

News from the field of the premiere DoD Youth STEAM education program.

## DoD STARBASE New Mexico Celebrates 20th Anniversary



In 2003, a noteworthy initiative began in New Mexico that would shape the educational experiences of over twenty thousand 5th graders and hundreds of middle and high school students over the next two decades. It all started with the vision from the Air Force Research Laboratory in New Mexico (AFRL NM) at Kirtland AFB which believes there is a significant relationship between workforce development and STEM Education. AFRL NM had an existing STEM Outreach program, and when they met with the Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs, (OASD M&RA) about adding the National and established STEM efforts of DoD STARBASE, it was a natural fit. DoD STARBASE NM became the nation's first Active-Duty Air Force site. The official ribbon-cutting ceremony took place in 2004.

Initially, the program operated from a single dedicated classroom, where 5th-grade students attended an engaging 25 hours of STARBASE classes. Over the years, the program expanded its reach, introducing STARBASE 2.0 in 2011, catering specifically to middle school students pairing up with scientists and engineers from Kirtland AFB as mentors to student teams exploring rocketry. Subsequent years witnessed significant growth and development. In 2020 at the height of the pandemic, another middle school was added to the STARBASE NM 2.0 program. By 2021, STARBASE NM was able to add another permanent classroom to serve the basic STARBASE program for 5th grade.

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“The first day of school is a blank page in the journey of education.”

-- Unknown

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The year 2022 brought further expansion with a third classroom funded through OASD, enabling us to accommodate more students and classes than ever before. This same year, DoD STARBASE NM established a STARBASE 3.0 program with Space Force JROTC at Del Norte High School, illustrating our commitment to extending STEM education opportunities beyond the elementary level.

Today, DoD STARBASE NM stands as a beacon of STEM education, annually welcoming over 2,200 enthusiastic fifth graders. The program's success is a testament to the dedication of our educators, the support of our community partners, and the unwavering commitment of the Department of Defense to nurturing future innovators.

On 25 April 2024, AFRL celebrated the 20th anniversary of DoD STARBASE NM at the Albuquerque Convention Center. This event brought together esteemed speakers and honored guests to commemorate two decades of impactful STEM education.

The celebration featured distinguished speakers who underscored the significance of STEM education and the enduring impact of DoD STARBASE NM on the community. Among the honored speakers were:

- » Howie Morales, Lieutenant Governor of New Mexico
- » Colonel Jason Gale, representing Kirtland Air Force Base (377 ABW)
- » Dr. Donald Shifler, Chief Scientist at AFRL Directed Energy
- » Ms. Erin Pettyjohn, volunteer and Deputy Director at AFRL Space Vehicles
- » Dr. Scott Erwin, Chief Scientist at AFRL Space Vehicles
- » Mr. Carlos Romero, Associate Vice President for Research and Economic Development at NM Tech

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## STARBASE Oklahoma on the News

Check out the four STARBASE Oklahoma programs in the news!



Click the above or visit: <https://www.koco.com/article/oklahoma-stem-spotlight-dod-program-starbase-careers-military-civilian-life/60874202>

# Summer 2024 Regional Workshops- That's a Wrap!

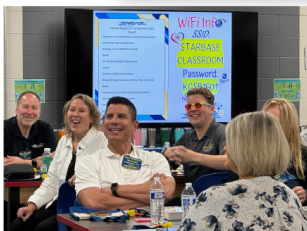
For the first time in STARBASE history Regional Workshops were held during the Summer of 2024 in the West, Central and East! Each region was welcomed by State Leadership who all enthusiastically expressed support of the DoD STARBASE program and conveyed the importance of the work the program is doing across the nation. The SPECTRUM Group would like to thank the following people, without whom these workshops would not have been possible.

## Workshop Hosts

- » West Region: Tiffany Young, STARBASE High Sierra Program Director & her team.
- » Central Region: Gena Schleimer, STARBASE Kansas City Program Director & her team.
- » East Region: John McKay, STARBASE Peach State Program Director & his team.

## Workshop Presenters

- » Heather Aguillon, STARBASE Kelly Program Director
- » Jeremy Hand, STARBASE Camp Rilea Program Director
- » Gena Schleimer, STARBASE Kansas City Program Director
- » STARBASE Kansas City Instructional Team
- » STARBASE Peach State Instructional Team
- » Richard Scott, STARBASE Louisiana, Program Director
- » Tiffany Young, STARBASE High Sierra Program Director
- » For the Win Robotics



## Local 5th Graders at STARBASE Edwards See the Raptor Up-Close



In partnership with STARBASE Edwards, the 411th Flight Test Squadron hosted 35 students for an opportunity of a lifetime. They were to experience a flight simulator followed by a tour of the F-22 Raptor, the most advanced and sophisticated fighter jet in the world.

“At STARBASE Edwards, we provide 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,” said Samantha Duchscherer, STARBASE Director.

The students were ecstatic as they entered the Raptor compound. The 411th FLTS’s Maj. Brent Maggard and Capt. Jacob Anthony Fischer gave them a quick briefing before taking them to a state-of-the-art flight simulator. The students couldn’t help but think the simulator was a videogame as they climbed in and around the one-million-dollar cockpit to control the stick and throttles. With a helpful boost from a few pieces of foam, they were able to see the multitude of switches and displays and realized that flying was a lot more complex than expected. The students learned the first lesson of the day – it requires advanced knowledge of science, technology, and engineering to test the Raptor and complete the mission.

“It was awesome to show the students the simulator we use to execute F-22 test. While they looked around inside the cockpit, they came up with unique questions that most adults don’t think to ask during tours. They also got to see our control room where engineers and pilots rehearse the mission to stay safe and get the job done as a team,” said Maggard.

The students then walked in awe as they entered the flight line and saw the F-22 Raptor up-close. The fighter jet possesses a sophisticated sensor suite, which allows the pilot to track, identify, shoot and kill both air-to-air and air-to-ground threats before being detected. It can fly at twice the speed of sound, go up to 60,000 feet in altitude, and operate for two hours without refueling. It’s a single seat aircraft with four internal weapon bays – two at the bottom center plus one on each side.

“STARBASE Edwards not only uses a hands-on, minds-on approach to teaching students STEM, but it also focuses on giving students concrete knowledge about STEM careers and how to work towards them,” said Duchscherer.

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The students asked many questions, from pilots running out of oxygen to the salary of entry-level pilots. They also had the opportunity to learn about Cyber Security from Katie White, Information Systems Security Officer, 411th FLTS, and how it plays a role in keeping vital information secured.

The field trip ended, and the students headed back to school but with a different perspective on aviation and avionics. For those with passion, talent and curiosity, that might have been a first step in an exciting and rewarding career.

Article taken from (<https://www.edwards.af.mil/News/Display/Article/3779742/local-5th-graders-see-the-raptor-up-close/>)

## Inspiring Future Aviators: Incarnate Word High School Students Soar at STARBASE Kelly

Incarnate Word High School Aviation Science students embarked on an exhilarating journey into the world of aviation as they visited STARBASE Kelly in San Antonio, Texas. The all-girl group immersed themselves in a day filled with aviation wonders, exploring various stops at Kelly Field and Lackland Air Force Base.

The day kicked off with anticipation and excitement as the students met in the VR lab, where they were transported into the captivating realm of virtual reality. With VR headsets donned, they experienced what training for C5 Aircrews looks like. Students completed checklists, walk-arounds and toured the virtual aircraft. The immersive experience ended with the opportunity to meet Col Amy Tullis, former Squadron Commander for the 356th Airlift Squadron, C5 Pilot and Delta Pilot. Her words of encouragement and deep knowledge certainly inspired the girls and adults, alike!

Next on the agenda was a visit to the C5 Simulator, where the students had the opportunity to step into the shoes of seasoned pilots. Guided by expert instructors, they navigated through simulated flight scenarios, honing their piloting skills and gaining insight into the complexities of aerial navigation. The realism of the simulator left a lasting impression on the aspiring aviators, igniting their passion for aviation even further.



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The adventure continued as the group ventured into the C5 Engine shop, where they witnessed the intricate craftsmanship behind the powerful engines that propel aircraft through the skies. The tour and Q and A session was guided by the only three female members of the Aerial Space Propulsion flight. From turbine blades to fuel systems, the students gained a newfound appreciation for the engineering marvels that make flight in the USAF possible. The hands-on experience allowed them to delve into the inner workings of aircraft engines, fueling their fascination with the mechanics of flight.

The highlight of the day awaited the students as they ascended to the ATC Tower, where air traffic controllers orchestrate the movements of aircraft with precision and expertise. From the vantage point of the tower, they witnessed the bustling activity of the airfield below, gaining insight into the critical role of air traffic control in ensuring safe and efficient air travel. The panoramic view of the base and surrounding skies left the students spellbound, instilling in them a sense of wonder for the vast expanse of the aviation world.

As the day drew to a close, the Incarnate Word High School students departed STARBASE Kelly with hearts full of inspiration and minds buzzing with excitement. Their journey through the aviation-themed wonders of the Air Force Base had sparked a newfound passion for flight, igniting dreams of soaring to new heights in the skies above. With memories of their adventure etched in their minds, these future aviators are poised to embark on a journey of discovery and exploration, fueled by the boundless possibilities of the aviation world.



## “Small Will Help All” for REAL!

Day 5 at STARBASE Hill promised fun-filled adventures through the Engineering Design Process for Washington Elementary. A school from the Salt Lake City School District, Washington Elementary often encounters students from countries all around the world. Why such an international melting pot of students? Salt Lake City offers solace for families in refugee status and opportunities to begin a stable chapter in an already turbulent adventure story.

This particular story cast young Aman Peter, a young girl from Nairobi, Kenya, as its protagonist. Aman arrived in the United States less than a year ago and praises the wealth of resources available to her. A lover of American pizza and hamburgers, she could also do without Utah’s cold and snowy winters.

Aman’s adventure revealed itself while attending STARBASE Hill and experiencing the “Small Will Help All” lesson. When speaking of water’s availability, potability and turbidity, Aman quickly explained the dangers of garnering water for her family living just outside Nairobi. Going to school served two purposes, get an education, but more importantly, get water. Fifteen minutes away, she walked to school with books and buckets. The five-gallon bucket, carried on her head, would carry the much need water back home to her family. Obtained from a lake by the school, she explained the water would be, “used to wash the clothes and to cook the food, take a shower...and to brush the teeth,” for her family of six. Just dipping her bucket into the lake brought challenges as she explained, “the lake was not good because the people go in the water, so we could not go in water to bring home when the rains come...”. Sadly, children would lose their life drowning. She remembers laundry being done often with what rain water her family could collect.

The lake water, once collected, brought a hidden challenge to Aman and her family. She tells the story, “The water was not good, when we were getting some water and it have bacteria and I drink it and then I come to the United States and go to hospital, they tell me I have bacteria, so I drink the medicine.” She did not know the name of the bacteria or medicine, but, after seven months, is still on the medication. Regretfully, even though her siblings have reacted to the medication similar to Aman, her mother still fights for her life in a Salt Lake City hospital with gastro-intestinal bacteria.

Astonishingly, the family’s water source demonstrated a relatively mild challenge to another fear. When asked why her family left Kenya for the United States, stoically she answers, “because Kenya is not good, some people kill people (with) knives.” This reality shocked even the classroom of American children who see or hear about similar events on their streamed news services daily.

Aman, a brave 10-year girl from Kenya, lived a very real story. Her life gave the lesson a reality to her peers. They recognized this was someone right in front of them who suffered through something that they take for granted each day. The students immediately reacted through immense focus and enthusiasm toward building a water filtration system. Each student wanted desperately to have clear water drip from their crew’s filter. They truly wanted to help their classmate and others like her.

Real life examples trump the pictures, .gifs and videos we use during presentations. Having these examples at our disposal can be an arduous process at best. When a brave student shares their relatable story with the class, this is a priceless experience to remember.



## Honoring and Remembering the Past with STARBASE Kingsley

STARBASE Kingsley began serving students in 1993 and was the first of four STARBASE locations in Oregon. The program is sponsored by the 173rd Fighter Wing, Kingsley Field Air National Guard Base, home to the sole pilot training program for both F-15 C & D model aircraft.

Since 2015, STARBASE Kingsley has been able to serve every city and county 5th grade student. STARBASE students explore and navigate with a handheld GPS to interesting places around the base. Waypoints include the Operations Building, the Engine Shop and the students' favorites—static displays of the F-4, F-16, and F-15, which have all flown at Kingsley Field. A special stop on their GPS journey is the David R. Kingsley Memorial. At this historic location the students learn about Medal of Honor recipient Lt. David R. Kingsley.

Born and raised in Portland Oregon, David was the second oldest of nine children. Because his dad had passed and his mother was stricken with cancer, David was left to care for his younger siblings at the age of 18. He joined the Army Air Corp in April 1942 and became a bombardier in the B-17 bomber.

On his last mission, June 23, 1944, his B-17 bomber flew to attack refineries and oil supplies in Romania. Their B-17 bomber came under enemy fire on their way to the target and again on the way back to safe territory. German ME-109 fighters repeatedly attacked their plane, wounding tail gunner Michael Sullivan. David rushed to provide first aid to Michael, placing a tourniquet on his right shoulder. According to Michael, "Dave saw my [parachute] harness was ripped. So he took his off and put it on me." Because their plane was heavily damaged and barely flying, the pilot gave orders for the crew to bailout.

All the crew was able to safely bailout except for David who did not have a parachute, as he had given his parachute to Michael. While Michael parachuted to safety, it appeared to him that David was trying to fly the plane. David perished in the crash. Michael wrote a letter to one of David's family members describing how David saved his life. Lt. David R. Kingsley posthumously received the Medal of Honor for his heroic actions. In 1956, the Air Force Base in Klamath Falls was renamed Kingsley Field in honor of Lt. David Richard Kingsley.

In 2004, the David R. Kingsley Memorial was constructed and dedicated as a tribute to David R. Kingsley. At the memorial, the students are able to see a piece of David's B-17 bomber along with several metal plaques explaining his final mission, his heroic sacrifice and the Medal of Honor citation. During the warmer months, one can see blooming flowers and towering bushes encircling the memorial. Nearby benches offer an opportunity to sit and take it all in.

In commemoration of the 75th Anniversary of his ultimate sacrifice, Kingsley Field partnered with the local community to design the artwork for a custom painted F-15 as a tribute to David R. Kingsley. Kingsley Field maintainers traveled to Edwards Air Force Base where they borrowed their paint facilities and produced a masterpiece in just 10 days. The jet would be named "The Heritage Jet" and included the same color and camouflage scheme as David's B-17 bomber.

In January 2020, the 173rd Fighter Wing revealed the commemorative jet at a special dedication ceremony. The Klamath Falls community and surrounding areas can still see the Heritage Jet flying around our skies, reminding us of David R. Kingsley and his heroic sacrifice.





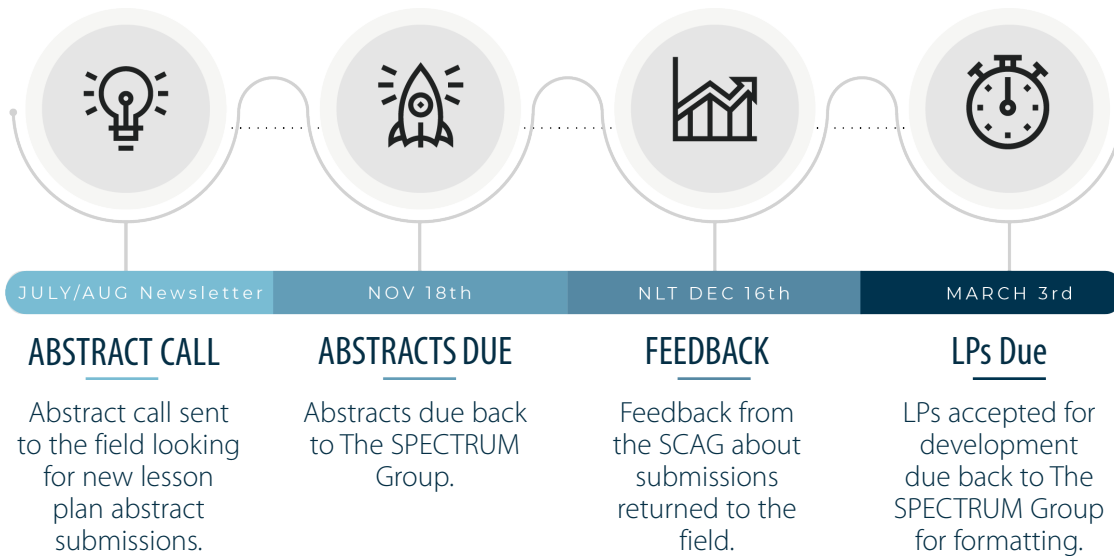
# Curriculum Abstract Data Call

The STARBASE Curriculum Advisory Group (SCAG) is soliciting your input for new lesson plans to be included in the approved curriculum for the DoD STARBASE Program.

This is an opportunity for you to showcase lessons that you may have utilized in summer programs, and that you would like to see become part of the approved curriculum.

Using the form available on STARBASE-U in the *STARBASE News* course, please submit your proposed abstract no later than Monday, November 18th, 2024 to [email@dodstarbase.org](mailto:email@dodstarbase.org). The SCAG will review your abstract submission and notify you that your idea has been accepted to be developed into an approved lesson plan in mid-December 2024. Further dates will be provided throughout the process.

The SCAG is excited to review your ideas. Thank you in advance for your work on this endeavor to expand and keep the STARBASE Curriculum fresh.



## “Show Us the Summer!” - A Call for Participation

We would love to highlight some of the field’s summer activities in the next few editions of *The Circuit*. Please share your summer camps and activities with us at [email@dodstarbase.org](mailto:email@dodstarbase.org). Be sure to include a little blurb about the experience and pictures!!!

## NEW CURRICULUM

Two new lesson plans were published this summer! You can find them in the *STARBASE Approved Curriculum* course on STARBASE-U in the appropriate section.

**Technology A.**  
FLIR Technology to the Rescue

**Technology A.**  
Intro to Simulation  
Appendix A. Flight Simulation  
Appendix

Look for more next month!