophomore...
...I credit the hands-on experience of STARBASE for allowing me to discover my own aptitude for engineering and teaching me to get after it.

- NOLAN EARNEST



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 (OASD) for Manpower and Reserve Affairs (M&RA) oversees the program and distributes funding. In FY 2023, the total program budget was \$50,000,000 — an increase from the \$42,000,000 allocated in FY 2022. This increase funded the start-up of three new program sites and allowed existing programs to add classroom capacity, upgrade classroom technology, add staff, and make other program improvements. During FY 2023, OASD/M&RA allocated \$47,949,906 to program operations. The remainder of the appropriation was used for assessment activities, staff development, training, and overall program design and development activities.

In FY 2023, the median operating cost per location was \$571,206. Several factors contribute to the cost variances, including geographic location, number of operational classrooms, type and number of supplementary programs, salary scales, and number of employees. OASD/M&RA annually reviews each location's budget to maintain an equitable distribution of funds.

The operation of simultaneous classrooms requires duplicate equipment, supplies, and staff. Many DoD STARBASE locations offset these expenses by sharing equipment between classrooms. These offsets keep staff costs down to an average of 75 percent of their operating budget. Operating costs per operational classroom are shown in Table 10.

Table 10: Operating Costs Per Classroom

Classrooms	Median	Average Staff Costs
1	\$434,076	\$328,485
2	\$569,938	\$427,554
3	\$802,021	\$560,878
4	\$748,720	\$579,730



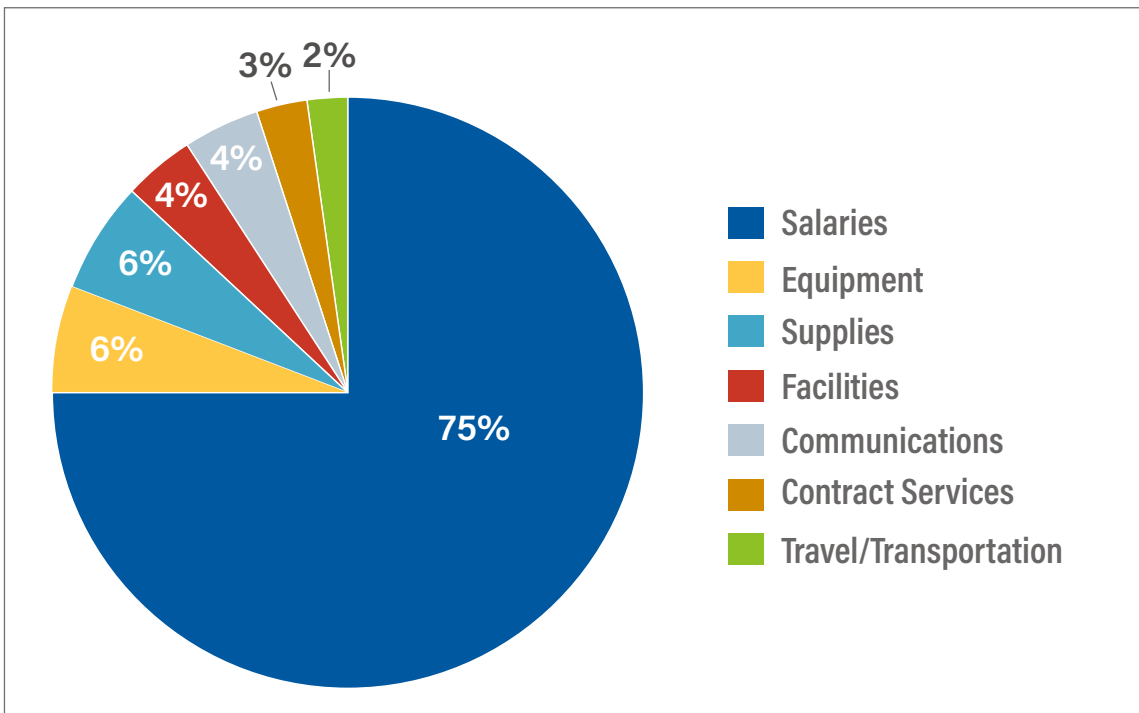


"To be honest, when I first heard about STARBASE, I wasn't too interested. But, you have inspired me to the next level! My new favorite subject is science! I can't explain how grateful I am to learn new things with you guys. Every Thursday after school, I'd tell my family everything I learned at STARBASE that day. I know more things about science than my older sister does because of STARBASE!"

- AVA, STUDENT AT CARKENORD ELEMENTARY SCHOOL, ATTENDING STARBASE ONE

Overall expenditures of DoD STARBASE funds allocated to each program site are shown in Figure 2. Staff costs on average, account for 75 percent of the site budget followed by equipment (6 percent), supplies (6 percent), facilities (4 percent), and communications (4 percent). Contract services were (3 percent), and travel/transportation were (2 percent), which covers costs for staff business travel.

Figure 2: FY 2023 Expenditures of DoD Funds



In addition to DoD funds, 28 of the 81 locations obtained funding from non-DoD sources such as state allocations, grants, and donations. The total raised from non-DoD funding for FY 2023 was \$1,168,744.00 with the majority coming from state funds and grants/donations at 55 percent and 42 percent, respectively. Academies used supplemental funding for supplies/instructional materials (72 percent); equipment (4 percent); staff salaries (15 percent); facilities/furnishings (1 percent); contract services (5 percent); public relations/outreach (1 percent); and transportation/travel (2 percent).



DoD STARBASE WHERE ARE graduates THEY NOW?

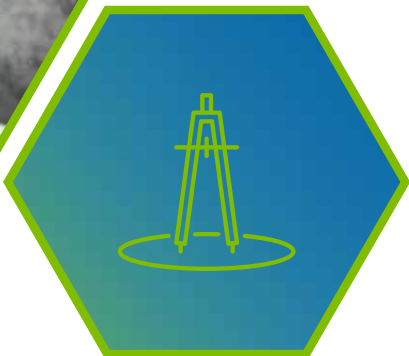
LETTER OF SUPPORT FROM DoD STARBASE GRADUATE **Alexis Forge**

From STARBASE Student to STARBASE Instructor

WHEN I was 10 years old, I had a life-changing opportunity to attend STARBASE Topeka in Kansas. What an incredible five days of STEM exploration! Looking back, the field trip to STARBASE was a pivotal moment in my educational journey. As a young, curious mind with an interest in Science, Technology, Engineering, and Mathematics (STEM), this experience inspired me to learn so much more about STEM than what was provided in the traditional classroom. It not only exposed me to the fascinating world of STEM but also ignited a passion for becoming a science teacher.

During my time at STARBASE, I had the privilege of visiting the Air National Guard 190th Air Refueling Wing. This was my first opportunity to visit a military facility and interact with military personnel. This was an incredibly unique and memorable experience for a small-town Kansas kid! Along with the amazing location, I recall that the engaging, technological instruction we received at STARBASE was quite literally mind-boggling. We had the opportunity to engage with a flight simulator where I quickly learned that being a pilot was maybe not the best option for me. We also learned how to code robots which in 2006, was unheard of! The “hands-on minds-on” experience that STARBASE provides is like no other opportunity for students.

The impact of my STARBASE experience didn't end with the journey back home. It served as a catalyst for my academic and career choices. I have always had a passion for education and engaging with students. My opportunity to attend STARBASE further encouraged me to go into the field of education and provide the best “hands-on, minds-on” experiential learning I could for my students. When I accepted my first teaching job, I was lucky enough to enter the field as an elementary STEM instructor where I provided



“I wanted the opportunity to provide the experience I had with STARBASE to generations of STEM minds that will soon be shaping our world.”

- ALEXIS FORGE



"My opportunity to attend STARBASE further encouraged me to go into the field of education and provide the best "hands-on, minds-on" experiential learning I could for my students."

- ALEXIS FORGE



STEM activities for students in grades K-6. Later I moved up to teach sixth grade science. I embraced the opportunity to engage with robotics and engineering projects, but most importantly I embraced the opportunity to inspire youth to want to continue to learn about STEM. I challenged myself to provide a STARBASE (esque) learning experience allowing students to drive the inquiry style of understanding in the ever-expanding field of STEM.

Fast forward to the present day. In May 2023, I accepted a position as a program instructor at STARBASE Manhattan (Kansas). When I heard about the opening to be a STARBASE instructor, I was beyond thrilled! I wanted the opportunity to provide the experience I had with STARBASE to generations of STEM minds that will soon be shaping our world. A fact worth pointing out is when I was hired for the position, my husband, who also had the opportunity to attend STARBASE as a fifth grader, said, "Wow, how exciting! You will get to do STARBASE every day." How right he was! I feel that I am one of the most fortunate educators in the world to inspire students in this environment.

The DoD STARBASE organization does more than just introduce students to STEM; it inspires and encourages students to engage with STEM in a way they simply cannot in the general classroom. I am the educator that I am today because of many experiences, but most importantly because of my experience with STARBASE. My daily goal is to provide the experience I was able to receive and encourage all students to dive into STEM. This program is pivotal to students, and often an incredibly unique interaction where STEM and military careers collide. We open the door for students to fully explore all of the opportunities that are available in the world of STEM.

ALEXIS FORGE

STUDENT ASSESSMENT

Overview

The effectiveness of the DoD STARBASE program in sparking the interest of fifth graders is evaluated each school year by measuring changes in STEAM-related knowledge and attitudes of students who attend a DoD STARBASE Academy. This evidence-based approach utilizes a time-series research design to look for significant improvements over baseline inclinations after going to STARBASE. An online assessment gathers student answers and background information privately.

The assessment gathers students' data from their attendance at STARBASE in terms of:

- Knowledge questions that measure STEAM conceptual understanding,
- Attitudes about STEAM topics (e.g., subjects, applications, personal mastery),
- Interest in STEAM careers, both military and civilian, and
- Opinions about the military (e.g., military personnel and jobs).

Evaluation Methodology

ASSESSMENT ADMINISTRATION

- ▶ *Students completed the assessment online under the supervision of STARBASE instructors.*
- ▶ *Students completed the assessment twice, first at the start of their 25-hour exposure (pre-program) and again at the end of their experience (post-program), to evaluate the effect of STARBASE participation on their STEAM understanding and related attitudes.*

STEAM KNOWLEDGE MEASUREMENT

The knowledge section of the assessment consisted of 20 multiple-choice STEAM problems reflecting domains of the approved STARBASE STEAM curriculum.

- ▶ Curriculum areas are Science, Technology, Engineering, Arts and Design, and Mathematics. The Science domain includes four subcategories: Science Fundamentals, Characteristic Properties, Motions and Force, and Science Exploration.
- ▶ Scores were computed as the percentage correct of the 20 multiple choice questions for a total score and on subsets of questions within each curriculum area. This facilitates comparisons with previous yearly results that may have different total numbers of items.
- ▶ A "gap" score was determined by subtracting the pre-program assessment value (i.e., percentage) from the post-program value obtained by each student and then averaging across the entire sample.



"I got to experience STEM and science activities that I normally don't get to do in class. I have never been on the military base so going to STARBASE was an exciting adventure. All fifth graders should get the chance to attend STARBASE!"

- TRISTIN PINKERTON, STUDENT AT SYCAMORE ELEMENTARY,
ATTENDING STARBASE ARIZONA



"This is one thing I look forward to sharing with my students each year. They are so engaged and look forward to it every week. The instructors are kind with our high-needs students and make them feel competent and seen. My students interest is truly sparked in such a unique way through the STARBASE curriculum and staff."

- MADELINE STUDEBAKER, EDUCATOR AT BLOOMINGDALE ELEMENTARY,
ATTENDING STARBASE FORT WAYNE



STEAM ATTITUDES MEASUREMENT

The attitude survey portion of the assessment consisted of 19 core statements about student views on STEAM topics and careers and also perceptions of the military. Students rated their opinion of each one on a Likert-type scale from 1 (Strongly Disagree) to 5 (Strongly Agree). In addition, five items assessed student attitudes of the STARBASE program at the completion of the academy.

- ▶ A mean averaged score of student overall STEAM interest was created by summing each student's ratings for the 19 core items and dividing the sum by that number of items.
- ▶ For the post-program assessment only, the five extra evaluation items were included in calculating the overall STEAM interest mean value based on a total of 24 items.
- ▶ Overall attitude scores were averaged across all students to obtain a mean total score of the sample on overall STEAM interest for both the pre-program and the post-program.
- ▶ Four unique dimensions of students' attitudes and interests related to STEAM were also identified from their survey responses using statistical modeling techniques. Table 11 describes these student STEAM interest dimensions at a general level.

Table 11: Measurement Dimensions of STEAM Attitudinal Survey

Measurement Dimension	Definition	Number of Items ²⁹
STEAM Concept Awareness	Recognition of the value of STEAM for solving challenging problems and improving life.	10
Science Confidence	A positive view of one's own capacity for learning about science.	3
STEAM Interest & Motivation	Appreciation and enjoyment of STEAM activities.	5
STARBASE Program Evaluation	Positive reactions to the STARBASE program in learning about STEAM.	6

²⁹ The total number of items is 24 because the STARBASE Program Evaluation scale includes five statements used only in the post-program assessment in addition to the 19 statements presented both times.

Study Sample

This year, the STARBASE student assessment was administered between January and May. The assessment was administered online twice to selected classes of students (pre-program and post-program) at each participating academy to gauge program impact. All locations assessed at least one class as requested. Some locations assessed two or more classes.

- Students attended one of the 76 active STARBASE Academies out of 79 programs distributed nationwide and in two U.S. territories as shown in Figure 3 by region.
- Each participating academy is sponsored by one of six DoD components as shown in Figure 4.
- Pre- and post-program assessments were matched for 2,606 students and those served as the sample for analysis.

Figure 3: Student Sample by Region

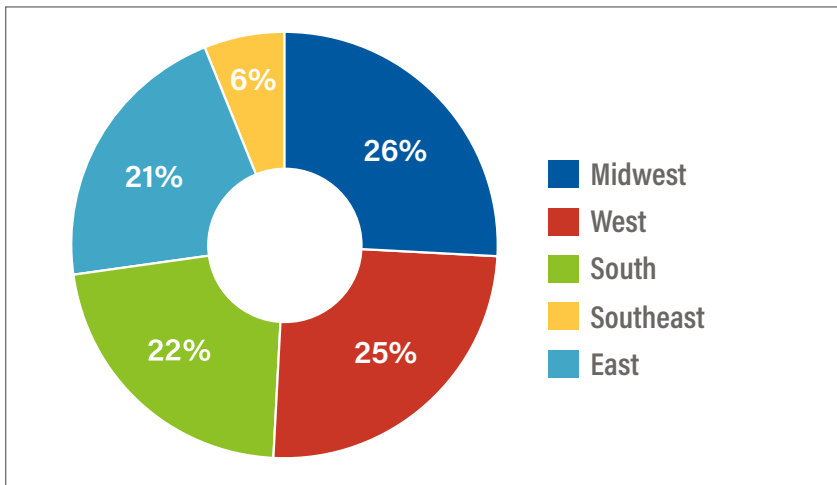
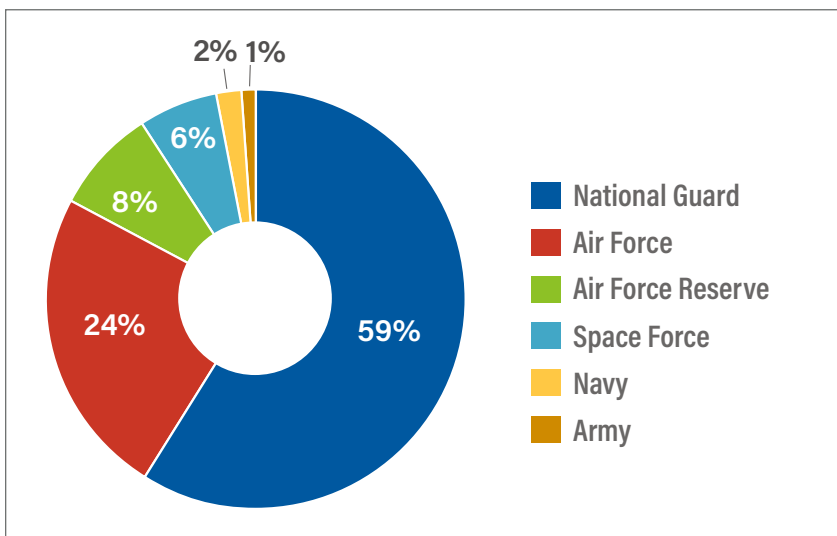


Figure 4: Student Sample by DoD Component



"Absolutely blown away by this experience. So grateful that you have taken the time to teach and bless our kids. This experience is unmatched and will follow them throughout their life. They won't forget your kindness or what they learned. My daughter wants to be a chemist because of her experience here! I am beyond grateful to all of you."

- KRISTIN SCOTT, PARENT OF PARTICIPATING STUDENT FROM COLORADO SPRINGS CHRISTIAN SCHOOLS, VISITOR AT STARBASE PETERSON



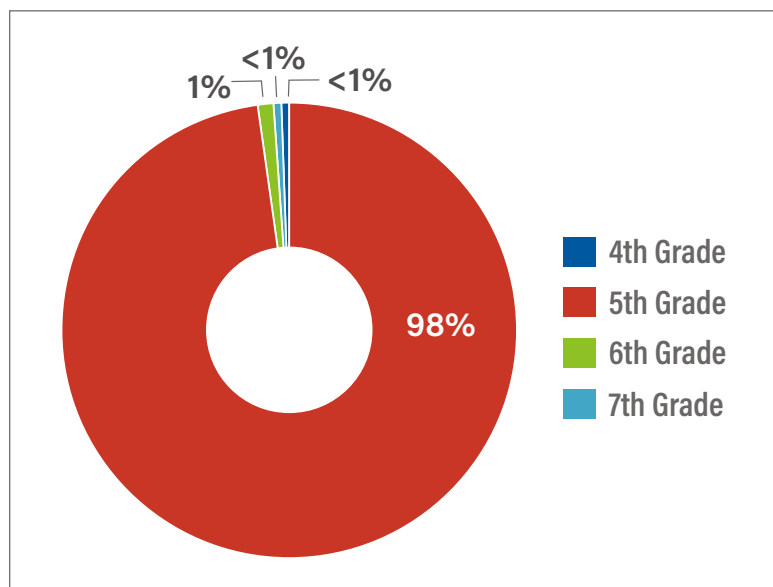
STUDENT SAMPLE SNAPSHOT

Students who attended STARBASE in person and completed the assessment both before and after participation appear reasonably like students assessed in previous years.

- A vast majority of the students, 98 percent, were fifth graders, which is the program's target population (see Figure 5).
- More than half (54 percent) of participating students reported they had heard of STARBASE before finding out that they would be attending.
- The same percentage (54 percent) also reported they knew someone who previously attended STARBASE.
- About 43 percent reported they had not met any military people before attending DoD STARBASE.
- However, approximately 16 percent of the students reported their parent or guardian is in the military.

These aspects of the students' prior knowledge about STARBASE and experience with military personnel suggest that DoD STARBASE largely succeeds at serving the targeted communities of fifth grade students in the locale of each academy.

Figure 5: Percentages of Students Participating in the DoD STARBASE Program



"STARBASE (Hill) was a fantastic learning experience and something I will never forget. It inspired me to think outside of the box and to see that there are a lot of job opportunities that include STEM."

- IZABELLA JACKSON,
STUDENT AT MEADOWBROOK ELEMENTARY,
ATTENDING STARBASE HILL, UT

STEAM Knowledge Performance

STARBASE IMPACT ON STEAM PERFORMANCE

- ▶ *Gap scores of the total score as well as all five STEAM knowledge curriculum area scores showed significant increases in the post-program test after attending STARBASE (.001 level of confidence).*
- ▶ *Total STEAM knowledge scores increased by 15 percent on average (mean gap score = +15.3 percent).*
- ▶ *Pre-program domain scores ranged from 38 percent to 50 percent correct answers; average post-program percent correct answers ranged from 55 percent to 68 percent.*
- ▶ *Scores in the Engineering curriculum area increased by about 21 percent on average (Engineering mean gap score = +20.6 percent).*
- ▶ *The Science domain showed a score improvement of 17 percent on average (mean gap score = +17.1 percent).*
- ▶ *Mathematics scores increased by exactly 10 percent on average, while Technology increased by 6 percent exactly.*

These findings suggest that students were fairly knowledgeable already in the two areas when they arrived.

MILITARY EXPOSURE COMPARISON ON STEAM PERFORMANCE

Students' total STEAM knowledge was compared according to whether they had met military people before attending STARBASE.

- Students who previously met military people had significantly higher total knowledge scores, both prior to and after the program, than students who did not know military people before (.001 level of confidence).
- Both groups made significant gains in STEAM knowledge (+16.4 percent with +13.6 percent without prior exposure, at a .001 confidence level). This indicates that the STARBASE program improved the STEAM understanding of students regardless of previous exposure to military people.



"STARBASE was so worth it! My students had so much fun and learned so much. They were engaged the whole time with activities that really complimented our curriculum, especially in science and math.

The students remembered the activities and referred to them throughout the year. They made so many connections to the curriculum."

- ELLEN, TEACHER,
CLARK COUNTY SCHOOL DISTRICT,
NV - STARBASE HENDERSON



STEAM Attitudes

STARBASE IMPACT ON STEAM ATTITUDES

- ▶ The post-program mean total score increased significantly (.001 level) over the pre-program total score, from 4.06 to 4.22. This is in line with the amount of change seen annually since 2019 for STARBASE, which has usually been on the order of +.10 - +.20. The 2023 mean total values are approximately 1.5 points lower than means before 2022 due to changing the survey to a 5-point response scale from a 7-point scale in 2022.
- ▶ The mean values were converted to percentage values of the highest attainable response favorability (5.0) to facilitate comparability of scores across years. The relative percentage of change this year is +3.2 percent, which is consistent with the gains observed during 2019-2021, and it is the same as it was last year.
- ▶ The top-rated attitudinal statement by students both pre- and post-program is:
 - (1) *I like doing science experiments.*
- ▶ The five STEAM-related attitudes that showed the greatest increase in favorableness by students from pre-program to post-program assessment are:
 - (1) *Engineers help solve challenging problems (+6.4 percent).*
 - (2) *I am good at science (+5.7 percent).*
 - (3) *I think DoD STARBASE will help me do better in school (+5.0 percent).*
 - (4) *A lot of people who work for the military use science, technology, engineering, or mathematics (+4.9 percent).*
 - (5) *Learning about science is easy for me (+4.5 percent).*
- ▶ Overall, 100 percent of the 19 core survey attitude statements increased in favorableness, of which 15 statements (79 percent) yielded post-program ratings that were significantly more favorable on average than at pre-program assessment at the .01 confidence level. The increases of three statements (16 percent) were significantly higher at a .05 level of confidence.
- ▶ Two attitude dimensions that showed the most positive shifts between pre- and post-program are *STEAM Concept Awareness* and *Science Confidence*. All attitude dimensions reflected significant increases (.001 level of confidence).

These results demonstrate that STARBASE promotes confidence in students, particularly in science, with a growing appreciation of STEAM-related applications in general. Actually, attitudes about all aspects of STEAM improved after attending STARBASE. For example, students became more interested in STEAM for solving problems and identified its importance with the contributions of engineers and scientists to making life better for everyone. The results also show that STARBASE promotes more awareness among students that military personnel perform a variety of jobs using STEAM principles.



“The STARBASE program at our local armory in Wilmington, NC is absolutely fantastic! It provides a nurturing and engaging environment for students who take part in the instruction. This STEM program offers a wide range of activities and educational opportunities that foster creativity, teamwork, and personal growth. The positive impact it has had on the local community is remarkable, as it brings families together and strengthens social bonds. STARBASE is truly a gem that enriches the lives of our children and enhances the overall well-being of our community.”

- SFC, STEVEN CALDWELL,
RECRUITING AND RETENTION
SECTION CHIEF,
STARBASE WILMINGTON



"DoD STARBASE made me challenge myself and work hard. When I don't get it right, I can persevere and try even harder. It made me feel good to come back the next day. I want to be a veterinarian when I grow up, and learning more about STEM made my thoughts about it even stronger."

- ATLEY COLLINS, STUDENT AT NORTH SHORE COMMUNITY SCHOOL,
ATTENDING STARBASE MINNESOTA-DULUTH

MILITARY EXPOSURE COMPARISON ON STEAM ATTITUDES

- Students who met military people before going to STARBASE expressed significantly more favorable attitudes about STEAM, both prior to and after the program, than students who had no previous contact with military people (.001 level of confidence).
- This was borne out by significant differences on all of the core survey STEAM statements at both points of assessment, including greater appreciation for math, liking engineering, learning how technology works, and realizing that military personnel use STEAM in their jobs.

RELATIONS OF STEAM ATTITUDES TO STEAM KNOWLEDGE

Student scores on measurement scales of the five STEAM attitudinal dimensions were correlated to STEAM knowledge total score. This analysis was performed by correlating pre-program attitudes with 1) pre-program knowledge; 2) post-program knowledge; and 3) pre- to post program knowledge gap. Additionally, post-program attitudes were correlated with post-program knowledge. Results of the analysis found that:

- The *STEAM Concept Awareness* dimension is the most strongly-related attitudinal indicator of STEAM knowledge, both pre- and post-STARBASE, with all correlations significant (.001 level) in the positive direction (i.e., higher attitude scores = higher knowledge scores).
- The *Science Confidence* attitudinal dimension is the second strongest indicator of STEAM knowledge total scores pre- and post-STARBASE (.001 level), with the exception of gap scores for gain in knowledge (.001 level).
- Student *STEAM Interest and Motivation* attitudes are also related significantly to STEAM knowledge total score pre- and post-program (.001 level), though at a more moderate level.
- Post-program *STARBASE Program Evaluation* dimension is the second strongest indicator of pre- to post-program STEAM knowledge gap scores, also in a positive direction (.001 level).

The relationships identified between student attitudes about STEAM and student STEAM knowledge improvements at multiple levels of analysis demonstrate the important role of student interest and motivation in driving their understanding of STEAM.

Conclusion

The DoD STARBASE program met its primary goals successfully in 2023 as determined by analyses performed on the student assessment of STEAM-related knowledge and attitudes before and after participating in the program:

1. Program attendance produced significant gains in students' overall understanding of STEAM concepts as demonstrated by their pre- and post-program knowledge test performance, and also by increased correct answers for each of the STARBASE STEAM curriculum domain areas.
2. Participation in the program led to significant gains in students' attitudes about science, technology, engineering, and mathematics as demonstrated by their pre- and post-program attitudinal survey responses, too. The strongest improvements occurred in attitudinal areas related to STEAM Concept Awareness and Science Confidence. Such enhancements in favorable attitudes make it more likely that students will be motivated to continue learning about STEAM topics throughout their academic careers.

The STARBASE program also furthered the DoD's community outreach objectives by creating or reinforcing favorable impressions among many students of the military and of the STEAM nature of many jobs that people who work for DoD and the military do.

Overall, most students completed the program with better STEAM knowledge, greater awareness of STEAM importance, and more interest in STEAM-related careers. This broad impact should likely help stimulate continuing school learning about STEAM principles, applications, and career opportunities.





DoD STARBASE WHERE ARE graduates THEY NOW?

LETTER OF SUPPORT FROM DoD STARBASE GRADUATE Christian Agaba

"STARBASE is invaluable because it only takes one student guided down the right path to be the next world-famous scientist or engineer to solve a significant world problem or find a cure. The mission of STARBASE deserves to be expanded upon to create a nation of innovators," says Christian Agaba, STARBASE alumni, who first attended STARBASE Minnesota-St. Paul in March of 2013 with his fifth grade class from Battle Creek Elementary School. "The impact of STARBASE's ability to grow means more kids will have access to the resources of STARBASE and can experience a career path they may not have had the chance to know before. They will see STEM as a viable option for them in their future."



Christian recalls programming rovers and reminisces about the engineering design process saying, "the trial-and-error process, solving problems, and making things work was really impactful in how I solve problems today." Christian has fond memories of collaborating with classmates while at STARBASE Minnesota, coming up with different designs together as a team to see what worked and what didn't. Today, he observes that same processes of teaming, brainstorming, and seeing what works best in his academic pursuits in engineering at the University of Minnesota-Twin Cities, where he is studying mechanical engineering. Christian's current coursework includes Mechanical Measurements, Feedback Control Systems, Finite Element Model and Analysis, and Heat Transfer. His course in Heat Transfer naturally brings back memories of a lesson he conducted at STARBASE on the different ways heat moves.

Christian's parents immigrated from Uganda to Minnesota in late 1999, and Christian was born in Woodbury shortly after they settled. He grew up on the east side of St. Paul where he attended Battle Creek Elementary School. When asked about how this background may have impacted his pursuit of STEM, he responded that "No one in my family has been in STEM or an engineer, and if not for STARBASE, I don't think I would have the access or resources to explore that for myself. Those opportunities were harder to come by and cost too much." "STARBASE," which Christian credits for being the most significant STEM experience he had in school, "solidified my enjoyment of STEM." He recounted, "After coming to STARBASE, I realized that yes, this is for me, this feels right."

In 2022, Christian received a \$1,000 scholarship from STARBASE Minnesota, Inc., made possible by a grant from Collins Aerospace that funded five scholarships to former STARBASE students pursuing post-secondary education in STEM. Looking back, Christian remarked on the endless opportunities and multiple paths one can take when pursuing

"No one in my family has been in STEM or an engineer, and if not for STARBASE, I don't think I would have the access or resources to explore that for myself. Those opportunities were harder to come by and cost too much."

- CHRISTIAN AGABA



STEM, something he also learned when exploring careers at STARBASE. "What's unique about STARBASE is that it showcases many different types of engineering and related careers." Prior to college and through the first summers of his post-secondary pursuits, he was mostly drawn to automotive engineering, having been fascinated with the inner workings of cars and how things work his whole life. After working a job for three summers at Freewheel Bike and quickly becoming the top sales associate in the company, he found interest in bicycle engineering as well. Combined with coursework and an internship with Andersen Windows where he used CAD to design new product ideas, Christian forged his own path to mechanical engineering, and he is just one year away from pursuing his dreams.

"I believe that by using the tools that I have learned pursuing a STEM field, I will be able to create a positive impact in the world. A career in engineering will allow me to innovate and shift our current understanding of technology. As we move into the future, the United States and the entire world will need as many people involved in STEM as they can get so we can continue to create positive change in our lives."

DoD STARBASE 2023 HIGHLIGHTS

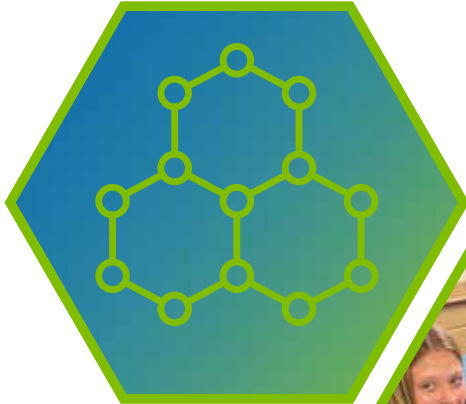
STARBASE Hawai'i's National Impact Highlighted on Local Network



STARBASE Hawai'i was recently featured on NLTV (Na Leo 'O Hawai'i), a local television network on the island whose mission is to facilitate diverse community, education and government dialogue and expression by providing television access for the people of the County of Hawai'i. STARBASE Hawai'i was recognized for the amazing things they are doing in STEM for the keiki community.

Visit <https://tinyurl.com/4s74stux> to see the video!





"The team at Ft. Harrison STARBASE is truly magical! Each year my class comes out here, they have new, exciting, hands-on activities which engage the learning of all my students. As an elementary teacher, it is sometimes difficult to teach all content areas. I am always amazed at how the STARBASE team can incorporate multiple academic content into each lesson. My favorite part of STARBASE is watching my students engage and learn. Teamwork is an integral part of completing activities at STARBASE. Some of my students are strong with teamwork activities, others, not so much. However, with encouragement from fellow classmates and the team of teachers out here, all my students have been successful in working with others. The encouragement all students receive allows them all to achieve in different ways. It is okay to fail and try again. Many students do not get this message in their lives. Out here, that message rings clear. Students are comfortable and not afraid to try new ways of achieving a goal. It is obvious this team has received and continues to receive great training. They are extremely well-prepared for delivering instruction, for handling any situation, and they have very strong classroom management. All these things combined make for a truly excellent experience every time!"

- HEATHER BROWN, EDUCATOR AT BROADWATER ELEMENTARY SCHOOL,
ATTENDING STARBASE FORT HARRISON



EDUCATOR SUPPORT



Glenn Duncan STEM Academy

Ryan G. Smith, Principal
Jody Walker, Assistant Principal
Nadia Rosales, Administrative Secretary



My name is Ryan G. Smith, and I am the current principal of Glenn Duncan STEM Academy. During the 2022-2023 school year, we participated in STARBASE High Sierra with our three fifth-grade classrooms. The experience was so valuable for our students, that we signed up again to participate in STARBASE High Sierra for the 2023-2024 school year.



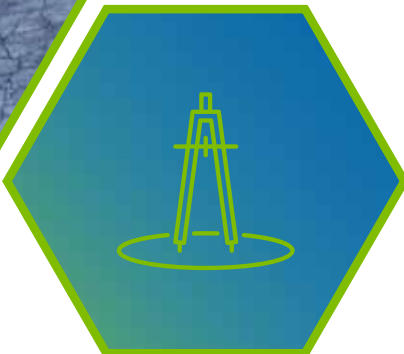
At Glenn Duncan STEM Academy, our goal is to expose each of our students to the most viable career clusters in Northern Nevada through career exposure and exploration. Some of the career clusters we include are education and human services, manufacturing and engineering technology, agriculture and animal sciences, hospitality and tourism, public safety, and careers in the government, etc. STARBASE High Sierra perfectly aligns to our schoolwide goals and mission and has enhanced our students' engagement and educational experience.



The feedback from the program has been very positive from our students and staff. Students had the opportunity to participate in hands-on learning in the following areas: science fundamentals, motion and force, applying technology, number relationships, geometry, measurement, and so much more. One of the best aspects of the program is that the students can bring their experiences back with them into the classroom.



Teachers have also had very positive things to say about the STARBASE High Sierra experience because of the number of opportunities it provides their students. Teachers will often refer to many of the STARBASE High Sierra activities that students experienced when they return to their classrooms, which is an incredible enhancement to our curriculum.



I am a huge supporter of STARBASE High Sierra because of the opportunities it provides for our students. The program provides students with hands-on, real-world experiences that enhance students' future. Please reach out for any questions or comments about the benefits of STARBASE High Sierra.

Sincerely,
RYAN G. SMITH, PRINCIPAL

PARTICIPATING TEACHER SURVEY

Overview

Each school year, classroom teachers who attend a DoD STARBASE Academy with their students are asked to complete an online survey to share their opinions about the STARBASE program.

- The DoD STARBASE Teacher Survey is one component of a multimethod evaluation strategy designed to gauge program impact, goal attainment, and value to stakeholders.
- Teachers completed the 61-item survey on or soon after the last day of a DoD STARBASE five-day program session they and their students attended.
- The survey measures teachers' perceived effectiveness of DoD STARBASE in terms of:
 - ▶ Presenting STEAM concepts to students,
 - ▶ Its impact on their students' interest in STEAM-related learning and careers,
 - ▶ Its influence on improved personal characteristics of students in school,
 - ▶ Its influence on their own attitudes toward endorsing STEAM careers in DoD to their students and in becoming more skilled in STEAM instruction, and
 - ▶ Support for the program by key stakeholders in the school ecosystem.
- Teachers use a seven-point Likert-type scale to rate STEAM-relevant attitudes/behaviors.



SURVEY SAMPLE

The DoD STARBASE Teacher Survey captures feedback from teachers throughout the school year. Given the voluntary nature of answering the survey and its broad use, the sample is reasonably representative of many, if not all, of the classes and schools that attended a DoD STARBASE academy during the 2022-2023 academic year.

- Teachers attended one of 77 active STARBASE Academies distributed nationwide and in two U.S. territories, sponsored by one of six DoD components.
- During the 2022-23 academic year, 3,681 school personnel responded to the Teacher Survey from August 2022 until June 2023, of which 96 percent were classroom teachers.



"One of my students is new to our school this year. They struggled to engage with others, and it became quickly apparent that excessive absenteeism was going to be a concern. On our first visit to STARBASE, they became an entirely new version of themselves. They were engaged in the activities, participated in group discussions, and were raising their hand and volunteering. It was a profound change in the learner I had been seeing in the first two months of school. I am pleased that this student has continued their positive growth and change in the classroom as well as not missing a day of school in 5 weeks. Thanks to the engagement of STARBASE, this student is finding the value of education."

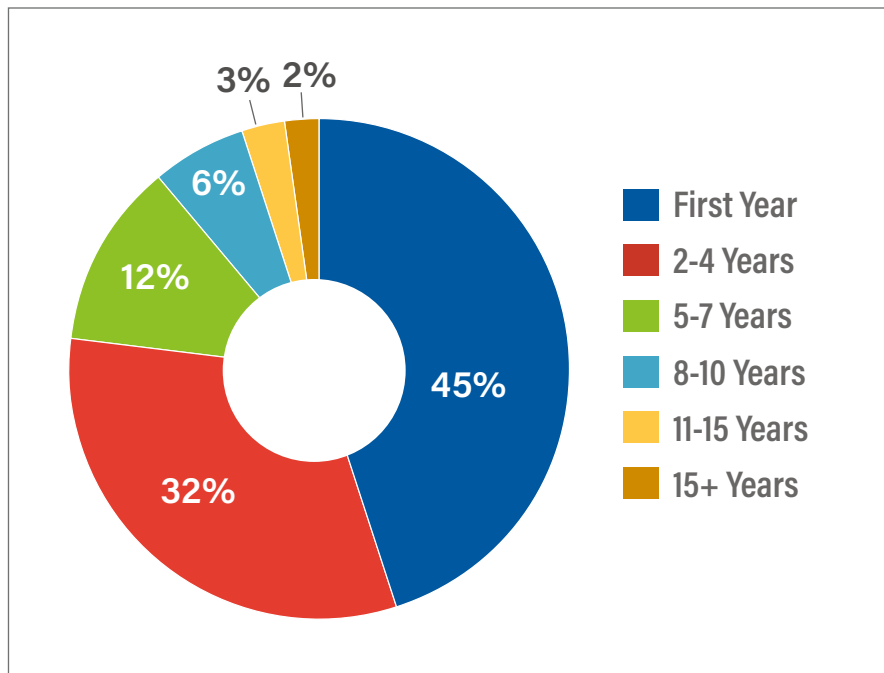
- JENNIFER TIFFT, EDUCATOR
AT TINMOUTH ELEMENTARY
SCHOOL, ATTENDING
STARBASE VERMONT, RUTLAND

Teacher Snapshot

Respondents to the DoD STARBASE Teacher Survey appear fairly similar to public school elementary teachers in the U.S., in regard to their teaching experience. The most recent data that is available on elementary school teachers, reported by the *COE - Characteristics of Public School Teachers (ed.gov)* for 2020-2021, found 63 percent of all public school elementary teachers had 10 years or more of experience and 29 percent had three to nine years of experience, while 7 percent had fewer than three years of teaching experience. These figures are little changed from the previous national data reported for 2017-2018.

- In this sample, 53 percent of responding teachers have taught for more than 10 years, 24 percent have been teaching for 5-10 years, and 16 percent have two to four years of experience teaching (see Figure 6).
- Importantly, there were 1,668 teachers, or 45 percent of the sample, that attended STARBASE for the first time. These teachers offer a novel outlook on evaluation of the program.
 - ▶ 8 percent of respondents indicated this is also their first year of teaching.
- Teachers who have attended STARBASE previously (55 percent) were asked a series of questions about its impact on student outcomes they observed afterward.
- Many respondents gave suggestions for improvements to STARBASE in an open-ended comment question. Ideas mostly concern time management, adaptive learning and accessibility, advance teacher orientation, classroom takeaway materials, and visit or class activity scheduling. Teacher comments are provided in a separate document.
- In addition, almost 85 percent of respondents report that their college major and/or minor was **not** in a STEAM-related area. These teachers are about evenly divided in being very/quite confident (52 percent) or fairly/somewhat confident (46 percent) in teaching STEAM topics to students, but 2 percent acknowledge that they are not at all confident in teaching STEAM topics.

Figure 6: Number of Years Attending the DoD STARBASE Programs



DoD STARBASE Impact on Students

STIMULATING STEAM INTEREST

- ▶ *Teachers commonly report that students gain an improved understanding of science by attending DoD STARBASE (mean rating = 6.69).*
- ▶ *Teachers also indicate more interest by students in learning about technology (mean rating = 6.50) and science (mean rating = 6.42) after participating at STARBASE.*
- ▶ *Teachers view DoD STARBASE as helping students better appreciate how math can be applied to a variety of situations (mean rating = 6.32).*
- ▶ *Most teachers observe that students also show increased interest in learning about engineering (mean rating = 6.14) and mathematics (mean rating = 5.75).*

POST-PROGRAM IMPACT

Teachers with at least one year of prior experience at DoD STARBASE also rated the beneficial impacts they noticed after students have had a DoD STARBASE experience. The means for the post-program impacts are presented in Table 12 in rank order. Students talking about STARBASE long after it has ended is the highest rated post-program impact once again, perhaps as much because it is the most obvious behavior for teachers to observe often as it is a sign of lasting student enthusiasm.

While most of the item means closely approximate magnitudes and ranking from 2022, teacher reports of increased participation in STEAM and other STEAM-related challenge programs showed the largest absolute gain (+.14) year over year. Conversely, both of the highest-ranked items had modest absolute decreases from 2022 (-.08): students talking about STARBASE after it ends, and better understanding of how STEAM skills/abilities fit job requirements for certain career fields. Such shifts may to an extent, simply reflect a regression to the mean effect with different samples over time. (-.22).

Table 12: Teacher Mean Ratings for Post-STARBASE Student STEAM Behavior Impact

Post-Program Impact Item	2022 Mean	2023 Mean
The students talk about DoD STARBASE long after the program has ended.	6.50	6.42
Attending DoD STARBASE helps students understand better how STEAM skills/abilities fit job requirements for certain career fields.	6.44	6.36
DoD STARBASE helps to improve cooperative learning in the classroom even after the program ends.	6.19	6.16
After DoD STARBASE, students are more interested in using computers for class-related learning activities.*	6.08	6.12
Attending DoD STARBASE helps students link their experience to careers in both military and non-military positions.	6.06	6.11
After the DoD STARBASE program, the students ask more questions about technology.	5.93	5.91
Students that have attended DoD STARBASE seem to perform better on standardized state assessments.*	5.75	5.74
After DoD STARBASE attendance, there is increased participation in STEAM and other STEAM-related challenge programs (e.g., FIRST LEGO League, Odyssey of the Mind, The American Rocketry Challenge, etc.).*	5.47	5.61

*These items include a "No Awareness" response option. Teachers that selected that response option are not included in the item mean.

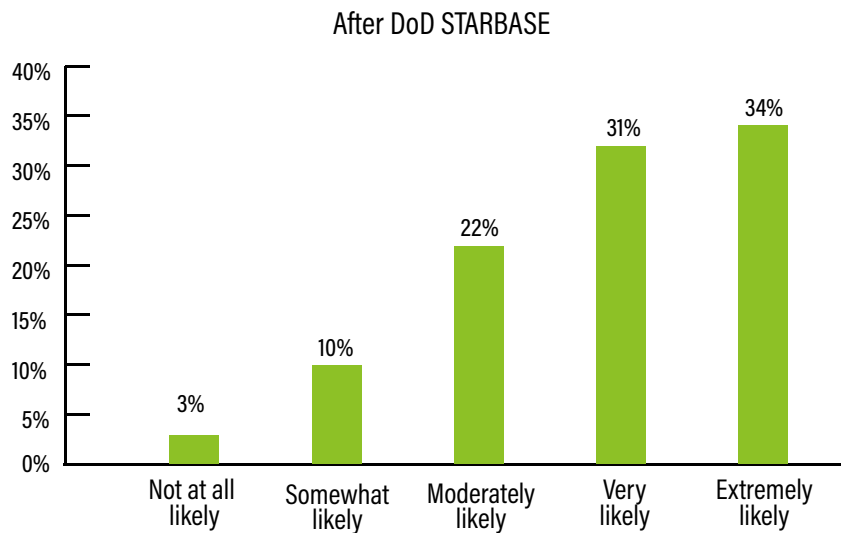
DoD STARBASE Impact on Teachers

For teachers, attending STARBASE has substantive meaningful impacts on their perspectives.

- ▶ *Nearly 91 percent of teachers attending STARBASE for the first time agree that the DoD STARBASE experience has influenced them to become more skilled in STEAM instruction.*
- ▶ *82 percent (N = 1,364) of teachers who attend STARBASE for the first time report becoming more aware of Department of Defense STEAM career opportunities (both military and civilian).*
- ▶ *These first-time teachers also indicated how likely they are to recommend DoD or the military as a career option after attending a DoD STARBASE program.*
 - Results show that 65 percent of the teachers are Extremely or Very Likely to recommend military or DoD civilian careers after participating at STARBASE for the first time.

Figure 7 displays the level of endorsement by first-time attendee teachers based on percentages of answers within each of the response categories.

Figure 7: Likeliness to Recommend DoD or Military Career Options After Attending DoD STARBASE



DoD STARBASE Impact on Schools

- ▶ *Almost all responding teachers (99.3 percent) say they will recommend DoD STARBASE to colleagues.*
- ▶ *Nine out of ten teachers (90.2 percent) say that DoD STARBASE provided information about how the STARBASE curriculum relates to state education standards.*
- ▶ *A very large proportion (85.4 percent) also say they will use DoD STARBASE materials in their classroom.*

The DoD STARBASE program influences students and teachers, yet also impacts the school system as well, both formally and informally. As part of the Teacher Survey, teachers shared their knowledge of specific practices based on their participation in the program. Table 13 provides the pattern of results in favorable responses to six items for this year and last year. This data tracks closely with positive responses seen a year ago except for a downward shift of intention to use STARBASE materials and techniques back in the school classroom. The adoption rate was 91.5 percent five years ago.



"STARBASE is amazing! I have been teaching for 20 years and attending for almost that many. STARBASE covers so many of our STEM standards, and the kids always make connections during lessons after attending. It is so wonderful to see how the kids grow – not only academically, but socially – after going to STARBASE. The content, staff, and overall program are exceptional!"

- VALERIE TOOMEY, EDUCATOR AT GLENWOOD RIDGE ELEMENTARY SCHOOL, ATTENDING STARBASE KANSAS CITY

Table 13: DoD STARBASE Impact on the School System

Item	Positive (Yes) Responses	Positive (Yes) Responses
	2022	2023
Is there formal communication from your school that raises community awareness of the DoD STARBASE program (e.g., letters to parents, overview at parent open house meetings, etc.)? *	74.3%	70.8%
Will you recommend DoD STARBASE to other teachers, principals, or school educators/administrators?	99.2%	99.3%
To the best of your knowledge, did your DoD STARBASE provide you and/or your school with information about how STARBASE curriculum is related to your state education standards?	90.2%	90.2%
In your view, does the DoD STARBASE curriculum help you reach your state education standards?	86.9%	86.4%
Do you or will you use DOD STARBASE materials/techniques in your own classroom?	88.7%	85.4%
Do you or will you use DoD STARBASE take-home activities beyond your classroom?	65.7%	65.0%

* This item includes an "I don't know" response option. Teachers selecting that response are not included in the sample for determining the percentage of positive responses.



“As a daughter of an educator, I am proud to see that the Air Force and DoD are supporting a mission that helps underprivileged students learn about the exciting world of STEM and learning in general.

Minnesota has had a growing education gap that disproportionately affects students in lower socioeconomic classes of the Twin Cities. STARBASE is an organization worth supporting to help close the inequal access to quality education gap and inspire younger generations to get excited for their future.”

- A1C MINDY PITZNER, 133rd AIR LIFT WING, STARBASE MINNESOTA-ST. PAUL

School Support

- ▶ *Teachers responding to the survey agree quite highly (mean rating = 6.92) that their school will attend DoD STARBASE again next year.*
- ▶ *The teachers agree strongly (mean rating = 6.36) that parents are enthusiastic about their student attending DoD STARBASE.*
- ▶ *Teachers are also very favorably disposed (mean rating = 6.31) toward receiving more STEAM supplemental teaching materials from DoD STARBASE to use in their classrooms.*

Program support includes support and advocacy of DoD STARBASE by teachers themselves, as well as the resources and support provided to the teachers in the school environment. Table 14 presents mean values on the 7-point rating scale of teacher responses to five items that reflect school and community support. A school’s plan to continue participation in the DoD STARBASE program next year (mean rating = 6.92) indicates that participating schools place a high value on having students attend the program. Moreover, it is apparent that parents are delighted their children are participating (mean rating = 6.36), and that principals are solid proponents for the program as well (mean rating = 5.86).

Table 14: Program Support Attitudes Ranked from Most to Least Favorable

	Mean
My school plans to participate in the DoD STARBASE program again next year.	6.92
Parents are delighted that their children are participating in DoD STARBASE.	6.36
I would like more DoD STARBASE supplemental resources to take back to my classroom.	6.31
I plan to incorporate DoD STARBASE teaching techniques into my daily classroom activities.	6.16
My principal is a strong advocate of DoD STARBASE.	5.86

Teacher Attitudinal Ratings

STARBASE ATTITUDES

Teachers rated 35 attitudinal items in the survey on a 7-point Likert scale from Disagree (1) to Agree (7) based on their experience with the DoD STARBASE program. Eight items relate to changes in student behavior after attending STARBASE. Therefore, teachers in their first year of attending DoD STARBASE were not asked these items. Instead, they were asked two other questions related to how DoD STARBASE affected their awareness of military and non-military jobs in DoD, and their likelihood of recommending these as career options to students.

Survey findings show that most responding teachers embrace the STARBASE program. This is evidenced by favorable attitudes, and overall high approval ratings of DoD STARBASE.

- ▶ *Teachers gave relatively higher mean ratings for the impact of STARBASE on students' grasp of STEAM concepts of science (mean rating = 6.69) or mathematics (mean rating = 6.32) and for STEAM education resources provided to teachers (mean rating = 6.31).*
- ▶ *They gave relatively lower mean ratings for the impact of STARBASE on students' future STEAM career planning (mean rating = 5.75), perceptions of students' opinions about military personnel (mean rating = 5.63), and DoD or military career options (mean rating = 5.41).*
- ▶ *All the rating factors showed mean averaged ratings well above the rating scale midpoint of 4, which indicates overall favorable ratings of STARBASE impact.*

The 35 items were combined into an Overall Engagement Index³⁰ to reflect teachers' own attitudes and their perception of students' reactions as a result of STARBASE program participation, such as:

- Grasping and enjoying the STEAM curriculum content,
- Displaying confidence and motivation in classroom settings, and
- Planning for future goals and careers in STEAM-related fields.

The Overall Index is calculated as a composite average of responses given by a teacher to the 35 items. The mean rating of the Overall Engagement Index for all teacher respondents in 2023 is 6.08. The Overall Index value indicates strong favorability of responding teachers toward DoD STARBASE influence on them and on their students as a whole.

The attitudinal items were grouped into rational behavioral areas based upon data analytic methods. Measures of participant engagement and student outcomes were also created to evaluate broader impacts of STARBASE. Table 15 presents brief descriptions of the seven areas and mean rating values on the 7-point scale for the total sample. (More details are available in the full technical report.)

Consistent with the Overall Index rating, teachers responded favorably across all engagement topics. The most favorable responses this year (presented in rank order) occurred in the areas of: Program Support, STEAM Concepts, Behavioral-Motivational, and Student Confidence.

³⁰ For teachers in their first year of attending STARBASE, the Overall Index included 27 items.

Table 15: Teacher Survey Overall Index Rating by Engagement Areas

Measurement Area	Definition	Mean Rating
Program Support	Support and resources provided to the teachers.	6.30
STEAM Concepts	Student interest in and understanding of STEAM concepts.	6.30
Behavioral-Motivational	Teachers' views of positive student behaviors as a result of STARBASE participation.	6.18
Confidence	Students' confidence in their abilities and capabilities.	6.17
Teamwork	Students working with and supporting each other.	6.05
Military and Career	Teachers' personal opinions on military career options, and their perceptions of student opinions on the same.	5.84
Future Planning	Students seeing future possibilities and opportunities in STEAM fields.	5.77

The analyses also examined the outcomes of DoD STARBASE on student STEAM and academic motivation beyond the immediate effects of attendance. The Post-program Impact scale uses responses to eight items completed by those teachers who have more than one year of experience with the DoD STARBASE program (N = 2,014). Items included a broad range of post-program measures including students' interest in STEAM topics, their career choice options, performance on state tests, and participation in STEAM-related activities. The mean rating of Post-program STARBASE impact on students by just the experienced teachers is a realistic 6.07 on the 7-point scale.

Conclusion

The DoD STARBASE program enables fifth grade students to link STEAM concepts to 'real-world' applications and their future. Their teachers report that participation in this DoD program appears to create excitement among students about their careers and future potential. Specifically, teachers attending the DoD STARBASE program report that students³¹:

- Have an improved understanding of science (mean rating = 6.69);
- Have an improved appreciation of how math applies to a variety of situations (mean rating = 6.32);
- Have more interest in learning technology (mean rating = 6.50), and more interest in learning science (mean rating = 6.42);
- Understand better how STEAM skills/abilities fit job requirements for certain career fields (mean rating = 6.36).

Based on analyses of the teacher survey and review of teacher comments, it is clear that teachers value the DoD STARBASE program experience for providing awareness of and hands-on activities in STEAM concepts to students. The survey data reveals that about 85 percent of all respondents say they plan to incorporate DoD STARBASE techniques in their classrooms, and 65 percent of first-time participants are "extremely likely" or "very likely" to suggest military or civilian STEAM career opportunities to their students. These results strongly suggest that many teachers will continue to support DoD STARBASE by using STARBASE techniques in classroom teaching of STEAM-related concepts, by recommending STARBASE to their peers, and potentially by recommending DoD career paths to students.

³¹ Likert scale based on response options from 1 (Disagree) to 7 (Agree).

LOCATIONS DIRECTORY



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

STARBASE MAXWELL

MONTGOMERY, ALABAMA



ESTABLISHED 2004	MILITARY LOCATION: Maxwell Air Force Base
SERVICE COMPONENT: Air Force	CLASSROOMS AUTHORIZED: 5



SCHOOL DISTRICTS SERVED

- Autauga County Schools
- Elmore County Schools
- Montgomery County Schools
- Pike Road Schools
- Private and Homeschool Groups

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Montgomery Education Foundation

STARBASE Maxwell, located on Maxwell AFB, Montgomery, AL has inspired and educated Montgomery River Region kids in hands-on, minds-on STEM since 2004. Hosted by the 42nd Air Base Wing, STARBASE Maxwell is the only STARBASE in the state of Alabama and has the unique pleasure of partnering with and receiving outstanding support from The Air University, 42nd ABW, 908th Air Wing (US AF Reserves), 187th Fighter Wing (AL Air National Guard), as well as the local Montgomery River Region Community. In its 19th year of operation, STARBASE Maxwell has grown to be one of the largest STARBASE academies in the nation, and they are striving to grow their STEM education, outreach, and supplemental programs to build strong foundations for Montgomery River Region youth STEM literacy.

STARBASE Maxwell's Basic program charged full-steam ahead with their five-classroom model and conducted 138 academies, graduating over 2,200 fifth graders during the 2022-2023 school year. Moreover, their STARBASE Advanced program conducted a total of nine clubs and engaged a total of 117 sixth-eighth grade students with mentorship, leadership coaching, team building, and exciting STEM-related activities, such as Drone Operations and LEGO EV3 Mindstorm Robotics. Finally, STARBASE Maxwell participated in several local area STEAM-Fair events as well as hosting 18 summer STEM camps which served over 200 students.

FY23 Program Highlights:

- » Launched monthly STARBASE newsletter "Sky Zone" that is sent out to schools and partners.
- » Conducted the highest number of summer camps in STARBASE Maxwell history to include 18 classes on site and several classes off site.
- » Hired a new director via the DoD Skillbridge program.
- » STARBASE Maxwell recognized by Central Alabama Community Foundation for their role in youth STEM education.

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STARBASE ARIZONA

TUCSON, ARIZONA



ESTABLISHED 2006

SERVICE COMPONENT: Air Force

MILITARY LOCATION: Davis-Monthan Air Force Base

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Amphitheater Unified School District
Sunnyside Unified School District
Tucson Unified School District
Vail Unified School District

Davis-Monthan Air Force Base, located in the city of Tucson, has been the home to STARBASE Arizona since 2006. The area is known for beautiful desert landscapes, an abundance of sunshine every year, and of course, skies filled often with the magnificent A-10. Nearly 900 students attended the program from four school districts in Tucson and surrounding areas.

The men and women of Davis-Monthan Air Force Base are absolutely phenomenal when it comes to supporting STARBASE Arizona. They are amazed by the thought-provoking questions students asked them regarding their careers during guest speaker presentations. They are true positive role models at their finest, who provide meaningful connections to real world STEM scenarios. Students are also provided an opportunity to visit a squadron which enhances those STEM interactions even further.

STARBASE Arizona is dedicated each and every day to empowering and inspiring students to reach for the unreachable as they navigate through the amazing world of science, technology, engineering, and mathematics. It is imperative that these future STEM leaders see their potential.

FY23 Program Highlights:

- » Conducted 100% of classes in-person.
- » Implemented a fully functioning computer lab.
- » Provided hands-on computer-aided design instruction during a computer science night hosted by a partner district.
- » Participated in Davis-Monthan's STEM Day which kicks off the Desert Lightning Air Show.
- » Hosted a fall and summer academy for military dependents.
- » Implementation of an advanced program for middle school students is scheduled to launch in FY24.

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STARBASE ARKANSAS

JACKSON, ARKANSAS



<p>ESTABLISHED 2022</p> <p>SERVICE COMPONENT: Air Force</p>	<p>MILITARY LOCATION: Little Rock Air Force Base</p> <p>CLASSROOMS AUTHORIZED: 3</p>
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SCHOOL DISTRICTS SERVED

- Arkansas Lighthouse Charter Schools
- Cabot Public Schools
- Jacksonville North Pulaski School District
- Little Rock School District
- North Little Rock School District
- Pulaski County Special School District
- Riverview School District
- Vilonia School District
- Private and Homeschool Groups

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Forge Institute

Since its inception in October 2022, STARBASE Arkansas has been providing a comprehensive STEM-focused curriculum and a supportive environment to nurture young minds, empower them with knowledge, and foster a strong sense of community. The program takes pride in being an integral part of the Arkansas STEM ecosystem. Beyond the classroom, STARBASE Arkansas is committed to reaching out to the local community through STEM outreach initiatives to enrich the educational landscape of the region.

The partnership with the 19th Airlift Wing at Little Rock Air Force Base provides STARBASE Arkansas with the opportunity for students to interact with dedicated Airmen in their duty sections. Students witness firsthand how STEM principles are seamlessly integrated into various career fields, enabling the Airmen to successfully execute their missions.

FY23 Program Highlights:

- » Hosted a dynamic STEM fest in partnership with several units from Little Rock AFB, Camp Robinson, and local businesses to welcome over 500 students from local school districts.
- » Extended program reach by introducing a third classroom, ensuring enhanced STEM education accessibility for students across central Arkansas.
- » Swiftly turned financial support into transformative learning, opening doors to students in record time, from funding to education in four months.

CONTACT INFORMATION

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STARBASE EDWARDS

EDWARDS, CALIFORNIA



ESTABLISHED 2021

SERVICE COMPONENT: Air Force

MILITARY LOCATION: Edwards Air Force Base

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Acton-Agua Dulce School District
 Eastside School District
 Muroc School District
 Tehachapi Unified
 Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Edwards, Inc.

STARBASE Edwards provides students with the opportunity to visit military-civilian facilities, engage with STEM community leaders, and explore the STEM field in a fun and engaging way. The STARBASE program gives in-depth instruction on many Next Generation Science Standards (NGSS), Common Core State Standards (CCSS), Career and Technical Education Standards, and the Computer Science Standards for California Schools. Through these activities, students are engaged in experiences in which they learn from and with other people, all while being encouraged to think critically, innovatively, and creatively.

FY23 Program Highlights:

- » Assessed demand from surrounding districts and determined 87 schools are interested in participating in the basic program.
- » Used demand level to begin the process of expanding the basic program.
- » Reworked program marketing materials to illustrate program content alignment with California state standards.
- » Began the process to secure much needed facility improvements, including repainting, making repairs, purchasing new, innovative, classroom furniture for the STARBASE classrooms, and adding an in-facility ADA bathroom.
- » Instructors received Google Educator certifications.

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STARBASE LOS ALAMITOS

LOS ALAMITOS, CALIFORNIA



ESTABLISHED 2013

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Joint Forces Training Base Los Alamitos

CLASSROOMS AUTHORIZED: 3



SCHOOL DISTRICTS SERVED

Cypress Unified
Los Angeles Unified

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Los Alamitos State Military Nonprofit

STARBASE Los Alamitos sees over 3,000 fifth-grade students every year for five days of hands-on, minds-on curriculum. In addition, they provide support and mentors to multiple area high school after-school rocket teams and provide a Civil Engineering Club for middle school students. STARBASE Los Alamitos offers innovative STEM summer programs to local scout troops and homeschool students, including advanced robotics and weather balloon curriculum and launches. In all, over 4,000 students a year visit STARBASE Los Alamitos to learn CAD, robotics, and physics. The goal here is always to prepare students for their future and help them reach their full potential.

FY23 Program Highlights:

- » Completed a winter and summer high altitude weather balloon launch as a partner with USC's Project Payload.
- » Served over 90 JROTC students in partnership with several other STARBASE programs across the country.
- » Hosted the Army Research Labs GEMS 1 summer camp.
- » Hosted and provided instruction to Orange County Girl Scouts Robotics Camp and Rocket launch, enabling the Scouts to earn their technology badge.
- » Completed their first ever Civil Engineering STARBASE Advanced Club with the Orange County Department of Education.
- » Saw over one hundred fifth-grade classes for the 25-hour curriculum.
- » Hosted their first ever high-powered rocket club where students learned how to transition from model rockets to high-powered rockets.

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STARBASE PORTERVILLE

PORTERVILLE, CALIFORNIA



ESTABLISHED 2023

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Porterville Military Academy

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Hope Elementary School District
Porterville Unified School District

STARBASE Porterville has been diligently preparing for students from the Central Valley of California to participate in the program hosted at Porterville Military Academy (PMA). Focused on providing hands-on STEM (science, technology, engineering, and mathematics) education experiences that can be aligned with fifth-grade California State Standards, STARBASE Porterville aims to play a crucial role in nurturing students' interest in STEM fields from an early age. The program's format will include a five-day visit with 25 hours of immersive STEM activities, allowing students to delve into real-world applications of STEM subjects. This approach engages students, making learning more tangible and enjoyable.

The goal of STARBASE Porterville is to have a significant impact on students by fostering a STEM-literate culture and encouraging inquiry-based learning. Program graduates will be empowered to explore and integrate STEM into their lives, education, and future careers. This is a crucial step toward preparing them for the challenges and opportunities of the modern world.

Staff has been preparing for their first group of students, anticipated January 16, 2024, by participating in a variety of trainings, including OnShape, LEGO Education Spike Prime, Sphero, and Pitsco (Rocketry & Drone Maker Kits), and visiting with other California STARBASE programs to train and collaborate. As the final upgrades are completed at the STARBASE Porterville facilities, the staff have worked to align operations with both the hosting district and school sites to introduce the program.

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STARBASE SACRAMENTO

SACRAMENTO, CALIFORNIA



ESTABLISHED 1994

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Okinawa Street Armory

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

- Delta Elementary Charter District
- Elk Grove Unified School District
- Folsom-Cordova Unified School District
- Robla Unified School District
- Sacramento City Unified School District
- San Juan Unified School District

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Sacramento Academy Inc.

STARBASE Sacramento has been a proud and proven leader in introducing STEM concepts since 1994. Currently, seven school districts and 27 schools are served with on-site, hand-on, minds-on programs. The support of the California Military Department allows STARBASE Sacramento to continue to thrive. STARBASE Sacramento will continue to provide the best STEM curriculum to the underserved youth population of the Sacramento area, as they have for the past 29 years.

FY23 Program Highlights:

- » Served over 2,200 students in FY23.
- » Hosted four summer supplemental academies, aimed at children and relatives of service members in the area.
- » Ensured consistent STEM speakers who exposed the students to their STEM careers through firsthand experiences for visiting classes.
- » Created new partnerships with the engineers at Wood Rogers.
- » Increased staff to better serve visiting students.

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STARBASE SAN LUIS OBISPO

SAN LUIS OBISPO, CALIFORNIA



ESTABLISHED 2023

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Camp San Luis Obispo

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Atascadero Unified School District

Lucia Mar Unified School District

San Luis Coastal Unified School District

San Luis Obispo County Office of Education

STARBASE San Luis Obispo is located on the California National Guard installation, Camp San Luis Obispo (SLO). Historically, Camp SLO has been the original home of the California National Guard. STARBASE SLO brings the “hands-on, minds-on” approach to a proven partner for the development of America’s future: our youth. The implementation of STARBASE makes this region a center for excellence with the investment in our country’s brightest resources.

Camp San Luis Obispo has been home to the Grizzly Youth Challenge Academy and the California Cadet Corps for decades. STARBASE SLO is able to thrive in youth-centric partnerships with Cuesta College; California Polytechnic State University, San Luis Obispo, whose motto is learn by doing; and the biggest supporter of youth programs in the state, San Luis Obispo County Office of Education. Through a strategic community network, partnerships, and an exceptional location, the program is proud to serve the students of San Luis Obispo County alongside the San Luis Obispo County Office of Education which, supports 10 public school districts and two charter school districts.

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STARBASE VANDENBERG

LOMPOC, CALIFORNIA



ESTABLISHED 2020

SERVICE COMPONENT: Space Force

MILITARY LOCATION: Vandenberg Space Force Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Lompoc Unified School District

STARBASE Vandenberg is proudly located in Central California, steps from the Pacific Ocean. Housed on Vandenberg Space Force Base, STARBASE Vandenberg has served approximately 3,000 students to date. Aside from the 62 Basic Academies conducted during the regular 2022-2023 school year, STARBASE Vandenberg also provided Supplemental Academies to military and non-military families over school breaks.

Being located on an active duty Space Force Base allows students to often witness rocket launches. It is always an exciting day at STARBASE Vandenberg when students get the opportunity to go outside and watch a rocket launch happen right before their eyes!

STARBASE Vandenberg knows that being part of a community is important. That is why they put so much effort into making their presence known by participating in back-to-school events, family STEAM nights, holiday celebrations, parades, and more.

Another way that STARBASE Vandenberg is making their mark in the community is by making partnerships with the Lompoc Library and the Lompoc Teen Center.

FY23 Program Highlights:

- » Earned Level 1 Basic Compliance Certificate.
- » Anticipate expanding their program to three classrooms, adding an advanced program, and securing partnerships with local businesses for added support.
- » Collaborated with the Lompoc Public Library and Lompoc Teen Center to provide Lompoc teens with after-school STEM workshops.
- » Welcomed families to STARBASE Vandenberg Facilities for an end of summer, back-to-school celebration.
- » Worked with Scouts USA and Girl Scouts of America earning STEM Merit badges.

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STARBASE PETERSON

COLORADO SPRINGS, COLORADO



ESTABLISHED 2014

SERVICE COMPONENT: Space Force

MILITARY LOCATION: Peterson Space Force Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Academy School District	Fountain-Fort Carson School District
Calhan School District Rural Joint	Harrison School District
Cheyenne Mountain School District	Miami-Yoder Joint District
Colorado Charter School Institute	Peyton School District
Colorado Springs School District	Widfield School District
El Paso County Colorado School District	Private and Homeschool Groups
Ellicott School District	

In beautiful Colorado Springs at the foot of Pikes Peak, STARBASE Peterson is fortunate to be located on Peterson Space Force Base (SFB), home of Space Operations Command, NORAD/NORTHCOM, and other space defense units. Colorado Springs is also home to the United States Air Force Academy, Schriever Space Force Base, and Fort Carson. STARBASE Peterson held its first classes in February 2015. Since then, their effect on STEM education in the local community has continued to grow and expand. Students are able to learn about the impact space has on their daily lives by interacting with active duty personnel working in a variety of missions such as GPS or NORAD.

A variety of supplemental events take place at STARBASE Peterson throughout the year, ranging from STARBASE Advanced, part-day STEM enrichment activities, and week-long summer camps. STARBASE Peterson is proud to work with other community partners through homeschool science fairs at the local library district, STEM nights for elementary and middle schools, and other volunteer efforts that further the expansion and visibility of STEM education in the community.

FY23 Program Highlights:

- » Exceeded minimum required classes served with 65 classes of students participating during the 2022-2023 school year.
- » Fully staffed with two highly qualified professional educators in each classroom.
- » Successfully piloted a new STARBASE Advanced program to increase STEM education for middle school students.
- » Built strong relationships with Peterson Space Force Base tenant units including several Deltas within Space Operations Command and the National Security Space Institute.
- » Hosted numerous distinguished visitors including Mrs. Betty Del Toro, spouse of the Honorable Carlos Del Toro, Secretary of the Navy.
- » Conducted STEM nights at several elementary and middle schools throughout the year to reach students not served by program.

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STARBASE CONNECTICUT- WATERBURY

WATERBURY, CONNECTICUT



ESTABLISHED 2003

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Naugatuck Valley Community College

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Brass City Charter School District
Waterbury Public Schools
Private Schools

The Connecticut Air National Guard (CTANG) has long worked to support the state of Connecticut (CT) and its communities. STARBASE CT-Waterbury is a strong example of this commitment. As a fixture in the Waterbury Schools since 2005, STARBASE CT-Waterbury serves the city of Waterbury and its surrounding communities by providing innovative and immersive curriculum and instruction to the students in the area. Located on the campus of Naugatuck Valley Community College, STARBASE CT-Waterbury engages students of all ages in learning and mentoring opportunities, as well as exposing the students to CTANG members, Navy members, and the College's various STEM programs, including the nursing labs and more. The program is proud that they have become a relied-upon partner in the enrichment of the student learning experience in the area.

FY23 Program Highlights:

- » Fully returned to normal operations including Advanced STARBASE programming.
- » Trained and acclimated new staff.
- » Engaged parents of Spanish speaking families with technology training at request from schools to improve school-parental communications.
- » Continued the creation and publication of Ask STARBASE on YouTube.
- » Was recognized as STEM All-Star program through anonymous nomination at Hartford Yard Goats Minor League Baseball Game in Pre-Game Ceremony in April.

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STARBASE CONNECTICUT- WINDSOR LOCKS

HARTFORD, CONNECTICUT



ESTABLISHED 2000

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Windsor Locks Readiness Center

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Capital Region Education Council
Covenant Preparatory School
East Granby Public Schools
Granby Public Schools

Hartford School District
Jumoke Academy District
Windsor Locks School District
Private Schools

The Connecticut Air National Guard (CTANG) has long worked to support the state of Connecticut (CT) and its communities. STARBASE CT-Windsor Locks is a strong example of this commitment. By providing innovative and immersive curriculum and instruction to the youth of the greater Hartford Area, STARBASE CT-Windsor Locks has grown into new areas and has quickly become an integral piece of the learning experiences for many communities in Central Connecticut. Located on Windsor Locks Army Readiness Center, STARBASE CT-Windsor Locks engages students in a variety of arenas of learning, including, but not limited to, the STARBASE program, Advanced STARBASE programming, one-time learning opportunities in the community, and more.

STARBASE CT-Windsor Locks has happily and proudly served the students of the state of Connecticut since 2000 and has become a relied-upon partner in the enrichment of the student learning experience throughout the state.

FY23 Program Highlights:

- » Reopened Advanced STARBASE programming in three schools following COVID-19.
- » Was recognized as STEM All-Star of the Game via anonymous nomination in a pregame ceremony at a Hartford Yard Goats Minor League Baseball game in April.
- » Orchestrated and oversaw the development of an Advanced program that grouped STARBASE students with high school students in Granby, CT.
- » Helped Advanced program students showcase a go-kart they built at the Hartford Athletic's STEM & Soccer Day.
- » Prepped and judged students for the annual Science Fair at Sarah J. Rawson STEAM School.

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STARBASE CENTRAL FLORIDA

ORLANDO, FLORIDA



ESTABLISHED 2022
SERVICE COMPONENT: Navy
MILITARY LOCATION: Naval Support Activity (NSA) Orlando
CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Florida Virtual School
 Orange County Public Schools
 Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

The National Center for Simulation

The DoD STARBASE Central Florida (SBCFL) Team is eager to share the wonderful world of modeling and simulation (M&S) with Central Florida’s fifth-grade students and their teachers to help engage and enhance science, technology, engineering, and mathematics (STEM) content knowledge, skills, and authentic application. Orlando is the epicenter for the Modeling, Simulation, and Training (MS&T) workforce and provides SBCFL students and teachers an exciting opportunity to gain experience with diverse STEM subject matter experts. The MS&T workforce can be found across interdisciplinary fields. Today, every career pathway will lead our future workforce to the creation or use of MS&T.

At SBCFL, fifth-grade students and teachers turn their “brains on” to engage in mission challenges designed to enhance STEM knowledge, processes, and practices from multiple industry perspectives with mentorship from industry, government, and academia.

FY23 Program Highlights:

- » Developed creative instructional strategies while hosting 5th grade students who spoke very little English.
- » Hosted 18 Sea Cadets from Tallahassee to spend the day learning about DoD STARBASE programs and the MS&T workforce through engagement in the DoD SBCFL Lab.
- » Hosted Admiral Grady, Vice Chairman of the Joint Chiefs of Staff, Mrs. Grady, and 12 members of Admiral Grady’s team. DoD SBCFL challenged Admiral Grady and his team to a friendly robot challenge across the USS Barbara Koscak Simulated Aircraft Carrier. No one was eaten by the sharks, and all had fun while learning and teaching.
- » Co-hosted DoD STARBASE teachers and directors at I/ITSEC for the first time to collaborate on lesson plan writing from a MS&T perspective.
- » Hosted a record number of six weeks of summer supplemental programs about “Why Robots Need People,” serving over 200 low-income and underserved students for 25-hour programs and provide bags full of STEM swag, thanks to the many friends of SBCFL.

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STARBASE FLORIDA

JACKSONVILLE, FLORIDA



ESTABLISHED 1994

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Jacksonville Air National Guard Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Duval County Public Schools
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Florida Inc.

STARBASE Florida has been a partner with the Florida Air National Guard and the Duval County Public Schools (DCPS) for over 29 years. Located at the 125th Fighter Wing in Jacksonville, Florida, STARBASE Florida has influenced over 53,500 students across 153 schools. As a two-classroom program, the STARBASE Florida program enriches the minds of at-risk youth using STEM-based initiatives. Through the mind-blowing engineering, robotics, and science activities, DCPS, the St Augustine Diocese, and the surrounding communities see the program as a pivotal piece of their struggling schools' rise from 'Good' to 'Great' status.

FY23 Program Highlights:

- » Started their first STARBASE Advanced Robotics program with St. Patrick's Catholic school. Partnering with the FIRST LEGO League (FLL) and using the Spike Prime Robots, we were able to host a successful 15-week program.
- » STARBASE Florida was able to obtain two new partnerships this year—Rotary Club of Jacksonville and Walmart.
- » Solved their transportation concern by partnering with a contracting service called Randall Transportation Services. Since they were not primary to the district bus routes, they were able to dedicate drivers to the trip at a lower price.
- » Worked with the 125th Fighter Wing to secure two storage containers to combat the limited space the program had available.
- » Received an additional state position, including benefits, to enhance the offerings of the program.

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STARBASE PATRICK

COCOA BEACH, FLORIDA



ESTABLISHED 2020

SERVICE COMPONENT: Space Force

MILITARY LOCATION: Patrick Space Force Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Brevard Public School
Osceola Public School
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

The Aldrin Family Foundation
Hope Through Education

DoD STARBASE Patrick is located in Satellite Beach, Florida and has been hosted by the United States Space Force, Space Launch Delta (SLD) 45 since 2020. STARBASE Patrick serves fifth-grade students from Brevard and Osceola County Schools Florida through the STARBASE program.

In late summer of 2023, their ability to serve students was doubled with the addition of two new classroom spaces—the Mars Room and Command Center. This past year, the program worked closely with local school districts to align resources to best serve the student population. The program staff of dedicated team members worked closely with one another to ensure activities are engaging and accessible for all students. The team-teaching approach they use meets program standards and models instructional practices for delivering exemplary hands-on, minds-on, inquiry-based student lessons.

FY23 Program Highlights:

- » Doubled student capacity from a two to four classroom model.
- » Entire staff was “coined” by Chief of Space Operations, John W. Raymond, after he toured the program.
- » Received rave reviews from all participating parties.
- » Hired new team members to the STARBASE Patrick team.
- » Increased military presence and participation in STARBASE program delivery.
- » Provided teacher training.

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STARBASE PENSACOLA

PENSACOLA, FLORIDA



ESTABLISHED 2022

SERVICE COMPONENT: Navy

MILITARY LOCATION: Naval Air Station Pensacola

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Escambia County School District

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Naval Aviation Museum Foundation

DoD STARBASE Pensacola is on site at the Naval Air Station Pensacola, Florida. The program is located on the second deck in a "simulated aircraft carrier" called Ambition in the National Flight Academy. The site has two Carrier Air Groups (CAGs), comprising the Bulldogs and the Yellow Jackets. Each CAG has a Ready Room, where the cadets will receive their morning brief of their "assignment" of the day, then they proceed to the Joint Intelligence Center (JIC) or the main classroom where all of the hands-on, minds-on activities will be conducted.

On days when the computer-aided design curriculum is deployed, the cadets report to the Joint Operations Center (JOC) to complete the missions given to them once they are seated. The staff consists of six dedicated team members who help to make the program a success. The program serves the fifth graders of Escambia County Schools Florida during the basic DoD STARBASE program and plans to pilot a STARBASE Advanced program during FY24.

FY23 Program Highlights:

- » Served 17 Title I Escambia County Schools, 64 fifth-grade classes, and 1,431 cadets.
- » Staff volunteered to serve as judges for the University of West Florida Regional Science Fair for sixth to eighth graders and at STEM Nights at seven elementary schools.
- » Conducted a program that provided 30 hours of after-school time (AST) and Out of School Time (OST) to 35 fifth-grade students at the Pensacola Public Library.
- » Provided Teacher Orientation for each session coming to the base. The "commanders" (visiting teachers) were also given a packet complete with forms and expectations while at the academy, along with some STEM takebacks for their classes.
- » Held summer academies focused on military dependents ages 10-12. Activities included CO₂ cars and launching of rockets.
- » Staff volunteered with the National Naval Museum on Girl Scouts Aviation Day to provide an activity of making a "paper aircraft" and launching them from "the aircraft carrier flight deck" successfully.

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PEACH STATE STARBASE

MARIETTA, GEORGIA



ESTABLISHED 2001

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Clay National Guard Center

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Cobb County School District
Marietta City Schools
Private School & Homeschool Groups

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Peach State STARBASE Foundation, Inc.

Georgia's Peach State STARBASE serves approximately 1,500 fifth graders during more than 60 on-base classes annually. STARBASE Peach State provides a fast-paced, course of instruction spanning 25 contact hours. In addition, over 500 middle school students participate in 11 ongoing year-long STARBASE Advanced programs in three public middle schools.

Peach State STARBASE has graduated over 16,000 students since first opening its doors in 2001. The program works with public and private school teachers in the metro Atlanta area, providing both material support directly related to STARBASE programs, as well as consultation and logistical support of other STEM initiatives within the schools. Twice annually, Peach State STARBASE offers a two-day Aerial Robotics Teacher Institute to participating middle school program teachers, other STARBASE location instructors, and other partners in the education community on operating and maintaining the small aerial drones used in the middle school programs.

While at STARBASE, students participate in challenging activities related to aviation and STEM careers, building on their classroom instruction. They interact with military personnel and see direct applications of their academic studies in real world situations at the Clay National Guard Center and Dobbins Air Reserve Base.

FY23 Program Highlights:

- » Offered the second annual STARBASE Instructors Aerial Robotics Institute, a two-day, fast-paced ground and air school that covered the range from theories of aerodynamics, coding, and flying of small aerial robots.
- » Expanded the community outreach to more than 20 events throughout the year.
- » Set an all-time on-base attendance of 1,410 students for an operating year.
- » Hosted a hybrid private school and collective of homeschool groups.

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STARBASE ROBINS

WARNER ROBINS, GEORGIA



ESTABLISHED 1996

SERVICE COMPONENT: Air Force Reserve

MILITARY LOCATION: Warner Robins Air Force Base

CLASSROOMS AUTHORIZED: 4



SCHOOL DISTRICTS SERVED

Bibb County School District
Houston County School District
Cirrus Academy State School
Twiggs County Public Schools
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Museum of Aviation Foundation

In the heart of Middle Georgia, a beacon of inspiration known as STARBASE Robins has been nurturing young minds, empowering them to conquer the frontiers of science, technology, engineering, and mathematics (STEM) for the last 27 years. As the curtains fall on fiscal year 2023, STARBASE Robins reflects on a year of exploration, growth, and innovation. STARBASE Robins stands tall, showcasing a tapestry of accomplishments that have woven dreams into reality.

With a commitment to hands-on learning, STARBASE Robins launched a series of captivating workshops that transported students beyond the confines of textbooks. From coding to constructing model rockets that kissed the sky, students embarked on journeys of discovery that fired their imaginations and honed their problem-solving skills. Further, partnerships with local schools, businesses, and visionaries transformed the program into a community-driven movement. Shared resources and collective passion paved the way for students to connect their learning to real-world applications, fostering a deeper understanding of STEM's impact on daily life.

FY23 Program Highlights:

- » Was recertified as a Level III, high-performing location.
- » Partnered with several organizations to enhance programming. These partners included Ft. Valley State University, Critter Fixer, Georgia Tech Research Institute, Venture Lab, and Hancock County Library.
- » Conducted STEM Spark Saturday Workshops and 26 STARBASE Advanced STEM Clubs.
- » Welcomed Dr. Mary Landon, Spouse of Brigadier General Elizabeth Arledge, Air Force Sustainment Center, Mobilization Assistant to the Commander; Mrs. Natalie Hawkins, Spouse of Lieutenant General Stacey Hawkins, Air Force Sustainment Center, Commander; and Donna Schultz, Spouse of Chief Master Sergeant Robert Schultz, Air Force Sustainment Center, Command Chief on a visit to Robins Air Force Base to learn about educational programs that support military families.

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STARBASE SAVANNAH

SAVANNAH, GEORGIA



ESTABLISHED 2012

SERVICE COMPONENT: Army

MILITARY LOCATION: Hunter Army Airfield

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Candler County Public School System
Savannah Chatham County Public School System
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Savannah Foundation

STARBASE Savannah is located on Hunter Army Airfield and sponsored by the 3rd Infantry Division. STARBASE Savannah first opened its doors in 2012 and is proud to be the first STARBASE established on an Army installation. Since 2012, STARBASE Savannah has been serving local private schools and public schools of the Savannah Chatham County school district. During the past year, STARBASE Savannah has been rebuilding from the impact of COVID by re-establishing partnerships in the community and broadening the reach of their traditional program.

FY23 Program Highlights:

- » Re-established partnerships within the Savannah-Chatham community. COVID impacted STARBASE Savannah significantly, decreasing its number of participants and schools willing to partner. Within the last fiscal year, they have been able to re-establish old and establish new partnerships.
- » Supported Morale, Welfare and Recreation (MWR) from Fort Stewart and Hunter Army Airfield during their annual back to school events for the community.
- » Hosted Summer STEM camp for military dependents on Hunter Army Airfield.
- » Enhanced classrooms to ensure a stronger STEM centered learning environment through aesthetic updates.
- » Procured updated technology to fully implement program curriculum and technological requirements.
- » Renewed partnership with Savannah Chatham County Schools and anticipate a total of nearly 1,000 students attending the program during the 2023-2024 school year.

CONTACT INFORMATION

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STARBASE GUAM

BARRIGADA, GUAM



ESTABLISHED 2021

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Guam National Guard Readiness Center

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Guam Department of Education

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Naval Aviation Museum Foundation

Hosted by the Guam Army National Guard, STARBASE Guam is entering its third year of operation. Since their first cohort, they have served over 2,000 students who have received 25 hours of stimulating, inquiry-based curriculum and instruction in Science, Technology, Engineering, and Mathematics (STEM). STARBASE Guam has established and developed positive relationships with students, teachers, and administrators over the years, and continues the efforts to build and expand the local STEM community. To keep up with 21st-century demands, the mission of the program continues to focus on affording students with opportunities to make real-world connections in an integrated curricular setting, and developing adult relationships with their military and civilian partners to further explore the ever-changing and developing disciplines and careers in STEM.

FY23 Program Highlights:

- » Successfully earned Level 1 Certification in August 2023.
- » Despite challenges after being struck by Typhoon Mawar in May 2023, STARBASE Guam was able to conduct two weeks of supplemental activities with military dependents, power outages included.
- » Participated in World Meteorological Day in March 2023 with their National Oceanic and Atmospheric Administration and National Weather Service partners to celebrate STEM and provide information about STARBASE to over 1,000 attendees.
- » Planning their now annual STEM Day, happening again in FY24.

CONTACT INFORMATION

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STARBASE HAWAII

KEA'AU, HAWAII



ESTABLISHED 2008

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Kea'au Armory

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Hawaii Department of Education

STARBASE Hawaii brings dynamic STEM outreach to life on the windward side of Hawaii island by inspiring students with a balanced blend of interactive, hands-on, and classroom talk-story and lessons. The program's aim is to foster a spirit of inquiry, promote logical reasoning, foster critical thinking, and build collaboration skills for students to become future thinkers, problem solvers, innovators, and leaders in an increasingly technological future, as well as working to prevent the "brain drain" that has been plaguing Hawaii for a half century. Hawaii students must develop their STEM capabilities if Hawaii is to remain competitive in an increasingly technological world, and STARBASE stands ready to guide students into the frontiers of an inexorable march toward a future governed by technology, and to guide their island students to understand both the benefits and challenges of globalization and a knowledge-based economy.

STARBASE Hawaii serves a primary demographic that is almost entirely comprised of Title 1 schools and offers the opportunity to create passion about STEM to underserved communities, in order to develop the next generation of STEM leaders and innovators. In addition to their traditional demographic, STARBASE Hawaii has partnered up with Youth Challenge Academy Hilo and continues to offer both the traditional 25-hour curriculum and expanded robotics workshops.

FY23 Program Highlights:

- » Piloted an Advanced Program, working with Kea'au Elementary and Intermediate Schools, coaching Kea'au Intermediate VEX IQ Robotics Team and co-coaching Kea'au Elementary's VEX IQ Robotics Team.
- » Joined Kea'au Elementary and Intermediate VEX IQ Robotics teams as they qualified and competed at the VEX IQ State Championship for Hawaii.
- » Partnered with Hawaii Museum of Science and Technology to participate in a monthly community outreach program known as "Science Nights" hosted at various local elementary schools to bring hands-on and minds-on STEM activities to local students and families.
- » Partnered with University of California Santa Cruz STEM community outreach program called *Shadow the Scientists* which brings STEM engineers, programs, and educators to participate in STEM Career Talks and allows students to shadow active research projects and interact with STEM professionals.
- » Collaborated with Na Leo O Hawaii TV and was featured in their TV series *Island Science* showcasing STARBASE Hawaii and STEM education outreach.

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STARBASE IDAHO

BOISE, IDAHO



ESTABLISHED 2017

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Gowen Field Air National Guard Base

CLASSROOMS AUTHORIZED: 3



SCHOOL DISTRICTS SERVED

Basin School District
Boise School District
Caldwell School District
Kuna School District
Middleton School District

Nampa School District
Notus School District
Wilder School District
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Idaho Youth Challenge Academy Inc.

STARBASE Idaho is located on Gowen Field Air National Guard Base in Boise. The program is entering its sixth year of operations and continues to grow as word spreads about the innovative STEM program. STARBASE Idaho operates a three-classroom site and ran the year at capacity with a waitlist. Gowen Field personnel are always willing to help out and share what they love about their STEM careers with students. Depending on the time of year students visit, they are treated to a visit to the Blackhawk Hangar, Tank Training Facility, Civil Support Team training building, or Fire Station. STARBASE Idaho currently runs five Advanced STARBASE programs in two school districts and will be expanding to a third district in FY24. Program instructors worked diligently to create new camp themes for participants during summer programs. STARBASE Idaho looks forward to continuing to expand in all areas of the program to provide enrichment for students in the Treasure Valley and beyond.

FY23 Program Highlights:

- » Graduated its 10,000th student during the 2022-2023 school year.
- » Successfully completed two new advanced programs, increasing the total number of programs from three to five annually.
- » Advanced program Botball team received several awards at state competition for engineering and design.
- » Hosted 11 supplemental academies, four of which were specifically for children of National Guard members.
- » Advanced FIRST LEGO League Robotics team won the Core Values Award at Regionals for the second year in a row.
- » Brought STEM enrichment to Migrant Summer School Students in two districts.
- » Hosted 11 FIRST LEGO League teams for the Treasure Valley FIRST LEGO League Regional Tournament.

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STARBASE INDIANA-FORT WAYNE

FORT WAYNE, INDIANA



ESTABLISHED 2012
SERVICE COMPONENT: Air National Guard
MILITARY LOCATION: Fort Wayne Air National Guard Base
CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

- East Allen County Schools
- Fort Wayne Community Schools
- Huntington Community School Corporation
- Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Indiana, Inc.

STARBASE Indiana-Fort Wayne is located at the 122nd Fighter Wing, Air National Guard Base. The Fort Wayne team welcomed their first class on February 14, 2012. Due to an increased interest in the STARBASE program, they were able to open their second classroom in the fall of 2015. They have been proudly serving two classes concurrently ever since. Approximately, 66 different fifth-grade classes participate in the basic program each year.

The Fort Wayne STARBASE team also instructs sixth through eighth grade students during their after school Advanced program. Each program is tailored to the interests of the participating school and covers topics related to 3D printing and Computer-Aided Design software, life on Mars, and coding. In addition, the Fort Wayne team has been able to collaborate and partner with a variety of STEM centered organizations and universities throughout the Fort Wayne area to bring new and exciting opportunities to students while attending their summer programs and other outreach activities.

FY23 Program Highlights:

- » Had the unique opportunity to partner with a local Montessori school as one of their STEM outreach requirements, allowing us to bring hands-on STEM activities to preschool-aged students.
- » Collaborated with Indiana Tech to develop programs and instruct students attending the Advanced programs.
- » Exceeded the minimum classroom requirements during the 2022-2023 school year by hosting 66 classes, allowing the program to serve over 1,600 students.
- » Added two new schools to their schedule, bringing five new classes to the basic program.
- » Improved collaboration and communication with 122nd Fighter Wing military members and expanded STEM career presenters to include a wide variety of professions and interests from the community.

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STARBASE INDIANA-GARY

GARY, INDIANA



ESTABLISHED 2018

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Gary Indiana National Guard Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Gary Community School Corporation
 Lake Station Community Schools
 River Forest Community School Corporation
 School City East Chicago
 School City of Hammond
 School District 156
 School Town of Highland
 Private & Charter Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Indiana, Inc.

STARBASE Indiana-Gary was founded in 2018 at the Indiana National Guard Army, with support from the 113th Engineer Battalion. STARBASE Gary works hard to provide North Lake County with an expansive introduction to a STEM learning experience for the students in the county. Program staff are committed to supporting the excitement around STEM and the STEM education experience for public, charter, private, and homeschooled learners and to giving students a glimpse into the array of professions related to STEM. STARBASE Gary has shifted its focus to providing full wraparound STEM services to all of their school partners, including the fifth grade basic experience, the opportunity for Advanced after-school programs, supplemental opportunities, providing STEM experiences to district summer school programs, supporting STEM Family Nights, and becoming school volunteers to provide an ongoing STARBASE presence in their local schools.

FY23 Program Highlights:

- » Hosted 14 new schools during their basic programming.
- » Served approximately 1,400 students.
- » Conducted three Advanced after-school programs.
- » Piloted an All Girl Advanced STEM Club.
- » Partnered with a medical doctor/STEM curriculum writer to do a five-day summer dissection lab for fourth to eighth grade students.
- » Provided summer STEM Learning experience for a middle school's summer school program.

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STARBASE INDIANA-INDIANAPOLIS

INDIANAPOLIS, INDIANA



ESTABLISHED 2015 **MILITARY LOCATION:** Stout Field
SERVICE COMPONENT: Army National Guard **CLASSROOMS AUTHORIZED:** 2



SCHOOL DISTRICTS SERVED

- Indiana Math & Science Academy - North
- MSD Decatur Township
- Indianapolis Public Schools
- Franklin Township Community School Corporation
- Private School & Homeschool Groups

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Indiana, Inc.

DoD STARBASE Indianapolis, located at the Indiana National Guard Joint Force Headquarters - Stout Field, hosted its first class in February 2015. Since opening their doors, STARBASE Indianapolis has established relationships with school districts from the Greater Indianapolis area and surrounding townships, offering the STARBASE basic program to local fifth grade classes as well as providing after-school STARBASE Advanced programming for middle school students. In addition, STARBASE Indianapolis provides a range of high-quality programming to homeschool groups, military youth programs, and the wider community during the school year and school breaks. The STARBASE Indianapolis team is actively engaged within the community, working with partners like Rolls-Royce, Celebrate Science, IPS Innovation Fair, Decatur Township STEM Fest, Erie Insurance, and the Pacers Foundation to provide a wide variety of exciting STEM outreach activities and programs.

FY23 Program Highlights:

- » Officially became a two-classroom academy, increasing the number of fifth-grade classes seen on site annually.
- » Added six new schools to the basic program operating calendar.
- » Hosted eight summer supplemental programs serving the local communities in central Indiana and reaching 185 students.
- » Participated in six community outreach events for over 6,000 local participants.
- » Developed a new community partnership with Erie Insurance.

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STARBASE INDIANA- SOUTH BEND

SOUTH BEND, INDIANA



ESTABLISHED 2016

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: South Bend Army National Guard Armory

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

New Prairie United School Corporation
School City of Mishawaka
South Bend Community School Corporation
Union North Union
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Indiana, Inc.

STARBASE Indiana-South Bend opened its doors in 2016 and is located inside of the South Bend National Guard Armory. The program's immediate impact led to quickly opening a second classroom, and the program continues to expand with year-round educational opportunities offered through supplemental programming and community outreach. The program's focus and goal continues to be to exceed last year's impact for the Basic and Advanced programming, community engagements, and Summer STEM Academies.

Over the last year, STARBASE South Bend successfully partnered with several community agencies to offer immersive STEM Academies during school breaks. They offered a highly-successful all girls Summer STEM Academy and two co-ed traditional academies that were housed 100% at their military installation. Their fourth Summer STEM Academy was an Advanced Academy with a career focus in medical/health sciences and biology by leveraging relationships with Indiana University-South Bend, the Medical Education Foundation, the University of Notre Dame Linked Experimental Ecosystem Facility, and the Elkhart South Bend Aquatic Biology Program for two days of career exploration and STEAM programming where educators coordinated, collaborated, and piloted curriculum that gave full-day hands-on learning to students on a college campus and a Environmental Outdoor Research Lab.

FY23 Program Highlights:

- » Served nearly 1,200 students through the basic and supplemental STEM programs, and successfully implemented a STARBASE Advanced afterschool program, impacting 16 middle school students.
- » Hosted and participated in five community outreach events with a STEM impact on 100+ local participants.
- » Developed new summer program initiatives providing new partnerships and STEM curriculum for the South Bend community, industries, colleges, and universities.

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STARBASE KANSAS CITY

KANSAS CITY, KANSAS



ESTABLISHED 1999

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Lenexa Armory

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

- Baldwin City Unified School District
- Basehor-Linwood Unified School District
- Desoto Unified School District
- Easton Unified School District
- Jefferson County North Unified School District
- Kansas City, Kansas Unified School District
- Shawnee Mission Unified School District
- Turner Unified School District
- Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Kansas STARBASE, Inc.

Since 1999, STARBASE Kansas City has been fully supported by the Kansas National Guard. Hosted by the 1077th Ground Ambulance Company and Medical Detachment, STARBASE Kansas City served nearly 3,800 students this year through their Basic program, Advanced programs, and outreach opportunities. STARBASE Kansas City operated at capacity for student numbers with their basic program and had many additional opportunities to work within the greater metropolitan area presenting STEM to various community partnerships, non-profit organizations, and schools. The focus of STARBASE Kansas City continues to be to increase student knowledge, inquiry-based skills, and interests in the four disciplines of STEM through hands-on investigations. Moving forward, the program will continue to offer a premier, student-centric environment, where students are given many opportunities to develop their critical thinking skills through inquiry and exploration to solve real world problems.

FY23 Program Highlights:

- » Expanded into an additional four school districts, as demand for the program increased.
- » Hosted various site visits from different stakeholder groups, including a State Representative liaison along with Senator Roger Marshall and OASD M&RA.
- » Conducted two Advanced programs, both with an engineering focus, including a joint, inter-state Advanced program with JROTC cadets.
- » Increased Outreach opportunities and worked with over 2,000 children providing STEM activities.
- » Conducted four summer academies in collaboration with Kansas City professional STEM mentors.

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STARBASE MANHATTAN

MANHATTAN, KANSAS



ESTABLISHED 2012

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Kansas National Guard Armory

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Blue Valley Unified School District
Chapman Unified School District
Clay Center Unified School District
Geary County Unified School District
Manhattan/Ogden Unified School District
Morris County Unified School District

Prairie Hills Unified School District
Rural Vista Unified School District
Vermillion Unified School District
Wamego Unified School District
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Kansas STARBASE, Inc.

DoD STARBASE Manhattan has proudly served as a Special Program of the Kansas Adjutant General's department since its establishment in 2012. Hosted by the Command of the 130th Field Artillery Brigade of the Kansas National Guard, the signature hands-on, minds-on DoD Youth Outreach Program serves Manhattan, Junction City, Fort Riley, and surrounding rural communities. STARBASE Manhattan continuously collaborates with volunteer speakers and tour guides from the 130th, Fort Riley, and Kansas State University to provide an amazing opportunity for students to make real-world connections to STEM topics and careers. In addition to the exemplary 25-hour STARBASE Basic program, STARBASE Manhattan provides the STARBASE Advanced program at two local middle schools. STARBASE Manhattan provides community outreach through facilitating STEM activities at community events and STEM nights at local schools.

FY23 Program Highlights:

- » Established two new STARBASE Advanced Clubs at area middle schools focused on advanced coding of the LEGO Spike Prime Robot, computer-aided design (CAD), and 3D printing. In cooperation with Kansas State University's Innovation Lab (maker space), students investigated the types of CAD programs and 3D printers available for college students and community guests.
- » Established relationships with new Title 1 schools on Fort Riley, increasing program opportunities to that area from two schools to 10, while also expanding outreach and supplemental programs to include more science-themed events at local schools, specifically targeting schools from the program's waiting list.
- » Collaborated with the other four Kansas sites to provide a two-day professional development workshop for the 29 STARBASE employees.
- » Served over 2,000 students through various STARBASE Basic, Advanced, and supplemental programs and community outreach events.
- » Collaborated with sites from around the country to support the summer STARBASE Advanced program with JROTC.

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STARBASE SALINA

SALINA, KANSAS



ESTABLISHED 1998 **MILITARY LOCATION: Great Plains Joint Training Center**
SERVICE COMPONENT: Army National Guard **CLASSROOMS AUTHORIZED: 2**



SCHOOL DISTRICTS SERVED

- | | |
|-------------------------------------|---|
| Abilene Public Schools | Marion-Florence Schools |
| Canton-Galva Schools | McPherson Public Schools |
| Central Plains | Moundridge Unified School District |
| Chapman Unified School District | North Ottawa County Schools |
| Clifton-Clyde Schools | Rural Vista Schools |
| Concordia Public Schools | Salina Public Schools |
| Ell-Saline Unified School District | Smoky Valley Public Schools |
| Ellsworth-Kanopolis School District | Solomon Unified School District |
| Goessel Unified School District | Southeast of Saline Unified School District |
| Hillsboro Unified School District | Southern Cloud Schools |
| Inman Public Schools | Sylvan Grove Unified School District |
| Lincoln Unified Schools | Twin Valley Schools |
| Little River-Windom Schools | Private Schools |

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Kansas STARBASE, Inc.

Since 1998, DoD STARBASE Salina has been providing the STARBASE Program to area fifth graders within a 60 mile radius of Salina. Hosted by the Army National Guard Training Center and supported by the 235th Aviation Center, STARBASE students are invited to participate in the exemplary 25 hours of STARBASE curriculum with a hands-on, minds-on approach. Every student gets the opportunity to meet a Blackhawk pilot or crew chief and experience a Blackhawk helicopter tour.

Additionally, STARBASE Salina partners with Kansas State University which provides students with STEM career opportunities right in their own backyard. STARBASE Salina has served well over 2,000 students this year in a variety of ways. Beyond operating a successful basic school year program, the program also conducted two local middle schools with advanced programs and after school clubs. Since 2019, STARBASE Salina has collaborated and sent staff members to the JROTC initiative in Virginia. Additionally, four different summer camps are hosted at STARBASE Salina, as well as an outreach summer camp in Hays, Kansas.

FY23 Program Highlights:

- » Hosted various site visits from stakeholders like Senator Jerry Moran and representatives from OASD M&RA to highlight program success and address future growth for the state of Kansas.
- » Held two successful Advanced robotics clubs that competed at Fort Hays State University, and completed five successful outreach programs.
- » Provided teachers with the opportunity for continuing education through their partnership with Friends University.

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STARBASE TOPEKA

TOPEKA, KANSAS



ESTABLISHED 1994

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Forbes Field

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Auburn-Washburn Public Schools	Santa Fe Trail Public Schools
Burlingame Public Schools	Seaman Public Schools
Holton Public Schools	Shawnee Heights Public Schools
Jackson Heights Public Schools	Topeka Public Schools
Jefferson West Public Schools	Valley Falls Public Schools
Kaw Valley Public Schools	Wabaunsee Public Schools
Mission Valley Public Schools	West Franklin Public Schools
Osage City Public Schools	Private Schools
Royal Valley Public Schools	

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Kansas STARBASE, Inc.

STARBASE Topeka is now entering its 30th year of operation located on Forbes Field at the Armed Forces Reserve Center and hosted by the Kansas Army National Guard 69th Troop Command. From its inception, STARBASE Topeka has consistently exceeded the program's capacity for service. During the past year, STARBASE Topeka had the privilege to motivate and inspire over 2,700 students through the Basic and Advanced STARBASE programs, as well as outreach opportunities for community members. Through the STARBASE Advanced after-school program, middle school students were able to explore robotics, rocketry, and the engineering design process. In the STARBASE Advanced program with JROTC cadets, the program was able to collaborate with several other STARBASE locations to teach participants about the engineering design process using robotics. Moving forward, STARBASE Topeka will continue to seek out ways to educate, share, and build excitement around STEM for the youth of Kansas.

FY23 Program Highlights:

- » Hosted site visit from OASD M&RA to highlight program success and address future growth for the state of Kansas.
- » Participated in a joint, inter-state STARBASE Advanced program with JROTC cadets.
- » Conducted six STARBASE Advanced programs.
- » Served over 2,700 students through the various program offerings and outreach events.
- » Collaborated with Friends University to offer summer STEM workshops to area teachers.

CONTACT INFORMATION

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BAYOU STATE STARBASE

BATON ROUGE, LOUISIANA



ESTABLISHED 2015

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: North Iberville Parish High School

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

East Baton Rouge Parish
 Iberville Parish
 Point Coupee Parish
 West Baton Rouge Parish
 Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Louisiana National Guard Foundation

Bayou State STARBASE is uniquely located in the North Iberville High School Building in Rosedale, Louisiana. It is sponsored and supported by the Gillis Long Louisiana Army National Guard, as well as the Iberville Parish School Board, who provides their facility. Bayou State STARBASE conducts at least 30 academies each year for students in the Greater Baton Rouge Area. This industrial area is rich with STEM professionals who volunteer their time at Bayou State STARBASE to provide insight to participants on the potential STEM careers in the area. Bayou State STARBASE is continuing the Advanced STARBASE programs which began in 2021 and are conducted in partnering schools, bringing robotics and drone experiences to local sixth graders.

FY23 Program Highlights:

- » Completed 30 academies in which nearly 700 students completed the 25 hours of hands-on, minds-on STEM curriculum.
- » Completed three Advanced STARBASE programs.
- » Hosted three summer robotics camps with a total of 45 students attending.
- » Completed additional supplemental enrichment program with 33 students.
- » Conducted five outreach events, reaching nearly 240 local community members.

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STARBASE JACKSON BARRACKS

NEW ORLEANS, LOUISIANA



ESTABLISHED 1999

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Jackson Barracks

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Jefferson Parish
Orleans Parish
St. Bernard Parish
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Louisiana National Guard Foundation

STARBASE Jackson Barracks reopened in 2012 after being relocated to Pineville as Pelican STARBASE in the wake of Hurricane Katrina. Since the reopening, they have served nearly 10,000 students from New Orleans and surrounding parishes. In order to meet the demands of the area, STARBASE Jackson Barracks expanded to a two-classroom site during the 2018-2019 school year. The Jackson Barracks program extended STEM opportunities to sixth through eighth grade students with the launch of their Advanced program during the 2016-2017 school year. The Advanced STARBASE program has grown to serve five schools within the past few years and has focused on robotics, CO₂ dragsters, and rocketry. This year the Advanced program will lead a robotics team at the FIRST LEGO League competition. Additionally, STARBASE Jackson Barracks offer summer programs to the surrounding community and military dependents. The staff at STARBASE Jackson Barracks are ready and eager to kick off the next school year with a packed schedule and waiting list!

FY23 Program Highlights:

- » Successfully recruited new schools for participation in the basic program schedule to increase exposure in Orleans & Jefferson parishes.
- » Recruited two new Advanced program school participants.
- » Expanded the program's media exposure on both the Louisiana National Guard Facebook site and the New Orleans Times Picayune (NOLA Blog), featuring program highlights.
- » Represented National Guard STARBASE programs at the Louisiana Teacher's Summit by creating and leading hands-on opportunities for attending teachers and school administrators.
- » Participated in outreach opportunities for St. Bernard Parish district during their Fitness Meet & Special Olympics.

CONTACT INFORMATION

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STARBASE FORT JOHNSON

LEESVILLE, LOUISIANA



ANTICIPATED EARLY 2024

SERVICE COMPONENT: Army

MILITARY LOCATION: Fort Johnson

CLASSROOMS AUTHORIZED: 1



ANTICIPATED SCHOOL DISTRICTS SERVED

Vernon Parish School District

Beauregard Parish School District

STARBASE Fort Johnson will be the fifth STARBASE program in the state of Louisiana, which is hosted at the Joint Readiness Training Center, United States Army Garrison Fort Johnson, located in Vernon Parish. The program has been provided with a 10,000 square foot facility that has unimaginable potential. All the progress that is underway has started to transform the building into an exciting, student-friendly environment, with the hope of sparking curiosity, imagination, and inquisitiveness in all of the children the program will be able to serve. The program is eagerly awaiting installation and setup of classroom active boards, furniture, 3D printers, and decor.

Program staff is thrilled to share the challenging STARBASE curriculum that will provide authentic instruction to local fifth graders. Through this exposure and with the presence of positive military and civilian role models, students will learn firsthand how science, technology, engineering, and mathematics are utilized in the real world, allowing them to make connections to possible careers for future aspirations. STARBASE Fort Johnson wants every child who enters its doors to have a meaningful, hands-on learning experience that will create lasting, indelible memories and ignite a passion for all things related to STEM. STARBASE Fort Johnson is anticipating hosting its first group of fifth grade students in the spring of 2024!!

FY23 Program Highlights:

- » Scheduled STEM nights and local events to garner partners and support from the community.
- » Actively reached out to local school districts to encourage participation in the program.
- » Partnered with Vernon Parish School district to provide in-house STEM education support until the facility is ready to host students on the installation.
- » Full implementation of required supplemental programming anticipated in the summer of 2024.

CONTACT INFORMATION

7600 Utah Avenue #744, Fort Johnson, LA 71459

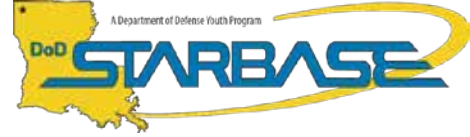
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STARBASE LOUISIANA

BOSSIER CITY, LOUISIANA



ESTABLISHED 1999

SERVICE COMPONENT: Air Force Reserve

MILITARY LOCATION: Barksdale Air Force Base

CLASSROOMS AUTHORIZED: 3



SCHOOL DISTRICTS SERVED

Bossier Parish Schools
Caddo Parish Schools
Red River Schools
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Louisiana Inc.

DoD STARBASE Louisiana, sponsored by the 307th Bomb Wing on Barksdale Air Force Base, has delivered exciting and meaningful STEM programming to over 37,000 students in northwest Louisiana since 1999. Their mission is to inspire students and ignite a passion for learning through collaborative STEM experiences to empower the innovators of tomorrow. The three-classroom program brings fifth-grade classes to STARBASE to receive 25 hours of exciting, real world STEM missions designed to expose them to science, technology, engineering, and mathematics careers.

STARBASE Louisiana also has the largest STARBASE Advanced program in the nation, bringing challenging semester-long or year-long engineering projects to sixth through twelfth grade students in 36 separate programs. Their middle school students design, build, and race CO₂ cars, investigate alternative energy with wind turbine design, and code drones, robotic arms, and Tetrax robots. Their high school students participate in the American Rocketry Challenge (ARC), the world's largest rocketry competition. In the past three years, they have had six teams qualify for the national level of competition in Washington D.C. Most participating seniors have gone on to major in STEM fields at various universities. DoD STARBASE Louisiana is making a difference in the futures of thousands of students every year in northwest Louisiana!

FY23 Program Highlights:

- » Awarded DoD STEM Advocate of the Quarter for Quarter 1 of FY23.
- » Organized and facilitated the STARBASE STEM Zone, the largest community STEM event in north Louisiana.
- » Successfully managed 36 STARBASE Advanced Academies.
- » Provided 5th grade programming for two new school districts, one from a neighboring state.
- » Had a STARBASE Advanced High School team qualify for ARC nationals for the third consecutive year.
- » Hosted a rocketry training workshop for DoD STARBASE Directors and Instructors.
- » Provided services to over 2,150 students from 30+ schools.

CONTACT INFORMATION

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PELICAN STATE STARBASE

PINEVILLE, LOUISIANA



ESTABLISHED 2006

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: LANG Training Center Pineville

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Grant Parish
Rapides Parish
University View Academy
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Louisiana National Guard Foundation

Pelican State STARBASE opened for operations in the New Orleans Area (NOLA) on Jackson Barracks during the 1999-2000 school year. After serving the greater NOLA area from September 1999 to August 2005 and providing STEM Educational lessons for over 4,500 students, a catastrophic storm, Hurricane Katrina, thwarted program operations. When Rapides Parish learned that many of the staff had been relocated to the area, Brigadier General Gary Jones, then Superintendent of the Rapides Parish School Board, initiated communication with the Louisiana Military Department to consider moving STARBASE Operations to Training Center Pineville, formerly Camp Beauregard.

After securing a location and making the necessary arrangements, Pelican State STARBASE reopened its doors in Pineville, Louisiana, in May of 2006. Pelican State STARBASE continued to operate the STARBASE program with a single classroom from April 2006 through the 2022-2023 school year and served nearly 13,000 students in the Central Louisiana Area. Pelican State STARBASE proudly boasts of 17,483 successful program completions since its inception, and the program is eagerly looking forward to a promising future supporting STEM education for the next generation.

FY23 Program Highlights:

- » Supported by the Louisiana National Guard (LANG) with a new facility and authorized by DoD STARBASE to expand to dual classroom operations, which allowed for the enrollment of 57% more students during 2022-2023.
- » Served 62% more schools and organizations during the 2022-2023 school year than in previous years.
- » Reported results of pre- and post-evaluations with over 58% more participants improve by answering 20% or more questions correctly after program participation during the 2022-2023 school year.
- » Reengaged the STARBASE Advanced mission with a new after school program for 21 of Northwood School's sixth graders in Lena, LA.

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STARBASE HANSCOM

BEDFORD, MASSACHUSETTS



ESTABLISHED 2012
SERVICE COMPONENT: Air Force

MILITARY LOCATION: Hanscom Air Force Base
CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

- | | |
|---------------------------|------------------------|
| Billerica Public Schools | Lowell Public Schools |
| Boston Public Schools | Medford Public Schools |
| Leominster Public Schools | Peabody Public Schools |
| Lincoln Public Schools | Homeschool Groups |

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Hope Through Education, Inc.

The STARBASE Academy at Hanscom Air Force Base stands as a dedicated and innovative STEM education partner serving students, educators, and school districts across Massachusetts. By nurturing collegial bonds and fostering collaborative initiatives, the STARBASE Hanscom team unites individuals from various walks of life, including military personnel, STEM practitioners, educators, parents, aspiring teachers, and seasoned instructors. Notably this year, the culmination of a three-year project funded by the National Science Foundation in partnership with Bridgewater State University (BSU) stands as a proud achievement. This collaborative venture directly immersed Bridgewater’s aspiring teachers into the STARBASE experience by contributing to BSU educational courses and providing an immersive STEM/ELL internship. They look forward to future collaborations and partnerships in the coming years.

FY23 Program Highlights:

- » Honored to welcome several stakeholders to observe their program in operation: Lt. Gen. Shaun Q. Morris, Commander of the Air Force Life Cycle Management Center, Wright-Patterson Air Force Base; Mrs. Dede Richardson, spouse of General Duke C, Richardson; Captain Kevin G. “Flex” Bess, of the US Space Force, and young airmen from Hanscom AFB who acted both as participants in team-building STEM activities and then as speakers to their students.
- » Thrilled and honored to have the entire graduating class of the Hanscom AFB Airman Leadership School visit the site and inspire participating STARBASE students from Medford, MA.
- » Concluded a robotics STARBASE Advanced Club at the Yawkey Boys and Girls Club in Boston with the expert assistance and professional leadership of the Yawkey Education Director.

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STARBASE ALPENA

ALPENA, MICHIGAN



ESTABLISHED 2012

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Alpena Combat Readiness Training Center

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Alcona Community Schools
Alpena Public Schools
Atlanta Community Schools
Fairview Area School District

Hillman Community Schools
Posen Consolidated School District
Rogers City Area Schools
Private Schools & Homeschool Groups

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE, Inc.

STARBASE Alpena is located in scenic northern Michigan at the Alpena Combat Readiness and Training Center (CRTC). The program began in April 2013 and is host to every fifth-grade student in a 50-mile radius, with some students traveling as far as 80 miles to attend classes. Many schools travel up to 45 minutes each way to reach STARBASE Alpena and return year after year, demonstrating the emphasis on delivering an inspiring and educational experience in science, technology, engineering, art/design, and mathematics. These hands-on, minds-on lessons are exciting, standards-based opportunities for students, and with the support of the men and women at Alpena's CRTC, students gain insight into careers such as civil engineering, fire and rescue, medical training, and air traffic control.

FY23 Program Highlights:

- » Secured an expansion into the rest of our current building, doubling our footprint.
- » Certified by program evaluators as Level II-Compliant, as well as compliant with their Resource Management visit.
- » Facilitated opportunities for STARBASE Advanced students to successfully build and launch a full-scale trebuchet in their engineering academy—launching a dozen small watermelons, a cantaloupe, a pineapple, a coconut, a dodgeball, and a bowling ball that is much more buoyant in a tank of water.
- » Program director showcased inquiry-based learning, a prominent practice at STARBASE Alpena, during the national STARBASE Director's Workshop.
- » Held our 10th anniversary open house for the people working on the base, which was a great success and will become an annual event.

CONTACT INFORMATION

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STARBASE BATTLE CREEK

BATTLE CREEK, MICHIGAN



ESTABLISHED 2006
SERVICE COMPONENT: Air National Guard
MILITARY LOCATION: Battle Creek Air National Guard Base
CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

- | | |
|-------------------------------------|----------------------------|
| Battle Creek Public Schools | Lakeview School District |
| Bellevue Community Schools | Lawton Community Schools |
| Colon Community Schools | Maple Valley Schools |
| Delton Kellogg Schools | Mar Lee Schools |
| Galesburg-Augusta Community Schools | Pennfield Schools |
| Hastings Area Schools | Thornapple Kellogg Schools |
| Hopkins Public Schools | Private Schools |

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE, Inc.

STARBASE Battle Creek is located on the Air National Guard Base in Battle Creek, MI. The program began with one classroom as a pilot in January 2006. By fall of 2007, it grew to two classrooms. Currently, the facility fills those two classrooms every year with a waiting list on stand by. Program participants engage in various activities that highlight science, technology, engineering, and mathematics (STEM) fields through hands-on, minds-on, experiential learning opportunities. Additionally, every student gets a chance to climb into a replica of a spacesuit for a souvenir photo. They also visit partners in the marketplace, including Western Michigan College of Aviation as well as Duncan Aviation. Along with hosting classrooms on base during the school year, STARBASE Battle Creek conducts an after-school STARBASE Advanced program at a partnering middle school classroom.

January 2024 marks 18 years for STARBASE Battle Creek. It has become a sought-after STEM destination in southwest Michigan for parents, teachers, schools, and community organizations.

FY23 Program Highlights:

- » Exceeded both basic classroom and outreach requirements during the 2022-2023 school year and reinstated STARBASE 2.0 (Advanced) program.
- » Increased collaboration with Air National Guard Base by implementing a base-wide haunted house, as well as supporting family day and super drills with STEM activities.
- » Created and/or maintained marketplace relationships with Sunlight Gardens, Battle Creek Executive Airport, Western Michigan College of Aviation, Duncan Aviation, and the Kalamazoo Regional Education Services Agency.
- » Mentored and received placement of four college students attending Kellogg Community College and two high school students attending the Calhoun Area Career Center.

CONTACT INFORMATION

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STARBASE ONE

MOUNT CLEMENS, MICHIGAN



ESTABLISHED 1993

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Selfridge Air National Guard Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Anchor Bay School District	New Haven Community Schools
Armada Area Schools	Richmond Community Schools
Detroit Public Schools Community District	River Rouge School District
Ecorse Public Schools	South Lake School District
L'Anse Creuse Public Schools	Private & Charter Schools
Lamphere Schools	

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE, Inc.

STARBASE One has the distinction of being the first STARBASE. Beginning in 1991 as Project STARS under a W.K. Kellogg grant and with the support of the 127th Wing at Selfridge Air National Guard Base near Detroit, Michigan, the program transitioned to Department of Defense funding in 1993, launching STARBASE across the United States.

From its humble beginnings in a WWII-era barrack slated for demolition, STARBASE One now offers a 17,000-square-foot facility with an immersive educational playground, including a full-scale space shuttle nose simulator and a simulated Mars surface for robotics challenges. For over 32 years, STARBASE One has remained a proud pillar and leader of STEM education in the Detroit tri-county area, offering academies to schools, advanced summer academies for repeat attendees, and after-school STARBASE Advanced clubs to middle school students.

FY23 Program Highlights:

- » Exceeded the number of classroom requirements for the school year, hosting 64 classroom cohorts, and offered two weeks of Advanced academies, exploring chemistry concepts, for prior Basic academy attendees.
- » Provided an advanced, three-day engineering academy for girls who previously attended our Basic and Advanced academies.
- » Partnered with Macomb Intermediate School District and Little Inventors to help bring an elementary student's engineering prototype (a mermaid-themed wheelchair) to life and with Macomb Intermediate School District and Square One Education Network for their underwater innovative vehicle design challenge.
- » Boasted an instructional team with over 45 combined years of STARBASE experience.

CONTACT INFORMATION

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STARBASE MINNESOTA-DULUTH

DULUTH, MINNESOTA



ESTABLISHED 2017 **MILITARY LOCATION: Duluth Air National Guard Base**
SERVICE COMPONENT: Air National Guard **CLASSROOMS AUTHORIZED: 4**



SCHOOL DISTRICTS SERVED

- | | |
|-----------------------------------|---|
| Barnum Public Schools | Hinckley-Finlayson Public School District |
| Carlton Public Schools | International Falls School District |
| Chisholm Public Schools | Mesabi East School District |
| Cloquet Public Schools | Moose Lake School District |
| Duluth Edison Charter Schools | Mountain Iron Buhl Public School District |
| Duluth Public Schools | North Shore Community School District |
| Esko Public School District | Proctor Public School District |
| Grand Rapids School District | Rock Ridge Public Schools |
| Hermantown Public School District | St. Louis County School District |
| Hibbing Public School District | Private Schools |

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Minnesota, Inc.

STARBASE Minnesota-Duluth opened in 2017. Since then, the program has expanded to four classrooms and currently serves over 3,000 students annually, between the core school-year curriculum, STARBASE Explorers Summer camp, and the STARBASE Advanced program. STARBASE Minnesota-Duluth was founded with a mission to inspire and educate youth in science, technology, engineering, and mathematics. Visiting students are representative of diverse backgrounds, and many live in rural areas where access to STEM education is scarce. The program partners with local industry and higher academia to provide opportunities for students to engage with STEM professionals, in order to create pathways and partnerships that allow excitement for STEM to thrive.

FY23 Program Highlights:

- » Conducted their first Advanced program at North Star Academy in partnership with the University of Minnesota-Duluth Outreach Department.
- » Released six in-house-developed, STEM career videos featuring STEM professionals from communities in Northeast Minnesota where their students live and go to school.
- » STARBASE staff participated in a variety of outreach events, including the Itasca County Water Summit, the St. Louis County STEAM Festival, and the Duluth Air Show.
- » Partnered with Cirrus Aircraft and the National Aviation Hall of Fame to distribute supplemental STEM curriculum on the topic of aviation to over 700 second- and third-grade students in the Duluth-area community.
- » Recognized by APEX (an economic and business development organization in NE MN) as a future workforce contributor in the region for the STEM industry.

CONTACT INFORMATION

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STARBASE MINNESOTA- ST. PAUL

ST. PAUL, MINNESOTA



ESTABLISHED 1993

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Minneapolis-St. Paul Joint Air Reserve Station

CLASSROOMS AUTHORIZED: 3



SCHOOL DISTRICTS SERVED

Anoka-Hennepin Public School Dist.
Cannon Falls Public School District
College Preparatory Elementary
Columbia Heights Public School Dist
Community Of Peace Academy
Cyber Village Academy
Eden Prairie Public School District
Hopkins Public School District
Minneapolis Public School District

North St. Paul-Maplewood Oakdale
Osseo Public School District
Randolph Public School District
Sojourner Truth Academy
South Washington County Schools
St. Paul Public School District
White Bear Lake School District
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Minnesota, Inc.

Since 1993, STARBASE Minnesota-St. Paul has educated and inspired over 85,000 Twin Cities youth in science, technology, engineering, and mathematics (STEM). Additional supplementary programming and resources puts STEM in the hands of another 35,000 fifth graders and their teachers across the state of Minnesota. Located at the 133rd Airlift Wing, the program is provided with state-of-the-art facilities, access to an exciting, immersive environment with advanced technologies, and over 300 military and corporate volunteers. In addition to the military, STARBASE Minnesota-St. Paul partners with local STEM corporations with a global reach, universities, government, and other community organizations in the advancement of STEM. As a recipient of the Minnesota High Tech Association's Tekne Award for Community Impact in 2018, STARBASE Minnesota-St. Paul has a strong track record of engaging the community in its mission and contributing to a STEM-skilled workforce, robust economy, and stronger communities.

FY23 Program Highlights:

- » Served 16 school districts and 48 schools in five-day programs, and expanded their supplementary program of STEM kits and accompanying website to 35,000 students and their teachers in 428 schools across Minnesota.
- » Increased military volunteers involved in the program to 80 members, involving all units of the wing, and expanded corporate partnerships with a record 176 participants involved in the STARBASE program, including STEM Industry leaders and scientists/engineers participating in eight STEM at Work events this year.
- » Developed 16 new STEM career videos showcasing the careers and work of local STEM industry professionals, accessed by thousands of students across Minnesota and beyond.

CONTACT INFORMATION

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STARBASE COLUMBUS

COLUMBUS, MISSISSIPPI



ANTICIPATED 2024

SERVICE COMPONENT: Air Force

MILITARY LOCATION: Columbus Air Force Base

CLASSROOMS AUTHORIZED: 1



ANTICIPATED SCHOOL DISTRICTS SERVED

Lowndes County School District
Columbus Municipal School District

As one of Mississippi's newest STARBASE programs, STARBASE Columbus will be housed at Columbus Air Force Base (AFB). AFB has been an integral part of the community for over 75 years, and continues to forge strong ties with the surrounding communities. STARBASE Columbus has a strong desire to develop a robust STEM program available to every fifth-grade classroom in the Lowndes County communities. Lowndes County, located on the eastern border of the state, has a population of just over 81,000 residents, but still maintains the hometown hospitality the south is known for. STARBASE Columbus plans to further support the community through various outreach efforts in STEM engagement at the local level.

The STARBASE program will utilize over 6,200 square feet of space, which includes one large classroom and student lunch area. Participants will maximize their learning potential through DoD STARBASE curriculum and hands-on activities which reinforce and build upon the local standards and objectives taught at their schools.

AFB is a technical training installation, and with mission permitting, Airmen and base personnel will be invited to support the program on a volunteer basis. Local educators will be able to rotate through the program for maximum benefit to the district, enhancing their current science, technology, engineering, and mathematics (STEM) offerings. DoD STARBASE Columbus is imperative to address education disparity in the local area, by increasing access and influence for students to develop their STEM knowledge through critical thinking and problem solving skills.

CONTACT INFORMATION

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STARBASE MISSISSIPPI

JACKSON, MISSISSIPPI

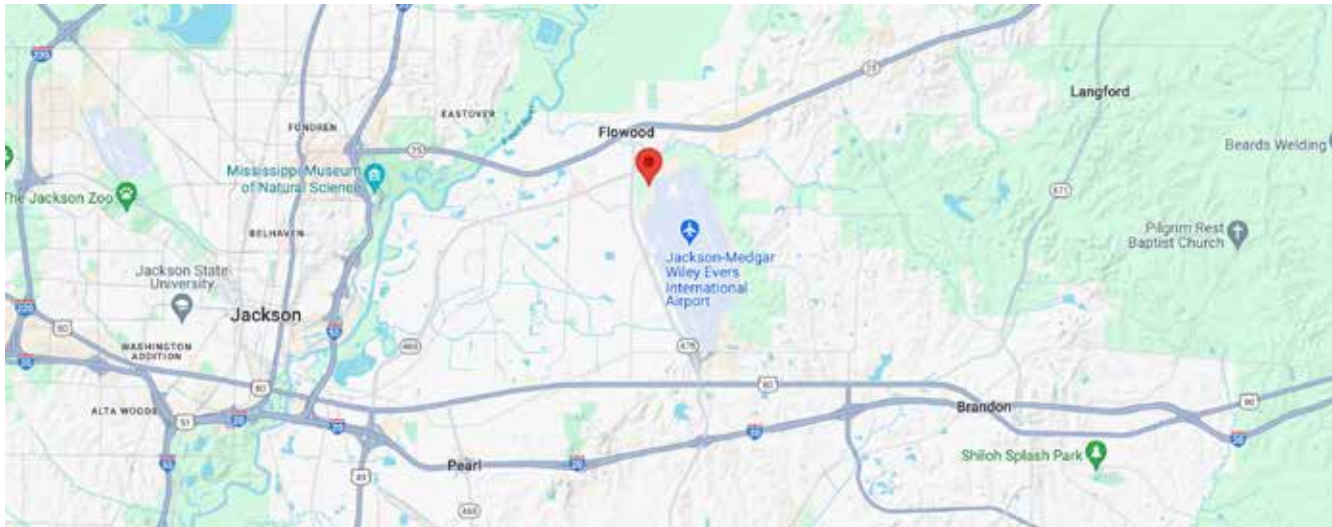


ANTICIPATED 2024

MILITARY LOCATION: Allen C. Thompson Field

SERVICE COMPONENT: Air National Guard

CLASSROOMS AUTHORIZED: 2



ANTICIPATED SCHOOL DISTRICTS SERVED

Rankin County School District
 Hinds County School District
 Jackson Public Schools
 Clinton Public Schools

STARBASE Mississippi is one of two brand-new DoD STARBASE programs in the state. STARBASE Mississippi objectives are to expose underserved youth to technological environments, provide positive role models, and nurture a network of collaborators, as well as build mutual goodwill within the community. STARBASE Mississippi will focus on improving the STEM knowledge, critical thinking, and problem-solving skills of fifth graders from surrounding schools. Mississippi is no stranger to STEM, as each of these school districts have STEM implemented in some form, but the opportunities are limited due to funding and resources. This initiative will serve to enhance the existing STEM programs that the districts and communities have in place and create more opportunities for students and teachers to be involved, all while building the relationship between the installation, the Mississippi National Guard, and the community.

STARBASE Mississippi will also serve as an outreach program to raise STEM education awareness within the districts and increase interest in STEM careers. STARBASE Mississippi will seamlessly blend the goals and objectives of both the DoD STARBASE program and participating school districts, and be a conduit of support that promotes the talents and contributions of volunteers, teachers, parents, community leaders, civilian and Guard professionals district and statewide.

CONTACT INFORMATION

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STARBASE FORT HARRISON

HELENA, MONTANA



ESTABLISHED 2007 **MILITARY LOCATION: Fort Harrison Army National Guard Base**
SERVICE COMPONENT: Army National Guard **CLASSROOMS AUTHORIZED: 1**



SCHOOL DISTRICTS SERVED

- East Helena Public School District
- Helena Public School District
- Montana City School District 27
- Private Schools

STARBASE Fort Harrison (SBFH) was founded in 2007 and is located on the Fort William Henry Harrison Army National Guard base, just west of Helena, Montana. The state of Montana Department of Military Affairs, along with the Montana Army National Guard, administers the STARBASE program. Since its inception, SBFH has served nearly 12,000 students in the Basic STARBASE program by providing them hands-on, small group, high quality STEM curriculum. The program primarily serves fifth grade students in the Helena Public School District as well as the surrounding areas. SBFH conducts STARBASE Advanced STEM programs in local area middle schools to continue nurturing and supporting the exposure of students to STEM disciplines. Annual STEM summer camps are held that serve the local Native American and military youth populations. SBFH conducts extensive outreach events throughout the year to engage community members in the excitement of experiencing and learning about STEM. STARBASE Fort Harrison looks forward to continuing to serve the students and community members of Montana.

FY23 Program Highlights:

- » Experienced a growth of nearly 150% increase in STARBASE Advanced program participation from middle school students.
- » Partnered with Shodair Children's hospital to provide STEM outreach programming to in-patient students.
- » Participated in the Montana STEM Summit which allowed networking and collaboration with other Montana STEM education organizations.
- » Hosted two STEM Family Night outreach events at local elementary schools. STEM Family Night at Central Elementary School was featured in the local newspaper.
- » Coordinated with local volunteers to provide STEM career guest speakers to every visiting class.
- » Hosted or participated in 14 separate community STEM outreach events.
- » Partnered with military volunteers to allow classes to visit the Advanced Technical Training Center located on the Fort Harrison Army National Guard Base.

CONTACT INFORMATION

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STARBASE GREAT FALLS

GREAT FALLS, MONTANA



ESTABLISHED 2011

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Great Falls Air National Guard Base

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Great Falls Public School District

Private Schools

The Montana Air National Guard hosts the STARBASE program in Great Falls at the 120th Airlift Wing. Since its inception in 2011, the program has served over 11,000 Montana youth. All fifth-grade students in the Great Falls Public School District attend STARBASE Great Falls for the five-day Basic program where they participate in high-quality, hands-on STEM activities and experience real STEM occupations and opportunities on the Guard base. Private schools, homeschool families, and rural schools in the surrounding area are also invited to supplemental programming and outreach in the form of day trips to the STARBASE Great Falls classroom, summer camps, and STARBASE Advanced after-school programs. The STARBASE Great Falls team also travels to Montana Reservations to deliver day camps to elementary-aged Native American youth. STARBASE Great Falls graduates consistently share that, because of STARBASE, they have an increased awareness of civilian and military STEM opportunities, as well as bolstered confidence and resilience to pursue and achieve their STEM career goals. STARBASE Great Falls is excited to continue to expand their reach and impact to benefit Montana's youth and communities.

FY23 Program Highlights:

- » Reached 794 students through the five-day basic program, and served an additional 524 students through summer camps, outreach, and the STARBASE Advanced after-school program.
- » Conducted four STARBASE Advanced after-school programs at North Middle School and East Middle School in Great Falls, partnering with the Science Olympiad team and Cascade County 4-H.
- » Ensured that every student who visited STARBASE Great Falls had the opportunity to tour a C-130 Hercules airplane, which students see flying around Great Falls frequently.
- » Maintains ongoing partnership with the Montana State University Flathead Reservation Extension Office to identify Flathead Reservation schools in need of STEM programming. Each year, STARBASE Great Falls travels to the identified community and provides a two-day summer STEM camp for elementary-aged youth.
- » Consistently reports that a high percentage of graduating high school students who attended STARBASE Great Falls in fifth grade enjoyed STARBASE and found it valuable, with a large percentage agreeing that STARBASE made them feel like they could be successful in classes focused on STEM, and more than half report planning to pursue a STEM occupation.

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STARBASE HENDERSON

HENDERSON, NEVADA



ESTABLISHED 2022

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Henderson Armory

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Clark County School District

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Battle Born Youth Challenge Non Profit

Nestled in the southeast corner of Henderson, NV, STARBASE Henderson shines as one of the amazing jewels of the Nevada National Guard. This youth program, designed specifically for fifth-grade students, ignites interest through hands-on, interactive science activities. By exposing students to essential skills in STEM, including coding, robotics, mathematics, engineering design, and science content, STARBASE Henderson bridges the connection between classroom learning and real-world applications. All of the offerings directly support the Nevada Academic Content Standards. In addition, the program introduces students to STEM careers, guiding them toward potential paths as they grow into middle and high school. The program's impact resonates throughout the community, sparking curiosity, and driving a passion for learning and growth.

FY23 Program Highlights:

- » Immersed over 900 students across the Las Vegas Valley in engaging STEM activities during the past year, fostering a passion for science and mathematics.
- » Received approval from the Department of Defense for an expansion program, enabling the capacity to increase to twice as many students in the upcoming school year.
- » Introduced students to various STEM careers, preparing them for a course of study in middle and high school that could lead them toward fulfilling and innovative careers in STEM fields.
- » Connected STEM content from the classroom to real-world applications, ensuring that the skills taught directly support the Nevada Academic Content Standards.
- » Created a substantial waiting list of over 20 schools eager to participate, reflecting the program's popularity and positive influence on educational opportunities in the Las Vegas Valley.

CONTACT INFORMATION

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STARBASE HIGH SIERRA

RENO, NEVADA



ESTABLISHED 2022

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Nevada Air National Guard Base

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Washoe County School District
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Battle Born Youth Challenge Non Profit

The State of Nevada is changing. Once known for hospitality, gaming, and tourism industries, the state has now added a long list of new and complex industries to its resume. Some of these include clean energy, robotics, battery manufacturing, drones, and telecommunication. Further, Nevada's old established industries are also experiencing change as technology collides with the entertainment and gaming industries. As old and new come together, there emerges a need for a common element; specialized knowledge and skill sets cultivated in STEM programs.

STARBASE High Sierra's objectives are to expose underserved youth to technological environments and provide positive role models, nurture a network of collaborators, and build mutual goodwill within the community. STARBASE High Sierra focuses on improving the STEM knowledge, critical thinking, and problem-solving skills of disadvantaged fifth graders from local Title One schools. STARBASE High Sierra hosts a minimum of 30 weeks of interactive instruction, hands-on activities, and specialized on-base tours. For each cohort of students, the 25-hour approved STARBASE curriculum is delivered one day per week for five hours over a five-week period or one cohort per week for five hours per day, for five days.

FY23 Program Highlights:

- » Worked with the school district to have materials transcribed into braille for a student who was visually impaired.
- » Moved successfully into our new building after renovations were complete.
- » Served students who live in very rural communities through a partnership with the Boys & Girls Club of Truckee Meadows.
- » Secured STEM Careers presentations on site for the entire year with the Guard Fire Station, Guard Emergency Management, and Guard Maintenance Group for the C-130's.
- » Completed a cross-international collaboration through the Mandela Washington Fellowship program with STEMIgnite in Cameroon, Africa.

CONTACT INFORMATION

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STARBASE NELLIS

LAS VEGAS, NEVADA



ESTABLISHED 2012

SERVICE COMPONENT: Air Force Reserve

MILITARY LOCATION: Nellis Air Force Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Clark County School District
Private and Charter Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Nexus Hi-Quality Education

STARBASE Nellis is one of three DoD STARBASE programs in the state of Nevada that seeks to inspire students in science, technology, engineering, and mathematics by providing rewarding and memorable learning experiences. Using the unparalleled technological environment found on Nellis Air Force Base (AFB) as a backdrop, STARBASE Nellis engages children in an educational adventure unlike anything they have ever experienced.

Located at the home of the United States Air Force Thunderbirds, and sponsored by the 926th AFRC Wing, STARBASE Nellis provides 25 hours of hands-on, minds-on activities to students from the Clark County School District, the fifth -largest district in the nation. The program recently expanded into a two-classroom academy to extend their sphere of influence to more fifth-grade students in the Las Vegas area. Sponsored and supported by the Air Force Reserve, STARBASE Nellis is proud to be a leader in STEM educational opportunities.

FY23 Program Highlights:

- » Established a fully-executed agreement with Clark County School District.
- » Conducted successful summer camps that allowed for creativity while furthering public outreach and engagement.
- » Successfully operating a double-classroom program increasing the capacity for student participation from the Clark County School District.
- » Continues to reach out to STEM partners throughout the city of Las Vegas to increase collaboration between the installation, DoD STARBASE Nellis and the community.
- » Provided students with various opportunities to engage with members of the military and learn about STEM careers on the installation.
- » Implemented summer STEM programs for military dependents.

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STARBASE NEW HAMPSHIRE

CONCORD, NEW HAMPSHIRE



ESTABLISHED 2023

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Edward Cross Training Complex

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Dunbarton School District

Franklin School District

STARBASE New Hampshire received funding for their program during Fiscal Year (FY) 2022 and after securing and renovating their facility, brought their new director on board in September 2023. The new program set-up process continued with the hiring and training of additional staff and recruiting local schools and districts to participate in their program – the first of its kind in the State of New Hampshire. In mid-November 2023, the first groups of students from Dunbarton Elementary walked through the doors and STARBASE New Hampshire was officially off and running. Work is currently underway to finalize district-wide participation with the Manchester School District, which is the largest and most diverse in the state.

Great things are planned for STARBASE New Hampshire! Their goal is to become firmly established as part of the New England STEM community as they complete their first year of operation and build partnerships across the area. They look forward to sharing the excitement of STARBASE and its many program offerings throughout the state.

FY23 Program Highlights:

- » Set up a series of meetings with local school district superintendents, science coordinators and principals to tell them about the STARBASE program and how it can benefit their schools and students.
- » Conducted an official “ribbon cutting” ceremony, which included leaders from local school districts, state representatives and the military in November 2023.
- » Received feedback from the principal from Dunbarton Elementary that she so impressed with the STARBASE New Hampshire program that she created a three-minute video where the program was explained, and students shared their experience. The video was shared with STARBASE locations around the country, Puerto Rico, and Guam. It is also being used as a recruitment tool for the New Hampshire program.

CONTACT INFORMATION

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STARBASE JOINT BASE MAGUIRE-DIX-LAKEHURST

TRENTON, NEW JERSEY



ESTABLISHED 2022

SERVICE COMPONENT: Air Force

MILITARY LOCATION: Joint Base McGuire-Dix-Lakehurst

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

- Lakehurst School District
- Manchester Township School District
- New Hanover Township School
- North Hanover School District
- Pemberton School District
- Springfield Township School District

STARBASE Joint Base McGuire-Dix-Lakehurst (JB MDL) is the nation's first STARBASE program on a tri-service joint base. The program began welcoming students in May of 2022. STARBASE JB MDL currently utilizes one classroom with the intent to establish two additional classrooms in the near future. The program plans to host over 1,000 students during the upcoming school year.

STARBASE JB MDL is the third initiative of the JB MDL Executive STEM Council, a newly created group hosted by the 87th Air Base Wing that incorporates key mission partners who are working to create an ecosystem to develop the country's future workforce.

STARBASE JB MDL is surrounded by a densely populated and diverse community that is in need of STEM-based programs that address the wide disparity in access to educational facilities and instruction. The program's presence on an active military base has afforded students the opportunity to tour military facilities and jobs, such as bioenvironmental engineering, explosive ordnance disposal, and air traffic control, as well as, civilian positions in and around the base.

FY23 Program Highlights:

- » Participated in the Power in the Pines Air & Space Open House.
- » Collaborated with the Institute for Earth Observations at Palmyra Cove.
- » Partnered with The Naval Surface Warfare Center, Philadelphia Division (NSWCPD) for summer programming.

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STARBASE HOLLOMAN

ALAMOGORDO, NEW MEXICO



ANTICIPATED 2024

SERVICE COMPONENT: Air Force

MILITARY LOCATION: Holloman Air Force Base

CLASSROOMS AUTHORIZED: 2



ANTICIPATED SCHOOL DISTRICTS SERVED

Alamogordo Public Schools
 Cloudcroft Municipal Schools
 Tularosa Municipal Schools
 Mescalero Schools

Ruidoso Municipal Schools
 Las Cruces Public Schools
 Local Private and Parochial Schools

STARBASE Holloman's objective is to develop a robust program available to every fifth-grade classroom in the Alamogordo and Otero County communities. The program will be based on a five-day, five-week rotation where students are exposed to the established DoD STARBASE core curriculum standards. Students will develop skills necessary for critical thinking, time management, teamwork, and application of skills through hands-on activities, all while engaging with highly sophisticated technology. Through this opportunity, participants will learn firsthand how science and mathematics are applied to real-world conditions. STARBASE Holloman will primarily serve students who are at-risk, underrepresented, or otherwise marginalized. The curriculum is clearly aligned with State of New Mexico Grade Level Expectations, as well as meeting and exceeding the established national standards. Participants will maximize their learning potential through DoD STARBASE curriculum and hands on activities which will reinforce and build upon the material learned at their respective schools.

Holloman Air Force Base is primed and prepared to become the first DoD STARBASE in the triad of Holloman AFB-White Sands Missile Range-Fort Bliss. The remote and austere location, coupled with the diverse community, leads to a significant need for DoD STARBASE as a foundation for addressing disparity in educational access to facilities and instruction. STARBASE Holloman is just the beginning of the STEM Pipeline and Ecosystem that we are going to establish to fuel the STEM careers and meet the goals of the DoD STEM Initiatives, empowering the nation to again be the world leader in STEM.

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STARBASE NEW MEXICO

ALBUQUERQUE, NEW MEXICO



ESTABLISHED 2003

SERVICE COMPONENT: Air Force

MILITARY LOCATION: Kirtland Air Force Base

CLASSROOMS AUTHORIZED: 3



SCHOOL DISTRICTS SERVED

Socorro Consolidated School District
 Albuquerque Public Schools
 Los Lunas Public Schools
 Rio Rancho Public Schools
 Private Schools

Since its inception in 2003, DoD STARBASE New Mexico (NM) has grown from a one-classroom program to a three-classroom, Level III "Exemplary" STARBASE program. Located on Kirtland Air Force Base in Albuquerque, STARBASE NM has served over 17,000 students, mostly from Title I schools, has a proud partnership with Kirtland AFB and the Air Force Research Laboratory, and has built strong relationships with the community.

In 2015, the University of New Mexico Center for Education Policy Research conducted a study that reported DoD STARBASE NM students gained competence in both mathematics and language arts that persisted through middle and high school. DoD STARBASE NM added its first Advanced program in 2012 and has competed in the American Rocketry Challenge (ARC) National Finals twice.

FY23 Program Highlights:

- » Served 1,972 students and 112 teachers in our Basic STARBASE program.
- » Participated in eight community STEM events in Fiscal Year 2023.
- » Expanded STARBASE Advanced to serve two middle schools and one high school JROTC program.
- » Partnered with Tuskegee Airmen Inc. Lloyd W. "Fig" Newton Chapter to host an annual Youth Aviation Camp that culminates with the cadets flying a Cessna.
- » Provided six, week-long summer programs to area youth and military dependents.

CONTACT INFORMATION

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STARBASE FORT DRUM

FORT DRUM, NEW YORK



ESTABLISHED 2022

SERVICE COMPONENT: Army

MILITARY LOCATION: Fort Drum

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Beaver River Central School District
 Belleville-Henderson Central Schools
 Carthage Central School District
 Clifton Fine Central School District
 Copenhagen Central School District
 Gouverneur Central School District
 Harrisville Central School

Indian River Central School District
 Lafargeville Central School District
 Sackets Harbor Central School District
 South Jefferson Central School District
 Thousand Island Central School District
 Watertown City School District

Located in the foothills of the Adirondack Mountains and the St. Lawrence Seaway Valley, STARBASE Fort Drum is located on Fort Drum, home of the 10th Mountain Division. The program held its first classes in September 2022. Since then, they have gathered feedback from the surrounding school districts and used that feedback to make various modifications to provide students with the best learning experience possible.

Visiting classes have been able to learn the history of Fort Drum and the surrounding area, while learning about the impact Fort Drum has had on the local community and the world as a light infantry division. Through their experiences here at STARBASE Fort Drum, participants are able to make connections between learning in the classroom and their own career path.

FY23 Program Highlights:

- » Exceeded minimum classes served with 67 classes of students participating during our inaugural year.
- » Hosted a ribbon-cutting event in September 2022, which was attended by area school district administration, Fort Drum Garrison and Division representatives, and Civil-Military Programs Director with the Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs.
- » Hosted program visits with important stakeholders: Assistant Secretary of the Army for Installations, Energy and Environment, Lewis County Emergent Leaders, and the Jefferson Leadership Institute.
- » Worked collaboratively with program leaders to allow fourth graders to attend the program, expanding the opportunity to 11 Carthage Central Grade 4 classes.
- » Attended Fort Drum Trunk or Treat and Watertown Public Broadcasting Services (WPBS) Ready, Set, Fun community outreach events.
- » Hosted two separate summer camps with emphasis on energy explorations, aviation and robotics.

CONTACT INFORMATION

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STARBASE CHARLOTTE

CHARLOTTE, NORTH CAROLINA



ESTABLISHED 1993

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Charlotte Air National Guard Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Charlotte Mecklenburg Schools	Iredell Statesville Schools
Cleveland County Schools	Lincoln County Schools
Gaston County Schools	Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE North Carolina Inc.

This year, STARBASE Charlotte celebrated its 30th anniversary of teaching STEM to underserved and underrepresented students in the community. STARBASE Charlotte is housed on the North Carolina (NC) Air National Guard Base and hosted by the 145th Airlift Wing, home of the mighty C-17 aircraft.

Students who attend STARBASE Charlotte have the unique opportunity to watch the 145th Airlift Wing personnel in action, by touring and talking with the installation and airport firefighters, pilots, and loadmasters on the C-17. Each student gets a firsthand look inside the airport fire trucks, the aircraft flight deck and the cargo area of the airplane. This provides the students with insight on how STEM careers play an important role in the safety and security of our state and nation.

Through efforts to grow the program's impact, STARBASE Charlotte now proudly partners with eight school districts and 21 schools in the NC Southern Piedmont region.

FY23 Program Highlights:

- » Graduated 54,688 students over the 30-year history of the program. As of the close of this year, they have successfully taught the required 60 classes and four supplemental classes, as well as eight additional supplemental classes, reaching an annual total of 1,598 students.
- » Facilitated various rocket launches with participating classes back at school campuses.
- » Added two new school districts and seven new schools to their program this year.
- » Hosted a summer program with a focus on forensic science, investigation, and exploration.

CONTACT INFORMATION

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STARBASE WILMINGTON

WILMINGTON, NORTH CAROLINA



ESTABLISHED 2004

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Carolina Beach Road Readiness Center

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Brunswick County Schools
New Hanover County Schools
Private and Charter Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE North Carolina Inc.

STARBASE Wilmington has been in operation for 19 years, but until 2022 had been implementing a "STARBASE-on-Wheels" model out of Fort Fisher. Recently, the program was relocated to the Carolina Beach Road Readiness Center in Wilmington and has received wonderful support from North Carolina Army National Guard personnel. They officially opened their doors at this new location on Monday, April 18, 2022.

In addition to participating in hands-on, engaging STEM activities, students who attend STARBASE Wilmington also have the opportunity to launch rockets from Legion Stadium Sports Complex, home to the Wilmington Sharks and Wilmington Hammerheads. Program staff were proud to resurrect their STARBASE Advanced program this year with a robotics and coding curriculum. With a 90% retention rate, the Advanced program was a great success, and they look forward to growing this program further.

STARBASE Wilmington continued to foster their growing relationship with Onslow County Schools, through two summer camps in Jacksonville, NC. The Drone and Roller Coaster Physics-themed camps served rising fourth through sixth graders and had a lengthy waitlist. In addition to summer camps, STARBASE Wilmington participated in a variety of outreach programs, including serving as judges for two Science Olympiads.

FY23 Program Highlights:

- » Featured in Intracoastal Living magazine with future opportunities ahead for additional media exposure.
- » Completed the required academies their first year in the new location, even with last-minute school cancellations.
- » Held two summer camps in Jacksonville, NC for military dependent children.
- » Hosted multiple visits from school board members to help raise awareness of STARBASE Wilmington.

CONTACT INFORMATION

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STARBASE NORTH DAKOTA

MINOT, NORTH DAKOTA



<p>ESTABLISHED 2015</p> <p>SERVICE COMPONENT: Air Force</p>	<p>MILITARY LOCATION: Minot Air Force Base</p> <p>CLASSROOMS AUTHORIZED: 1</p>
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SCHOOL DISTRICTS SERVED

Minot Public Schools

STARBASE North Dakota (ND) is located on Minot Air Force Base and is hosted by the 5th Bomb Wing. The program opened in January 2015 and is located on-base at North Plains Elementary School. Students who attend STARBASE North Dakota have the unique opportunity to visit the only Department of Defense installation that has both B-52 bomber aircraft and a fleet of 150 Minuteman III intercontinental ballistic missiles (ICBMs). As such, students participating in the STARBASE program get to visit work centers with active-duty Air Force members who actively use STEM in both exciting career fields. Student STEM tours typically include the B-52H Stratofortress Weapons System Trainer and the Missile Procedures Trainer. Through these tours and conversations with the military personnel who work the programs, students get a glimpse into the diverse and incredible technological possibilities available with any future STEM career.

FY23 Program Highlights:

- » Hosted 120 Minot AFB USAF active-duty members who contributed 250 volunteer hours to STARBASE ND during the 2022-2023 school year. They assisted with outreach STEM programs and as graduation guest speakers.
- » Impacted 300 students and their family members with outreach STEM activities during the 2022-2023 school year.
- » Celebrated their STARBASE ND teacher who won the General David C. Jones, Chapter 135 of the Air Force Association Teacher of the Year.
- » Participated in two Minot, ND Community Learning Center STEM Nights, engaging approximately 100 third through fifth graders in creative STEM activities.
- » Completed its second annual commitment to the FIRST LEGO League Regional Robotic Challenge, providing judges for 14 robotic teams.

CONTACT INFORMATION

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STARBASE WRIGHT-PATT

DAYTON, OHIO



ESTABLISHED 2004

SERVICE COMPONENT: Air Force

MILITARY LOCATION: Wright Patterson Air Force Base

CLASSROOMS AUTHORIZED: 4



SCHOOL DISTRICTS SERVED

Beavercreek City Schools
 Dayton Public Schools
 Fairborn City Schools
 Huber Heights City Schools
 Kettering City Schools

Mad River Local Schools
 West Carrollton City School District
 Xenia City Community Schools
 Yellow Springs Local Schools
 Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Ohio Educational Outreach Foundation

Since its inception in 2004, STARBASE Wright-Patt continues to grow from a modest start to a four-classroom operation that commands a waiting list and serves an average of 2,500 students annually. Although outreach opportunities had been stalled in the area due to COVID-19 restrictions, STARBASE Wright-Patt remained involved as much as possible and retained its Level III Exemplary DoD STARBASE designation. In addition to outstanding support from its many Wright-Patt Air Force Base partnerships, STARBASE Wright-Patt has built and maintained strong support in the educational community. Partnering with Beavercreek City Schools and providing a STARBASE Advanced program in each of its middle schools has allowed for a strong line of continued STEM and installation support for many students. Likewise, the program's partnerships with the University of Dayton and Sinclair Community College provide the much-needed outreach events, such as First Four STEM Hoopla and Sinclair's TechFest. STARBASE Wright-Patt looks forward to building even more partnerships with Wright-Patterson Air Force Base and the surrounding industry communities.

FY23 Program Highlights:

- » Expanded Advanced STARBASE after-school program from two to four schools.
- » Hosted the Miami Valley Superintendents' Conference and built more connections within the community.
- » Successfully converted to OnShape.
- » Partnered with the Greene County Library to implement a weekly outreach event for area homeschoolers.

CONTACT INFORMATION

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STARBASE OKLAHOMA - BURNS FLAT

ELK CITY, OKLAHOMA



ESTABLISHED 2006 **MILITARY LOCATION:** Western Technology Center
SERVICE COMPONENT: Air National Guard **CLASSROOMS AUTHORIZED:** 1



SCHOOL DISTRICTS SERVED

- | | |
|-------------------------------------|--------------------------------|
| Arapaho-Butler Public Schools | Leedey Public Schools |
| Burns Flat-Dill City Public Schools | Merritt Public Schools |
| Canute Public Schools | Mtn View Gotebo Public Schools |
| Clinton Public Schools | Sentinel Public Schools |
| Erick Public Schools | Sweetwater Public Schools |
| Hammon Public Schools | Private Schools |

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Oklahoma Inc.

STARBASE Oklahoma-Burns Flat is located next to the Clinton Sherman Industrial Airpark, which is a licensed space port that features the third-longest civilian runway in North America. The program is housed on the campus of the Western Technology Center, located on the former site of the Clinton Sherman Air Force Base (1954-1969). This provides the huge advantage of being in close proximity to The Oklahoma Air & Space Port. The Space Port is a public-use airport and industrial airpark that has facilities in place for aerospace testing, research and development, flights, and launches. It is one of 12 spaceports in the nation, and the only one with an FAA-approved spaceflight corridor not in restricted airspace or Military Operation Areas.

FY23 Program Highlights:

- » Went from a part-time program to five days a week, while adding two new schools with nine classes to the spring 2023 semester.
- » Worked with community leaders to reach the local and surrounding areas through “coffee chats” and other outreach programs.
- » Maintained strong program relationships with the new Premium Aerospace Center that refurbishes old fighter jets for museums.
- » Strengthened relationship with the Stafford Air and Space Museum as supporters and donors for our Star Student Leaders.
- » Hosted our first-ever teacher workshop, as well as two full and active summer camps.
- » Held an exceptional career day with senior aerospace engineer students from Oklahoma State University, who shared about their new careers at Boeing, NASA, and American Airlines.
- » Looking to expand to a two-classroom program.

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STARBASE OKLAHOMA - FORT SILL

LAWTON, OKLAHOMA



ESTABLISHED 2006

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Fort Sill

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Boone Apache Public Schools	Flower Mound Public Schools
Central High Public Schools	Geronimo Public Schools
Chattanooga Public Schools	Lawton Public Schools
Cyril Public Schools	Sterling Public Schools
Duncan Public Schools	Temple Public Schools
Empire Public Schools	Private Schools
Fletcher Public Schools	

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Oklahoma Inc.

STARBASE Oklahoma-Fort Sill is located at the Fort Sill FIRES Center of Excellence near Lawton, Oklahoma. The program offers an enriching STEM experience to area students in a military environment. Students learn firsthand about all the programs and support that Fort Sill provides for the U.S. Army. Fort Sill has a rich history and is the home of the Army's Field Artillery and Air Defense Schools. The programs are not just limited to the U.S. Army, however; guests from Fire & Safety, Military Police, and Marine Corps have all visited the STARBASE Fort Sill classrooms and demonstrated how STEM plays a crucial role in their respective fields.

STARBASE Oklahoma-Fort Sill also has excellent STARBASE Advanced clubs exploring rocketry, energy, and the engineering design process. The program also hosts summer camp academies for the community. Community outreach extends to the local youth centers, STEM clubs at local churches, and supporting the air show at Altus Air Force Base. The STARBASE Oklahoma-Fort Sill team looks forward to another year of giving students hands-on experiences in STEM.

FY23 Program Highlights:

- » Completed first full year at our new site.
- » Introduced new lessons using Sphero robotics.
- » Continues to garner interest in the program from area schools.

CONTACT INFORMATION

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STARBASE OKLAHOMA - OKLAHOMA CITY

OKLAHOMA CITY, OKLAHOMA



ESTABLISHED 2006 **MILITARY LOCATION: Will Rogers Air Force Base**
SERVICE COMPONENT: Air National Guard **CLASSROOMS AUTHORIZED: 2**



SCHOOL DISTRICTS SERVED

- Choctaw-Nicoma Park School District
- Crooked Oak Public Schools
- Harrah Public Schools
- Mid-Del Public Schools
- Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Oklahoma Inc.

STARBASE Oklahoma City (OKC) is now located on Will Rogers Air Force Base in South Oklahoma City, adjacent to Will Rogers World Airport. Formerly located on Tinker Air Force Base, STARBASE OKC is now hosted by the men and women of the 137th Special Operations Wing (SOW). The new location offers new opportunities for the students in south Oklahoma City, as well as the cities of Moore and Mustang. The new location will provide students with access to both Air and Army Guard support units and will benefit from the technological proficiency and experience of the men and women of the 137th SOW. STARBASE OKC hosts two STARBASE Advanced programs and is looking forward to implementing new rocketry lessons in the new school year. STARBASE OKC hosts summer camps on and off of the installation to fit the needs of the military families and students in the local area.

FY23 Program Highlights:

- » Started the school year at a new location, allowing for the program to be fully implemented as intended on a military installation.
- » Introduced new hands-on, minds-on STEM lesson plans and activities in accordance with DoD-approved curriculum.
- » New host installation allows for development of new relationships with schools and districts.

CONTACT INFORMATION

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STARBASE OKLAHOMA - TULSA

TULSA, OKLAHOMA



ESTABLISHED 1993

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Tulsa Air National Guard Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Afton Public Schools	Pretty Water Public Schools
Anderson Public Schools	Pryor Public Schools
Avant Public Schools	Salina Public Schools
Caney Valley Public Schools	Sand Springs Public Schools
Hominy Public Schools	Sequoyah Public Schools
Hulbert Public Schools	Tulsa Public Schools
Justus-Tiawah Public Schools	Union Public Schools
Kansas Public Schools	Woodall Public Schools
Osage Hills Public Schools	Wynona Public Schools
Pawhuska Public Schools	Private Schools
Porter Public Schools	

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Oklahoma Inc.

Established in 1993, STARBASE Oklahoma (OK)-Tulsa is located on the Tulsa Air National Guard Air Force Base, home to the 138th Fighter Wing. The 138th Fighter Wing maintains F-16 Fighting Falcon combat forces ready for mobilization and deployment. The Tulsa Air National Guard provides two state-of-the-art classrooms for students in Tulsa and the surrounding area. The proximity of the classroom to all of the Air National Guard resources makes the location an excellent military aerospace learning environment.

STARBASE OK-Tulsa concurrently offers two Advanced after-school programs for middle school students in the community and has also partnered with the Tulsa Boys and Girls Club to offer a summer camp in addition to their Tech Kids summer camp for fourth- and fifth-grade dependents of military families.

FY23 Program Highlights:

- » Established a relationship with the Tulsa Regional STEM Alliance which allows STARBASE OK-Tulsa to reach the broader Tulsa community with information about upcoming summer camps and various STEAM activities.
- » Provided rural, underserved schools with the opportunity for their fifth-grade students to experience hands-on STEAM experiments, robotics, and CAD activities that they otherwise would not be able to experience.
- » Generated a relationship with Tulsa Air and Space Museum, allowing cadets to experience historical aviation exhibits and planetarium shows all about Mars exploration and the International Space Station.

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STARBASE CAMP RILEA

WARRENTON, OREGON



ESTABLISHED 2019

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Camp Rilea Armed Forces Training Center

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Astoria School District
 Clatskanie School District
 Jewell School District
 Knappa School District

Naselle-Grays River Valley School District
 Seaside School District
 Warrenton-Hammond School District

Camp Rilea's Armed Forces Training Center is home to STARBASE Oregon's third STARBASE Program. Located at an annexed school building obtained by Camp Rilea in 2018, STARBASE Camp Rilea hosts students from 12 schools from both Oregon and Washington's beautiful Pacific Northwest. STARBASE Camp Rilea continues to receive incredible support from the personnel at Camp Rilea and the local community. Participation in community outreach events and summer camps has doubled, with an exciting goal to create a STARBASE Advanced program soon.

The STARBASE Camp Rilea partnership with the Department of Human Services continued for its fourth year in a row, allowing children in foster homes a chance to experience STARBASE's wonderful activities throughout summer camp experiences.

FY23 Program Highlights:

- » Hosted six supplemental camps this year with a focus on Battle Bots activities, coding, advanced robotics, technology, and design for various grade levels.
- » Hosted its third and final year of STARBITS training, supporting STARBASE staff from around the country.
- » Continues to contribute to the nationally-approved DoD STARBASE Curriculum.
- » Partnered with the Special Education Department at Lewis and Clark Elementary to host an exciting STEM event for students.
- » Conducted an additional five supplemental activities that piloted a sixth grade program using a completely separate 25-hour curriculum, meeting all DoD-approved 27 objectives.
- » Working to extend program offerings to include STARBASE Advanced programs and additional supplemental programs.

CONTACT INFORMATION

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STARBASE KINGSLEY

KLAMATH FALLS, OREGON



ESTABLISHED 1993

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Kingsley Field

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Klamath County School District
Klamath Falls City Schools
Private Schools & Homeschool Groups

The DoD STARBASE Kingsley Program is proud to announce that 2023 marked its 30th anniversary! It is the program team's continued goal to inspire the next generation of innovating scientists, engineers, and aviators for years to come. The program would not be here without the unwavering support of the 173d Fighter Wing and Kingsley Field's commanders, military and civilian personnel, local military families, and the education community.

FY23 Program Highlights:

- » Provides 25 hours of hands-on, minds-on STEM education where students experiment with physics, chemistry, fluid mechanics, energy, and so much more. They solve engineering design challenges and develop skills in computer-aided design (CAD).
- » Fortunate to be able to invite and host every fifth grader in the county: public, private, and homeschooled.
- » Expanded outreach as part of their yearly goal to engage with the local community by bringing in kindergarten-age military dependents for a Winter Wonderland STEM Camp. These little explorers were full of excitement as they investigated STEM through a multitude of activities.
- » Inspired by the industry shortage of pilots, STARBASE Kingsley has held an annual Aviation Summer Academy since 2018. This supplemental program continues to inspire curiosity in the field of aeronautics, allowing youth to interact with professional aviators and crew members, tour the cockpits, and simulate flying various aircraft.
- » Piloted another annual outreach event with the local Klamath County School District for third through ninth graders: Migrant Summer Camp. In the inaugural year, the young campers engaged in microscope exploration, where their curiosity took them beyond the lesson, and they ventured to analyze their surroundings with amazement. This year, the children attending the Migrant Summer Camp engineered a vehicle for a variety of Sphero Balloon Challenges.
- » Developed a partnership with the Oregon State University Extension Office Military Liaison and the local Klamath County foster care system, to bring more seventh through twelfth graders to our summer camps.

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STARBASE PORTLAND

PORTLAND, OREGON



ESTABLISHED 1993 **MILITARY LOCATION: Portland Air National Guard Base**
SERVICE COMPONENT: Air National Guard **CLASSROOMS AUTHORIZED: 2**



SCHOOL DISTRICTS SERVED

- | | |
|---------------------------------|-------------------------------------|
| Beaverton School District | Parkrose School District |
| Canby School District | Portland Public School District |
| Corbett School District | Reynolds School District |
| Mt. Angel School District | Private Schools & Homeschool Groups |
| North Clackamas School District | |

DoD STARBASE Portland is excited to have celebrated the 30th anniversary of their program in 2023. Over the last 30 years, they have inspired tens of thousands of future STEM professionals and are eager to continue this mission with increasing passion and innovation far into the future. As the program commemorates this milestone, they recognize that they would not have made it this far without the tremendous support of many organizations and individuals. Specifically, program staff are very grateful for the 142nd Fighter Wing community as well as the school districts, educators, and families in the Portland area who have been champions of the STARBASE program and its mission over the years.

FY23 Program Highlights:

- » Offered STEM education to more than 2,200 students during the 2022-2023 school year across eight districts and private schools, and provided each student visiting the program a chance to tour a jet hanger, as the 142nd Fighter Wing is the home of the F-15 fighter jet. Many STEM topics students investigate in the classroom come to life as they learn about the design, maintenance, and operation of the F-15 from a mechanic or pilot.
- » Offered 11 camps to students ranging from 2nd -8th grade where students experimented with different forms of energy, built their own chain reaction machines, explored wetlands and took samples to view under microscopes, conducted chemistry experiments, built and programmed robots, developed CAD models, and more.
- » Hosted two science and engineering based experiments for a summer day camp that reached 500 students for students in first through fifth grade.
- » Partnered with Champions, an after-school program in the Parkrose District by offering Sphero Robotic Camps to the K-5th grade students in attendance.
- » Conducted the program's final iPad Training session in 2023 after nine years of service providing information to STARBASE staff across the nation.
- » Plans to expand the program's Advanced club with opportunities for students to build and program a LEGO robot to be used in a battle bot arena on graduation day.

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STARBASE REES

HERMISTON, OREGON



ESTABLISHED 2021

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Raymond Rees Training Center

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Helix School District
Stanfield School District
Umatilla School District
Private Schools

STARBASE Rees is located on the Raymond Rees Training Center, formerly known as Umatilla Munitions Depot and Umatilla Chemical Depot, in the beautiful northeastern Oregon desert, near the Columbia River border of Southeast Washington. Conveniently located in Oregon off Exit 177 at the junction of Interstate 84 and Interstate 82, this allows for easy access from rural eastern Oregon and Southeast Washington. The area is recognizable to locals for the thousand "igloos" that previously housed 500 pounds of munitions. The STARBASE Rees team is thrilled to help ignite the spark that excites kids about science, technology, engineering, and mathematics (STEM) that will hopefully send program participants down the path towards a rewarding career in the field of STEM.

FY23 Program Highlights:

- » Created new partnerships with four local school districts. As a direct result, the interest for the innovative STEM program from neighboring fifth-grade classes has expanded. The program is expanding connections into southeast Washington, and offering services to Tri-Cities and surrounding areas.
- » Collaborated with the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and Pendleton School District to conduct two days of community outreach engaging fourth and fifth graders in STEM, utilizing chemistry, coding, and robotics.
- » Successfully ran four, 20-hour summer STEM camps for children from the base, local community, and CTUIR. Participants were excited to participate in STEM lessons to include Battle Bots, engineering, and problem-solving challenges.
- » Moved the program to a newly-revamped facility with the help of Raymond Rees Training Center and the Oregon Military Department to allow students to experience all that DoD STARBASE has to offer.
- » Expanded connections with the school districts allowing, for the offering of a STARBASE Advanced after-school STEM club for local sixth through eighth graders.

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STARBASE PUERTO RICO

CAROLINA, PUERTO RICO



ESTABLISHED 1995 **MILITARY LOCATION: Muñiz Air National Guard Base**
SERVICE COMPONENT: Air National Guard **CLASSROOMS AUTHORIZED: 2**



SCHOOL DISTRICTS SERVED

- | | |
|--------------|-------------------------------------|
| Aguas Buenas | Humacao |
| Barranquitas | Orocovis |
| Bayamón | San Juan |
| Caguas | Santa Isabel |
| Canóvanas | Trujillo Alto |
| Carolina | Vega Alta |
| Ciales | Yabucoa |
| Corozal | Yauco |
| Gurabo | Private Schools & Homeschool Groups |

STARBASE Puerto Rico has been sponsored by the 156th Wing and housed at Muñiz ANG Base since 1995. The program has had the privilege of serving over 33,000 participants who speak Spanish as their first language. This STARBASE program is the only site on the island, which is divided into five educational regions and numerous districts, and it is the only STARBASE in the nation that teaches the curriculum in Spanish. The STARBASE Puerto Rico facility includes two classrooms and a computer lab with two 3D printers. STARBASE Puerto Rico offers participants the opportunity to meet military members from the Air National Guard whose careers actively involve STEM along with the 25 hours of hands-on, minds-on STEM activities.

FY23 Program Highlights:

- » Acquired new computers to ensure students have access to the most up to date technology and resources.
- » Continuation of STARBASE Advanced program serving two more clubs than last year.
- » Served 62 classes during their basic academies.
- » Attended and supported 19 outreach events.
- » Fostered a new collaborative party with Consilio de las Girls Scout del Caribe (Girl Scouts of America).
- » Successfully implemented iPad activities in the classroom.

CONTACT INFORMATION

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STARBASE SWAMP FOX

COLUMBIA, SOUTH CAROLINA



ESTABLISHED 2003

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: McEntire Joint National Guard Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Kershaw County School District
 Lexington County School District
 Lexington-Richland School District
 Richland School District One
 Richland School District Two
 Sumter County School District
 Private Schools

STARBASE Swamp Fox has been serving students in the surrounding area since 2003. STARBASE Swamp Fox is located with the 169th Fighter Wing at Joint Base McEntire in Eastover, South Carolina. STARBASE Swamp Fox uses hands-on, minds-on learning to raise the interest and improve the knowledge and skills of at-risk youth in science, technology, engineering, and mathematics. The program inspires students and provides a memorable experience.

FY23 Program Highlights:

- » Served 1,105 students during the 2022-2023 school year.
- » Participated and supported various community outreach events such as: Sumter School District STEM FEST, Springdale Elementary School STEM Night, and the 169th Fighter Wing Family Day.
- » Served as the special guest speaker for Doby Mills Elementary School Beta Club induction ceremony and Bookman Road's Elementary School graduation ceremony.

CONTACT INFORMATION

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STARBASE RAPID CITY

RAPID CITY, SOUTH DAKOTA



ESTABLISHED 2002 **MILITARY LOCATION: Camp Rapid**
SERVICE COMPONENT: Army National Guard **CLASSROOMS AUTHORIZED: 1**



SCHOOL DISTRICTS SERVED

Douglas School District
 Rapid City Area Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE of South Dakota, Inc.

Proudly hosted by the South Dakota National Guard on Camp Rapid in Rapid City, South Dakota, STARBASE Rapid City was established in 2002 and has been running strong for 21 years and counting. The instructors share their excitement for learning and STEM with an average of 800 local students each school year. In addition to the traditional STARBASE program, they provide two- and three-day modified STARBASE sessions for schools on the waiting list, in order to maintain relationships and serve the maximum number of students each year.

STARBASE Rapid City also has an established STARBASE Advanced after-school program that focuses on robotics and computer-aided design, with a little physics on the side. Over the years the program has grown a strong relationship with local engineering companies, such as Caterpillar and VRC Metal Systems. These companies provide engineers to volunteer as coaches for the Advanced clubs, where they mentor students in the computer-aided design software. Each student designs their own CO₂ car, prints it on a 3D printer, and then races it while evaluating its force, mass, acceleration, and design.

STARBASE Rapid City staff members also participate in a variety of community and school activities such as STEM Night, science fairs, and career days. They work in tandem with their STARBASE NOVA Honor Program that serves rural and Native American students.

FY23 Program Highlights:

- » Partnered with the South Dakota National Guard Youth Program to provide and lead activities for military students during two one-week camps held during the summer and a student activity for pre-K students during a Yellow Ribbon Activation Ceremony for military members preparing for deployment.
- » Sponsored a booth at two Women In Science events held at local universities, South Dakota School of Mines & Technology and Black Hills State University, that were well-attended with approximately 1,400 middle school girls between the two events.
- » Spent a day touring the Sanford Underground Research Facility (SURF) and further strengthened the partnership with their educational outreach program. Their goal is to provide more resources to classroom teachers as well as SURF providing STEM career demonstrations and activities for students and teachers across the state of South Dakota.

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STARBASE NOVA HONOR

RAPID CITY, SOUTH DAKOTA

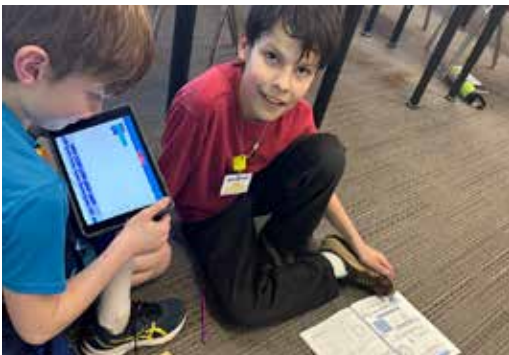


ESTABLISHED 2008

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Camp Rapid

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Cheyenne Eagle Butte School	Kadoka Area School District
Custer School District	Lead/Deadwood School District
Edgemont School District	Lyman County School District
Haakon School District	Meade School District
Harding County Schools	New Underwood School District
Hill City School District	Stanley County Public Schools
Hot Springs School District	Timber Lake School District

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE of South Dakota, Inc.

STARBASE NOVA Honor was established in 2008 and has formed strong relationships with school districts across western South Dakota. Program staff have a passion for sharing learning and loads of energy with students on Native American Indian Reservations and in rural communities across this area. Efforts are made to ensure as many classes as possible in the academic calendar are seen every school year. Instructors are typically on the road traveling to schools with a pull-behind trailer four to five days a week during the school year. The focus of STARBASE NOVA Honor is to reach as many students as possible during the school year that would otherwise not be able to have the STARBASE experience during their fifth-grade school year.

FY23 Program Highlights:

- » Partnered with local schools to support community outreach events such as Family STEM Nights and Best of STEM Days.
- » Serves 600-800 students annually.
- » Partnered with a Native American Indian Reservation School, Cheyenne Eagle Butte, to put on an exciting extension to their summer school program by providing four days of hands-on STEM activities to the students attending summer school.
- » Spent a day touring the Sanford Underground Research Facility (SURF) and further strengthened the partnership with their educational outreach program. Their goal is to provide more resources to classroom teachers as well as SURF providing STEM career demonstrations and activities for students and teachers.

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STARBASE SIOUX FALLS

SIOUX FALLS, SOUTH DAKOTA



<p>ESTABLISHED 1994</p> <p>SERVICE COMPONENT: Air National Guard</p>	<p>MILITARY LOCATION: Joe Foss Field</p> <p>CLASSROOMS AUTHORIZED: 1</p>
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SCHOOL DISTRICTS SERVED

- Falls School District
- Garretson School District
- Harrisburg School District
- Sioux Falls Lutheran Schools
- Sioux Falls School District
- Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE of South Dakota, Inc.

STARBASE Sioux Falls is the original of the four South Dakota sites, located in the southeast corner of the state. Experiencing the many STEM careers involved in flying the F-16, while being on the South Dakota Air National Guard host base at Joe Foss Field in Sioux Falls, South Dakota, STARBASE fifth graders are able to connect with military speakers and guides, some of whom went to STARBASE as fifth graders themselves!

In addition to the basic STARBASE program, a complete STARBASE Advanced program was conducted with Whittier Middle School from the Sioux Falls School District. Working with sixth through eighth graders, the after-school program explored the theme of Energy. This theme carried over into our summer military camps where we participants explored conductors, magnets, heat, and other energy concepts along with robotics and Onshape.

FY23 Program Highlights:

- » Even with a record number of snow days in the Sioux Falls Schools District, the program was able to finish all of the required (and more) regular academies.
- » Successfully converted their 3D curriculum offerings to OnShape.
- » Served 11 additional classes for two-day, Best of STARBASE programming.
- » Increased attendance for two-week supplemental summer programming.
- » Contributed extension lesson plan to DoD-approved curriculum.
- » Conducted an Advanced program at Whittier Middle School, which is a feeder school for many of their fifth graders.

CONTACT INFORMATION

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STARBASE NOVA COURAGE

STARBASE NOVA COURAGE
SIOUX FALLS, SOUTH DAKOTA



ESTABLISHED 1999

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Joe Foss Field

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Andes Central School District	Sisseton School District
Armour School District	Summit School District
Avon Shool District	Tripp-Delmont School District
Big Stone City School District	Wagner Community School District
Browns Valley Public School District	Waubay School District
De Smet School District	Webster Area Schools
Huron School District	Wilmot School District
Iroquois School District	Wolsey Wessington School District
Rosholt School District	Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE of South Dakota, Inc.

The STARBASE NOVA Courage team continues to travel the roads of South Dakota, bringing hands-on STEM lessons to Native American Indian Reservations and rural schools. With schools multiple hours away from Sioux Falls, some teachers and administrators are making a significant commitment to bring their students to experience the Air Guard base in Sioux Falls. At the 114th Fighter Wing, they experience the excitement and technology involved in life on a base with F-16 jets.

FY23 Program Highlights:

- » Completed 31 classes, even with over 10 snow days at most of the schools they serve.
- » Traveled over 8,000 miles to serve the reservation and rural communities of eastern South Dakota.
- » Overcame the technology barriers of serving 15 different schools, while safely moving the supply trailer to every school.
- » Increased the number of schools attending a two-hour session at the Air National Guard base in Sioux Falls, even though it was at least a 90 minute drive each way.
- » Conducted an Advanced program in one of the rural communities that is served.

CONTACT INFORMATION

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STARBASE AUSTIN

AUSTIN, TEXAS

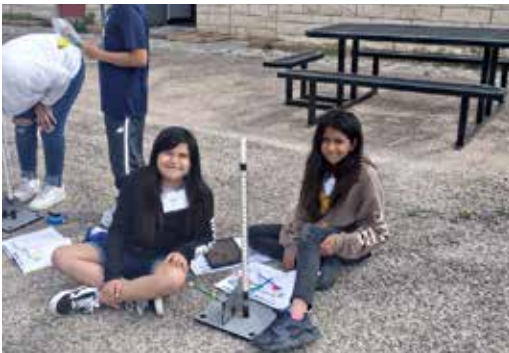


ESTABLISHED 2012

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Camp Mabry

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Austin Independent School District
Del Valle Independent School District
Hays Consolidated Independent School District
Hutto Independent School District
Lockhart Independent School District
Pflugerville Independent School District
Round Rock Independent School District
Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Texas STARBASE Inc.

Hosted by the Texas Military Department at Camp Mabry, STARBASE Austin challenges K-12 students to participate in hands-on, minds-on STEM activities and to investigate how STEM could be used in potential military or civilian careers.

Through partnerships with local school districts, STEM partners, and military members, the Austin STARBASE Advanced program also brings opportunities to underserved students and local community members. This past year, the program participants at one middle school got to display their achievements at South by Southwest EDU (SXSW EDU) after working with STEM partners to strengthen their robotic engineering and coding skills.

FY23 Program Highlights:

- » Initiated our first American Rocketry Challenge STARBASE Advanced program with SF Austin High School.
- » Hosted several thousand students at our booth during the University of Texas Girl Day STEM event.
- » Successfully transitioned from Windows PCs to ChromeOS for all basic program classroom instruction.
- » Partnered with the Extend-a-Care Kids Program and the YMCA of Greater Austin to conduct eight summer camps at various local campuses.

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STARBASE GOODFELLOW

SAN ANGELO, TEXAS



ESTABLISHED 2017

SERVICE COMPONENT: Air Force

MILITARY LOCATION: Goodfellow Air Force Base

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Bronte Independent School District	Olfen Independent School District
Christoval Independent School District	San Angelo Independent School District
Grape Creek Independent School District	Veribest Independent School District
Irion County Independent School District	Wall Independent School District
Miles Independent School District	Private Schools & Homeschool Groups

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Texas STARBASE Inc.

Texas STARBASE Goodfellow has been serving students in San Angelo and Tom Green County in West Texas since 2017. STARBASE Goodfellow is hosted by the 17th Training Wing at Goodfellow Air Force Base and through a partnership agreement with the San Angelo Museum of Fine Arts. After six years in operation, STARBASE Goodfellow has served over 8,500 students from 32 schools in 15 different districts. STARBASE Goodfellow also conducts STARBASE Advanced after-school programs with local participating schools.

FY23 Program Highlights:

- » Successfully piloted Advanced Drone Technology Program with San Angelo Independent School District's Lincoln Middle School.
- » Converted a 500-square-foot lunch area into an Information Technology Lab Center.
- » Participated in 11 community outreach events during FY23.
- » Recognized by the 17th Mission Support Group Commander for accomplishments in Basic and Advanced STARBASE STEM Academies.
- » Engineered and executed first-ever 3-D Printing Summer Camp for fifth through seventh graders—a huge success with parents and 20 graduates!
- » Received Excellent Rating in first-ever DoD Resource Management Inspection, overruling 30 critical core items with zero write-ups.
- » Renewed partnership with base and local non-profit, which was a huge win for STARBASE and over 30 participating schools in the local area for another five years!

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TEXAS STARBASE HOUSTON

HOUSTON, TEXAS



ESTABLISHED 1994 **MILITARY LOCATION: Ellington Field Joint Reserve Base**
SERVICE COMPONENT: Air National Guard **CLASSROOMS AUTHORIZED: 2**



SCHOOL DISTRICTS SERVED

- Galena Park Independent School District
- Houston Independent School District
- Humble Independent School District
- La Porte Independent School District
- Pasadena Independent School District
- Sheldon Independent School District
- Private School & Homeschool Groups

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Texas STARBASE Inc.

Texas STARBASE Houston has reached over 30,000 students since its first class over 28 years ago. STARBASE Houston is a double classroom site that currently serves districts and schools in the Houston/Galveston area. Fifth-grade students learn STEM lessons at Ellington Field while sixth graders investigate forensics during the Advanced after-school program at their participating schools. All curriculum is aligned with national and state standards. Partnerships include: US Air Force, US Army, USO Houston, Coast Guard Houston, Houston Museum of Natural Science, Lone STAR Flight Museum and the 147th Fire Department. These partners provide STARBASE students with tours, summer camp sponsorships, and simulation experiences, to name a few. Going into year 29, the program's goal is to expand this site in order to reach more students.

FY23 Program Highlights:

- » Provided outreach support to 11 events with participating schools that include STEM Nights and science fairs.
- » Despite building renovations, STARBASE Houston staff members were able to continue classes and program requirements at an alternative location on base.
- » Re-established the two-decade partnership with the Houston Museum of Natural Science that supports the program at Ellington Field and covers the STEM career portion of the required DoD curriculum.
- » Completed setup of all classrooms and will resume classes in building 1055 after renovations.
- » Increased the number of Advanced programs to five clubs this year.

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STARBASE KELLY

SAN ANTONIO, TEXAS



ESTABLISHED 1995

SERVICE COMPONENT: Air Force Reserve

MILITARY LOCATION: Joint Base San Antonio-Lackland

CLASSROOMS AUTHORIZED: 1



SCHOOL DISTRICTS SERVED

Edgewood Independent School
Southwest Independent School District
Private Schools

STARBASE Kelly is located on Kelly Field at Joint Base San Antonio-Lackland and is sponsored by the 433rd Airlift Wing. Having proudly served San Antonio and the surrounding areas since 1994, STARBASE Kelly's presence in the local area is strong as a participating member of the Alamo STEM Ecosystem. When a student is welcomed to STARBASE Kelly, they're immediately guided to an enriching, inspiring, and positive environment.

Chants of the STARBASE Kelly Classroom motto, "I believe in working hard, having fun, and that today is the best day of my entire life!" fill the facility every morning, and the kids are ready to get their hands on the activities for the day! Each and every STARBASE Kelly student has the opportunity to see an incredibly exciting potential future for themselves as they sit in the flight deck of the United States military's largest cargo plane, the C5 Galaxy. Loadmasters, pilots, and engineers take them from nose to tail, teaching them about forces of flight, the importance of math in their careers, and what day-to-day military life is like.

Inside the classroom, the students also get to meet many of our diverse groups of mentors who eat lunch with the kids, participate in activities, and have even been known to team teach with our educators. Once the school day has ended, their team packs up and heads out to the after-school STARBASE Advanced program campuses. This year, six campuses spent 10 weeks immersed in STEM, leadership, and project management activities, as they planned and executed the first-ever San Antonio Archdiocese Family STEM Night. Families from all over the city participated in activities and demonstrations, planned 100% by the STARBASE Kelly Advanced students. It was a phenomenal year, and they can't wait to see what FY24 has in store!

FY23 Program Highlights:

- » More than doubled their required community outreach activities during FY23.
- » Welcomed more than 20 active duty and reserve volunteers into their facility as classroom mentors.
- » Continues to be an active, participating member of the Alamo STEM Ecosystem.
- » Selected to host 12 Teacher Externs during a summer STEM externship experience.

CONTACT INFORMATION

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STARBASE HILL

LAYTON, UTAH



ESTABLISHED 2011 **MILITARY LOCATION: Hill Air Force Base**
SERVICE COMPONENT: Air Force **CLASSROOMS AUTHORIZED: 3**



SCHOOL DISTRICTS SERVED

- | | |
|------------------------------|--------------------------------|
| Davis School District | Salt Lake City School District |
| North Summit School District | Weber School District |
| Ogden School District | Private Schools |

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

Davis Education Foundation

The STARBASE Hill program first opened its doors at Hill Air Force Base (HAFB) in the fall of 2011 and has maintained the reputation of a premier science, technology, engineering, and mathematics (STEM) academy for the students of Utah. From the day STARBASE Hill began serving the youth of Utah, Hill AFB has welcomed more than 20,000 students through its gates. It is an educational titan on HAFB amongst the Air Force goliaths known as the Ogden Air Logistics Center and the 75th Air Base Wing,

STARBASE Hill extends STEM activities and military immersion to more than 2,500 students annually in northern Utah. With the academy successes, the STARBASE Hill Advanced program completed 19 after-school clubs, enthusing more than 200 students in STEM extension courses. Now educating five school districts, three parochial schools, and one charter school, STARBASE Hill looks to continually expand in the future, so even more Utah students will benefit from the preeminent STEM education offered on Hill AFB.

FY23 Program Highlights:

- » Provided enhanced STEM education to over 2,600 students during the 2022-2023 school year.
- » Provided the backdrop for an Air Force Recruiting Command commercial shot; the STARBASE Hill Academy campus was highlighted to over 2.5M viewers on a national spot.
- » Hosted a tour for Mrs. Natalie Hawkins, wife of Lt Gen Stacey Hawkins, Commander of the Air Force Sustainment Center, of the academy campus and had her experience the activities and experiment with the students.
- » Featured in *VoyageUtah* online magazine for the November 2022 edition.
- » Provided services to 48 schools through the Basic and Advanced programs, enhancing program awareness to all of northern Utah, and expanding the reach of the program through the addition of a district serving the major metropolitan area of Salt Lake City and the first rural district in North Summit, Utah.
- » Completed 19 after-school programs and two summer camps strengthening the Air Force STEM pipeline in Utah.

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STARBASE VERMONT- RUTLAND

RUTLAND, VERMONT



ESTABLISHED 2002

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Vermont Armed Forces Reserve Center

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Addison Central School District	Slate Valley Unified School District
Battenkill Valley Supervisory Union	Southwest Vermont Supervisory Union
Bennington-Rutland Supervisory Union	Two Rivers Supervisory Union
Greater Rutland County Supervisory Union	Wells Springs Unified School District
Mills River Unified Union School District	White River Unified School District
Orange Southwest School District	Windham Central Supervisory Union
Rutland City School District	Windsor Central Supervisory Union
Rutland Northeast Supervisory Union	Private Schools

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Vermont, Inc.

STARBASE Vermont's Rutland site has been at the forefront of STEM education for more than 20 years. Sponsored by the 158th Fighter Wing of the Vermont Air National Guard and supported by the STARBASE Vermont, Inc. (501c3) nonprofit, the Rutland site reaches students throughout southern Vermont. The program uses hands-on, minds-on learning to ignite a passion for learning that is empowering the innovators of tomorrow.

FY23 Program Highlights:

- » Fully implemented iPads in the classroom, converting from paper logbooks.
- » Established collaborative partnership with local Boys & Girls Clubs.
- » Implemented three new approved lessons.
- » Took responsibility for teaching robotics lessons to advanced high school programs and worked directly with the development team.
- » Ran 20 hour Advanced program with middle school students.
- » Developed a newsletter with site-specific information for distribution.

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STARBASE VERMONT- SOUTH BURLINGTON

SOUTH BURLINGTON, VERMONT



ESTABLISHED 1993
SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Vermont Air National Guard Base
CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Addison Northwest Supervisory Union
Burlington School District
Caledonia Central Supervisory Union
Champlain Valley School District
Essex Town School District
Franklin Northeast Supervisory Union

Franklin West Supervisory Union
Grand Isle Supervisory Union
Lamoille North Supervisory Union
Missisquoi Valley School District
Washington South School District
Winooski School District

SUPPORTING NOT-FOR-PROFIT ORGANIZATION

STARBASE Vermont, Inc.

STARBASE Vermont's South Burlington site has been at the forefront of STEM education for more than 30 years. Sponsored by the 158th Fighter Wing of the Vermont Air National Guard and supported by the STARBASE Vermont, Inc. (501c3) nonprofit, the South Burlington site reaches students throughout northern Vermont. The program uses hands-on, minds-on learning to ignite a passion for learning that is empowering the innovators of tomorrow.

FY23 Program Highlights:

- » Mentored instructors from new program sites to help them prepare for their STARBASE program.
- » Submitted a lesson plan for approval into the DoD STARBASE curriculum.
- » Took responsibility for teaching robotics lessons to Advanced high school programs.
- » Transitioned to iPad use full-time in the classroom, converting from paper log books.
- » Collaborated with two new technology partners, ESRI and Collins Aerospace to further enhance the program.
- » Worked with Estes to modify the STARBASE Starcruiser to make it easier to build.

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WINCHESTER STARBASE ACADEMY

WINCHESTER, VIRGINIA



ESTABLISHED 2012

SERVICE COMPONENT: Army National Guard

MILITARY LOCATION: Winchester Readiness Center

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Clarke County Public Schools
Frederick County Public Schools

Winchester Public Schools
Private Schools

The Winchester STARBASE Academy is an exciting educational opportunity for children of the Shenandoah Valley Region. The mission is to engage and inspire at-risk students who are traditionally underrepresented in the STEM field. The hands-on lessons are authentic, problem-based, and encourage the attainment of important skills that are required for a Virginia graduate. These skills include the 5 Cs: critical thinking, creative thinking, collaboration, communication, and citizenship. A future in STEM is encouraged with every lesson taught and through interactions with military personnel and community STEM professionals.

The program has a dedicated group of Army National Guard soldiers that speak to their students and lead a tour of the facility. Most of their participating students have no personal knowledge of the military, which makes this interaction so exciting for them. The STEM professionals volunteer their time and talents with their students and are a vital piece of the program. This year, students interacted with nurses, doctors, engineers, computer programmers, aerospace employees, chemists, the Army Corps of Engineers, police and Fire Marshal canine trainers, and the Winchester Regional Airport. It is so important to show these young students the possibilities for their future before entering middle school.

FY23 Program Highlights:

- » Held an Advanced program at James Wood Middle School with sixth-grade students, engaging students in a variety of engineering and technology activities: egg drop, STEAM littleBits art drawing machine, robotics, and drones.
- » Worked collaboratively with seven other STARBASE programs to implement a program for Marine Corp JROTC cadets.
- » Partnered with The Kids Clubs of the Northern Shenandoah to become "Reading Buddies" with children aged six to eight to encourage literacy.
- » Provided activities at the Virginia National Guard Youth Camp for children aged eight to twelve and to high school students that attend the Virginia Challenge program.
- » Participated in a Girls in Aviation Day at the Winchester Regional Airport. Met and led a rocketry activity with girls aged nine to fourteen.
- » Led STEM instructional development for Shenandoah University elementary education students, demonstrating effective instructional methods that encourage fun while learning.

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WEST VIRGINIA STARBASE CHARLESTON

CHARLESTON, WEST VIRGINIA



ESTABLISHED 2001

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: McLaughlin Air National Guard Base

CLASSROOMS AUTHORIZED: 3



SCHOOL DISTRICTS SERVED

Putnam County School District
Kanawha County School District

West Virginia (WV) STARBASE Charleston is located on the West Virginia National Guard Joint Force Base in Charleston, WV. WV STARBASE Charleston has been able to serve the local public and private schools for 22 years, providing an engaging “hands-on, minds-on” science, technology, engineering, and mathematics (STEM) curriculum. STARBASE Charleston operates three classrooms across the entirety of the base—one embedded with the Army State Headquarters and two with the 130th Airlift Wing. They serve over 2,000 local fifth-grade students from diverse socio-economic backgrounds. They are fully partnered and committed to both the West Virginia Army and Air Guard Family Readiness and Child and Youth Programs. The program’s presence is felt throughout the central and southern areas of the great state of West Virginia.

FY23 Program Highlights:

- » Implemented a new program of instruction for the school year in order to provide a cutting-edge curriculum that best meets the needs of their students.
- » Increased footprint in adjacent county with the addition of two new schools.
- » Hosted their parent county’s elementary, middle, and high school robotics and drone competitions, with their sponsored team going on to compete at the World Championship Competition.
- » Provided STEM instruction to their sister program, Mountaineer Challenge Academy-South, reaching over 120 students.
- » Left the confines of the headquarters facility to provide a STEM supplemental program at two remote armories, reaching a whole new demographic of military dependents that would otherwise never have such an opportunity, thus extending our district by two additional counties.
- » Completed their first resource management site evaluation with compliance in all categories.

CONTACT INFORMATION

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STARBASE MARTINSBURG

MARTINSBURG, WEST VIRGINIA



ESTABLISHED 2003

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: Shepherd Field Air National Guard Base

CLASSROOMS AUTHORIZED: 3



SCHOOL DISTRICTS SERVED

Berkeley County Public Schools
Greencastle-Antrim School District
Jefferson County Public Schools

Morgan County Public Schools
Private Schools

STARBASE Martinsburg has been igniting student STEM passions in the eastern panhandle of West Virginia (WV) since 2003. Located at the 167th Airlift Wing in Martinsburg, WV, STARBASE Martinsburg strives to connect with and positively impact every single student that walks through the door. The STARBASE site in Martinsburg simultaneously runs three classes daily to provide the 25-hour curriculum to every fifth grade student in the surrounding school districts—over 2,000 students each year. STARBASE Martinsburg also provides an after-school program, STARBASE Advanced, to area middle schools. This mentor-based program is designed to further fan the initial spark that the standard 25-hour program ignites with hands-on STEM activities and challenges.

STARBASE Martinsburg's newest adventure, STARBASE Beyond, reaches into high school. This is an exciting opportunity to foster that STEM spark even further into students' education. This year, STARBASE Martinsburg was able once again to partner with other STARBASE sites across the United States to develop curriculum and participate in a Cyber STEM Camp with Marine Corps JROTC cadets at Fork Union Military Academy. STARBASE Martinsburg also hosted a community-wide STEM Night with about 30 vendors and over 500 attendees. This upcoming school year marks STARBASE Martinsburg's 21st year in operation. Oh, the amazing places DoD STARBASE will continue to go to engage and inspire STEM Education!

FY23 Program Highlights:

- » Extended districts served with an additional county, and private schools served with an additional academy.
- » Hosted a DoD STARBASE Directors Launch Training for new directors.
- » Provided instructor training for a brand new DoD STARBASE site in Fort Drum, New York.
- » Held a community-wide STEM Night with over 30 vendors and over 500 attendees.
- » Worked collaboratively with eight other STARBASE programs to implement a program for Marine Corps JROTC cadets. The STARBASE team met and delivered the program virtually to cadets across the country at XCorp, a technology company near Quantico, VA.
- » Provided STEM education in partnership with Shepherd University to girls in science as part of the "Seeding Your Future" initiative.

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STARBASE WISCONSIN

MILWAUKEE, WISCONSIN



ESTABLISHED 2011

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: US Army Reserve Center

CLASSROOMS AUTHORIZED: 3



SCHOOL DISTRICTS SERVED

Milwaukee Public Schools

STARBASE Wisconsin is proudly sponsored by the Wisconsin Air National Guard and supported by the 128th Air Refueling Squadron. Housed at the U.S. Army Reserve Training Center in Milwaukee, the program has been serving the students in Milwaukee Public Schools since 2011. STARBASE Wisconsin is dedicated to the mission of reaching underrepresented students through an interactive hands-on educational program. Their goal is to increase students' knowledge, skills, and interest in the five disciplines of STEAM through experiments, investigations, and real-world applications, stimulating young minds to explore the vast STEAM careers that will transform our world.

The program's partnership with the Wisconsin Bureau of Aeronautics-Aviation Careers Enhancement summer program continues. Their new summer Forensic Science, Rocketry, and Robotics-centric programs were a great success with students diving deeper into topics they didn't have time for during the school year. They were also proud to continue their STARBASE Advanced Aviation program in middle schools, bringing to light the aviation-rich opportunities Wisconsin has to offer as this state is home to the Experimental Aircraft Association (EAA). Their aviation flight simulation program is a big hit among students of all ages. The staff looks forward to continuing their successes with Milwaukee students and expanding the program's outreach.

FY23 Program Highlights:

- » Served 1,933 students in basic and supplemental programs during the 2022-2023 school year, and recently expanded into a third classroom.
- » Participated as speakers at two fifth-grade graduation ceremonies.
- » Provided flight simulation instruction for young women at the Girls in Aviation event in the fall at Timmerman Airport in Milwaukee County.
- » Expanded beyond the local scouting STEAM programs to include the Southeast Wisconsin Girls in Aviation organization that holds aviation rallies several times a year, attracting an average of 50-60 female participants.
- » Discussed STEAM careers in aviation and provided a flight simulator experience for youth participating in the Aviation Careers Education (ACE), a Wisconsin Department of Transportation Aviation Bureau program providing summer employment and learning opportunities for high school students in Milwaukee.

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STARBASE WYOMING

CHEYENNE, WYOMING



ESTABLISHED 1994

SERVICE COMPONENT: Air National Guard

MILITARY LOCATION: John Raper Armory

CLASSROOMS AUTHORIZED: 2



SCHOOL DISTRICTS SERVED

Laramie County School District I

Laramie County School District II

Private Schools

Wyoming STARBASE Academy is a DoD youth program operated in partnership with the Wyoming National Guard and Wyoming Military Department, and it has been in operation since 1994. The program is located in Cheyenne, Wyoming, at the Raper Armory. Their mission is to expose the nation's youth to the technological environments and positive civilian and military experiences that encourages them to explore STEM education and careers through hands-on instruction and activities that meet or exceed the national standards.

The Wyoming STARBASE program serves fifth-grade public, private, and home-school students in Laramie County, Wyoming. Through teamwork, students participate in challenging "hands-on, mind-on" activities in science, technology, engineering, and mathematics (STEM). Students also interact with military personnel to explore careers and make connections with the real world.

Wyoming STARBASE activities include several hands-on science labs, activities centered on the Engineering Design Process, mapping activities with maps specifically designed for the STARBASE program by the National Geospatial-Intelligence Agency, designing and launching straw rockets, and working with computer-aided design software. The academy focuses on serving student groups that are historically under-represented in STEM careers. Volunteers from the base are an integral part of the STEM career activities and explorations they make available for student participants.

FY23 Program Highlights:

- » Completed their first full year of Advanced programming.
- » Judged the city "We the People" competitions and the school district robotic competition.
- » Presented at the annual principal meeting to generate interest in the STARBASE Program.
- » Conducted a four-day STEAM camp on the Fort Washakie Native Reservation with the Eastern Shoshone Tribe students.
- » Brought STEAM Enrichment to the Laramie County Boys and Girls Club.
- » Completed their 28th year as a successful program.

CONTACT INFORMATION

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“My time with STARBASE was a phenomenal experience. I love the enthusiasm the staff has to teach and the excitement the kids have to learn. I truly enjoyed all the hands-on activities, which included a rocket launch, building a robot, and making electrical circuits. Each project was mentally stimulating, but extremely fun at the same time. STARBASE at Davis-Monthan has a great thing going, and it is on full display with every graduating class! I am happy to be a part of the STARBASE family!”

- MSGT CHRISTOPHER DOSHIER,
355TH COMMAND CHIEF
EXECUTIVE ASSISTANT,
STARBASE ARIZONA

APPENDIX



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

DoD STARBASE Student POST Assessment 2022-2023

Click on the circle next to the answer you think is best.

1. Which one of Newton's Laws explains why it is important to wear a seat belt in a moving car?
- First Law of Motion - an object in motion will stay in motion unless acted upon by an outside force.
 - Second Law of Motion - acceleration of an object increases as the amount of force increases.
 - Third Law of Motion - for every action there is an equal and opposite reaction.
 - Law of Gravity - an object attracts another object in direct proportion to their combined mass.

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Click on the circle next to the answer you think is best.

2. Your robot traveled 60 meters out of a total distance of 300 meters. What percent of the total distance did the robot travel?
- 15%
 - 20%
 - 40%
 - 50%

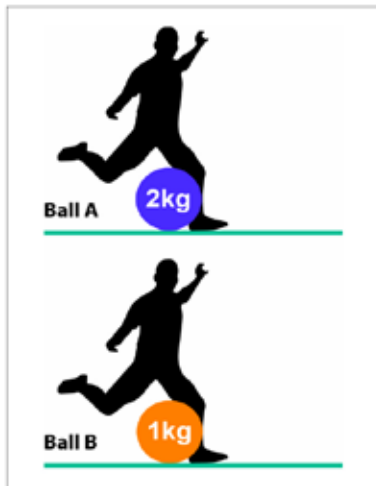
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Click on the circle next to the answer you think is best.

3. An Engineering team meets for the first time. Which step of the Engineering Design Process will they do first?
- Make a list of requirements.
 - Brainstorm solutions.
 - Make a hypothesis.
 - Define a problem.

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Click on the circle next to the answer you think is best.



4. What will happen if Ball A and Ball B are kicked with the same amount of force?
- Ball A will roll farther.
 - Ball B will roll farther.
 - They will roll the same distance.
 - The distance cannot be predicted.

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DoD STARBASE Student POST Assessment 2022-2023, cont.

Click on the circle next to the answer you think is best.

5. Which states of matter are fluids?

- Liquid and gas
- Gas and solid
- Solid and liquid
- Solid, liquid, and gas

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Click on the circle next to the answer you think is best.

6. Sodium and chloride bond to form salt (NaCl). What does this bonded substance represent?

- An element
- An atom
- A compound
- A cell

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Click on the circle next to the answer you think is best.

7. How does Computer-Aided Design (CAD) software communicate ideas between people?

- Text-to-speech describes design ideas for people to hear.
- The program learns your design idea and draws needed parts on its own to show.
- It displays design ideas to share and explore a visual model.
- It creates videos of design ideas to watch.

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Click on the circle next to the answer you think is best.

8. Which of the following are equivalent numbers?

- $7/100$, 7%, 0.07
- 0.07, 7%, $7/1000$
- 70%, 0.7, $7/100$
- 0.7, $70/100$, 7%

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Click on the circle next to the answer you think is best.

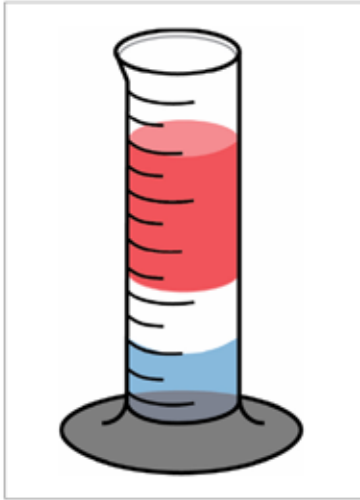
9. Which of the following describes a transfer of energy in a chemical reaction?

- The noise a balloon makes when it is popped.
- The pressure applied to a scissor handle when cutting paper.
- The temperature change when freezing ice cream.
- The light made by a glow stick when bent and shaken.

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DoD STARBASE Student POST Assessment 2022-2023, cont.

Click on the circle next to the answer you think is best.



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10. Three different liquids were poured into a graduated cylinder. From the picture, what can you conclude about the densities of the liquids?

- The blue liquid is the least dense.
- The white liquid is the least dense.
- The red liquid is the least dense.
- They are all of equal density.

Click on the circle next to the answer you think is best.

11. When you sprain an ankle, you need to apply an activated cold compress to relieve the swelling. Which reaction does the activated cold compress produce?

- Hydrophobic
- Endothermic
- Exothermic
- Hydrophilic

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Click on the circle next to the answer you think is best.

12. Which of the following states of matter has the least amount of kinetic energy?

- Solid
- Liquid
- Gas
- Plasma

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Click on the circle next to the answer you think is best.

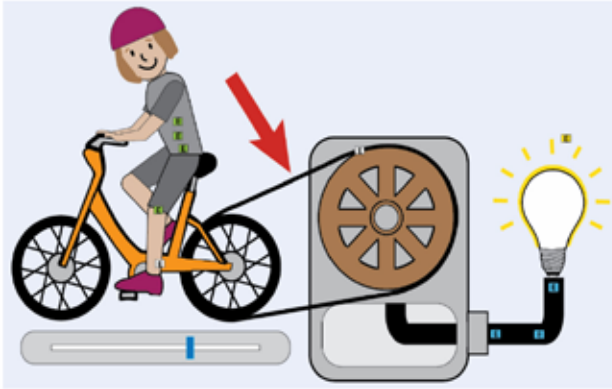
13. Computer-Aided Design (CAD) software allows a user to view designs:

- In 2-dimensions
- In 3-dimensions
- In 4-dimensions
- As a finished manufactured product

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DoD STARBASE Student POST Assessment 2022-2023, cont.

Click on the circle next to the answer you think is best.

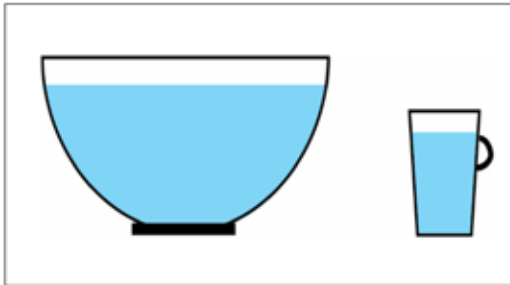


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14. Which energy change occurs in the generator (brown wheel)?

- Mechanical to electrical
- Heat to light
- Light to chemical
- Chemical to mechanical

Click on the circle next to the answer you think is best.



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15. A small cup and a large bowl are filled with water. What is the same about the water in each container?

- Mass
- Shape
- Volume
- Density

Click on the circle next to the answer you think is best.

16. Which of the following is an example of physical change?

- Baking soda and vinegar mix and produce bubbles and foam.
- A glass falls on the floor and shatters.
- Paper burns and produces smoke and ash.
- Batter is baked to make a cake.

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Click on the circle next to the answer you think is best.

17. The make-up of air in our atmosphere is 78% nitrogen, 21% oxygen and 1% other gases.

Which type of graph would be best touse to display this data?

- Line Graph
- Coordinate Plane
- Bar Graph
- Pie Graph

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DoD STARBASE Student POST Assessment 2022-2023, cont.

Click on the circle next to the answer you think is best.

18. You are using a graduated cylinder to measure the volume of a liquid in a bottle.
Which unit of measurement are you most likely to use?
- Grams
 - Microns
 - Milliliters
 - Centimeters

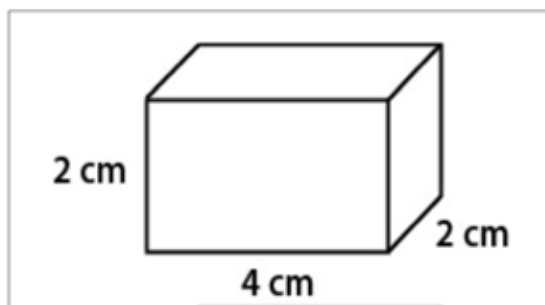
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Click on the circle next to the answer you think is best.

19. Which of the following are examples of new technologies that solve real problems in the world today?
- A farmer using GPS to plant crops.
 - A doctor using a 3D printer model for practice before performing surgery.
 - Robots used in places that are unsafe for humans.
 - All of the above.

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Click on the circle next to the answer you think is best.



20. What is the volume of the box?

- 6 cm^2
- 8 cm^3
- 16 cm^3
- 8 cm^2

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GLOSSARY

Academy: See DoD STARBASE Academy.

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

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

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

At-Risk: Being “at-risk” means having one or more family background, or other factors, that have been found to predict a high rate of school failure at some time in the future. This “failure” generally refers to dropping out of high school before graduation but can also 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: Youth 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 Cs or lower grades, being from a low socioeconomic status family, or repeating an earlier grade.

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

Class: Within the context of a DoD STARBASE Academy, a class is a grouping of students. This group may not necessarily have been a homogenous entity prior to DoD STARBASE instruction; it may be a temporary grouping only for the purposes of assembling for the 25-hour minimum period of DoD STARBASE instruction.

Classroom Contact Hour: A period of 60 minutes, plus or minus five 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 science, technology, engineering, and mathematics to the students.

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

Coach: An experienced adult providing support, training, and guidance to a student in achieving a specific goal.

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

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

Current Expenditures: Expenditures for operating DoD STARBASE Academies, excluding capital outlay. These expenditures include such items as staff salaries, facilities, staff travel, supplies, equipment, contract services, and public relations/outreach.

Demographics: See Ethnicity/Race.

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

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

Glossary, CONTINUED

DoD: Department of Defense.

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

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

DoD STARBASE Academy: A DoD educational program designed to improve the knowledge and skills of students in kindergarten through 12th grade in mathematics, science, and technology. It follows the academy model description in DoDI 1025.07.

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

SCIENCE

- A. Science Fundamentals
- B. Characteristic Properties
- C. Motion & Force
- D. Science Explorations

TECHNOLOGY

- A. Applying Technology

ENGINEERING

- A. Engineering Design Process
- B. 3-D Computer-Aided Design

ARTS & DESIGN

MATHEMATICS

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

SCIENCE, TECHNOLOGY, ENGINEERING, & MATHEMATICS, ART and DESIGN (STEAM) CAREERS

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

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

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

DoD STARBASE Advanced 2.0 Program: A unique school-based program targeting at-risk sixth to eighth graders occurring outside of normal school hours. The program takes place in partnering schools expressing the desire for additional DoD STARBASE program resources.

DoD STARBASE Advanced 3.0 Program: A pilot program in development to encompass grades 9-12 outside of normal school hours while forming partnerships with JROTC cadets and high school students, with collaboration among STARBASE locations to fully extend the authority of Title 10 U.S. Code Section 2139b culminating in the STARBASE program's reach from kindergarten to high school.

DoE: Department of Education.

Glossary, CONTINUED

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

Elementary School: A school with one or more of grades K–6 that does not have any grade higher than grade 8.

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.

Engineering: The discipline dealing with the art or science of applying scientific knowledge to practical problems. Engineering is the use of scientific principles to design and build machines, structures, and other items, including bridges, tunnels, roads, vehicles, and buildings. The discipline of engineering encompasses a broad range of more specialized fields of engineering, each with a more specific emphasis on particular areas of applied mathematics, applied science, and types of application.

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

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

Expenditures: Charges incurred, whether paid or unpaid.

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

Fiscal Year (FY): The yearly accounting period for the federal government, which begins on October 1 and ends on the following September 30. The fiscal year is designated by the calendar year in which it ends; for example, fiscal year 2021 begins on October 1, 2020, and ends on September 30, 2021.

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

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

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

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

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

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

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

Instructor: DoD STARBASE educator.

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

Location: See DoD STARBASE Site/Location.

Glossary, CONTINUED

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

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

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

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

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

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 childcare centers. To be eligible for free lunch, a student must be from a household with an income at or below 130 percent of the federal poverty guideline; to be eligible for reduced-price lunch, a student must be from a household with an income between 130 percent and 185 percent of the federal poverty guideline.

Native American: See American Indian or Alaska Native.

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

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

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

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

Onshape: A computer-aided design (CAD) software system delivered over the internet. The cloud-based application allows for solid modeling, assembly modeling, and drafting. The Onshape CAD system allows multiple users to access and work on a single design concurrently over the cloud using any computer, tablet, or phone.

Operational Academies: An academy that is processing students.

Outreach: Providing services to any populations who might not otherwise have access to those services. A key component of outreach is that the groups providing it are not stationary, but mobile; in other words, they are meeting those in need of outreach services at the locations where those in need are located. In addition to delivering services, outreach has an educational role, raising the awareness of existing services. It includes identification of underserved population and referral to services.

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

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

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

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

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

Glossary, CONTINUED

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

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

Rural Location: All population, housing, and territory not included within an urbanized area. Whatever is not urban is considered rural.

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

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 (SY): The period of time during which a school system operates, typically beginning on July 1st and ending on June 30th of the following year.

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

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

Site: See DoD STARBASE Site/Location.

Socio-Economic Disadvantage(d): 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.

STARBASE U: The DoD STARBASE online learning management system where resources and training materials are made available to program staff.

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

STEAM Careers: Account for over six percent of all U.S. jobs. The acronym refers to science, technology, engineering, art and design, and mathematics, and includes careers in physical and life sciences, computer science, mathematics, and engineering. Many employment experts include health professions, health technology, and social sciences under this umbrella as well.

Supplemental Programs: These are programs that for one reason or another (e.g. below minimum hours, do not cover the core curriculum areas, etc.) do not meet DoDI standards. They are often conducted during the summer months and may be 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 other groups of children. 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.

Glossary, CONTINUED

Teacher Certification: License granted by states for teachers to teach a given subject. These vary by state but generally include: obtaining a bachelor's degree; completing a teacher preparation program, which includes either an undergraduate, master's, or alternative program; getting state or national certification to teach by completing all requirements.

Technology: The sum of techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation. Technology can be the knowledge of techniques, processes, and the like, or it can be embedded in machines to allow for operation without detailed knowledge of their workings. Systems applying technology by taking an input, changing it according to the system's use, and then producing an outcome are referred to as technology systems or technological systems.

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

Underrepresented/Underserved Students: Any student who belongs to a group that has been historically underrepresented in various contexts, and who lacks access to computers and the internet. Historically, this has included American youth from low-income families, live in rural communities, have limited education, or are members of racial groups or considered ethnic minorities.

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

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

Volunteer: A person who freely offers to take part in an enterprise or undertake a task.

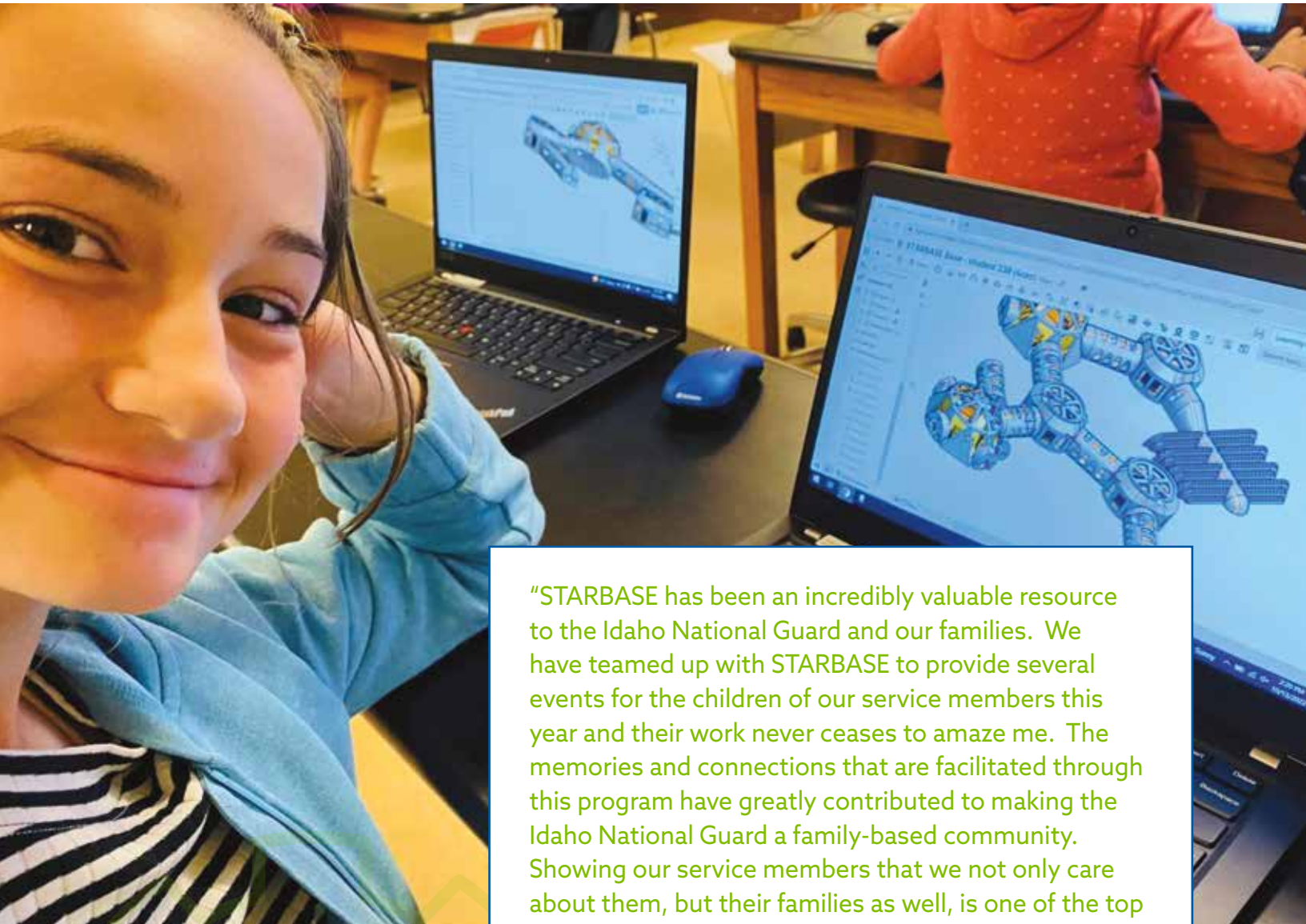
White: A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.



"It made me rethink STEM, and it sparked my imagination for what I could do."

- ELANA, STUDENT AT ST. CHARLES BORROMEO SCHOOL, ATTENDING STARBASE FORT WAYNE





"STARBASE has been an incredibly valuable resource to the Idaho National Guard and our families. We have teamed up with STARBASE to provide several events for the children of our service members this year and their work never ceases to amaze me. The memories and connections that are facilitated through this program have greatly contributed to making the Idaho National Guard a family-based community. Showing our service members that we not only care about them, but their families as well, is one of the top priorities of our organization. The partnership that we have created with STARBASE has continued to move us toward that goal. We look forward to the continued collaboration between STARBASE and the Idaho National Guard."

- FIRST LIEUTENANT JOSHUA J. SEWARD, IDAHO NATIONAL GUARD J9
STATE FAMILY PROGRAMS DIRECTOR, STARBASE IDAHO



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