

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

## STARBASE 2.0 Coaches & Mentors

STARBASE New Mexico (NM) 2.0 program is fortunate to have access to a large number of STEM professionals at Kirtland AFB, both active duty and civilian, through the Air Force Research Laboratories (AFRL). Kirtland AFB hosts two Directorates in Albuquerque, NM. STARBASE NM recruits mentors by advertising in the lab's electronic newsletter, our volunteer database, and word-of-mouth through previous and current mentors. Many active duty volunteers can only work with our students for one or two years, but some of our civilian volunteers have been with us for years. In the past several years, our 2.0 groups have competed in The American Rocketry Challenge (TARC).

One benefit to our 2.0 program is the project-based learning focus. Students learn to solve problems that are multi-faceted and cross-disciplinary. When our 2.0 program starts, the project's deadline is many months in the future. For a student, this is an eternity, so they do not see an urgency in the tasks at hand. This is where our mentors are so helpful to the young people; they ask questions about the students plans and timelines not just for that meeting, but for the month ahead and in relation to the final deadline. The mentors provide a steady connection to the team goals even when there are frustrations with teamwork, rocket construction, or a failed launch. They are able to lead students through the Engineering Design Process, Computer Aided Design, simulation software, and often share examples of their own Engineering Notebooks.

Mentors provide so much to our 2.0 students. To the students, they are

- » Subject matter experts
- » Role models, modeling planning, patience, and persistence
- » Connections to STEM careers
- » Connections to STEM applications
- » Sounding boards
- » Support



*\*Photos for this article were taken before the Covid-19 outbreak.*

"It is our attitude at the beginning of a difficult task which, more than anything else, will affect its successful outcome." --William James



# STARBASE Kansas City: Working with Dr. Cheryl Cooper

Anytime you are representing STARBASE to the public, it is an excellent time to not only educate those you meet about STARBASE and its' mission, but to realize each person you meet is a potential mentor, volunteer, or financial donor.

One of STARBASE Kansas City's most dedicated mentors came to them as a result of a community outreach opportunity. Dr. Cheryl Cooper (CISSP), at that time a contractor with Sprint in the field of cyber security, visited the program's STARBASE booth and learned about the program for the first time. This brief conversation led to Dr. Cooper's involvement with STARBASE Kansas City.

The first year of her involvement was as a special speaker for a STARBASE 2.0 flight school program. Knowing airports are prime targets for cyber attacks, they reached out to Dr. Cooper to see if she would come and present to the program's 2.0 students. Observing her interaction, genuine interest, and how quickly the students warmed up to her, they began a conversation about her availability to be a mentor with our CyberPatriot 2.0 that they were in the process of planning for the upcoming fall. Without hesitation, Dr. Cooper agreed to become their expert in the field. CyberPatriot is a huge time commitment, and for many students, this is a real need in their lives—adults investing time in them. Dr. Cooper faithfully came to the weekly practice sessions and would stay the entire day of the competitions—cheering the students on, redirecting their attention, and even purchasing pizza!



Every student on the CyberPatriot teams knew Dr. Cooper believed in them, but one in particular was impacted more so than the others. According to the student's father's testimonial at the debrief meeting, the beginning of 8th grade for his daughter was a very low point of her life. She was trying to find her place with her peers—often making poor decisions as a result. Seeing the STARBASE 2.0 CyberPatriot booth at the back to school event, her dad encouraged his daughter to sign up. At the beginning of the program, she made a few unwise decisions which impacted her attendance, but by the end of the semester, she had discovered she had a gift in this area and emerged as the team leader. Much of that is credited to Dr. Cooper encouraging her to do better and showing this young lady she had worth and talent.

STARBASE Kansas City knows having a dedicated mentor like Dr. Cheryl Cooper is such a rare find!

## A Call for Participation

Throughout the year, this newsletter will continue to spotlight the achievements, partnerships, and tips of the participants of the DoD STARBASE program. Please share your achievements, success stories, and helpful tips with us at [email@dodstarbase.org](mailto:email@dodstarbase.org).

# STARBASE Curriculum Changes on the Horizon - Part 1



With over fifty lesson plans and activities published to date, DoD STARBASE curriculum options have grown significantly in the last 10 years. This development has required the Curriculum Committee to take a further look into the structure and organization of the existing Standards, Objectives, and Approved Lesson Plans (SOA) document and make some overdue changes.

As the curriculum has evolved, the Curriculum Committee realized that the Science Core Curriculum areas of Physics & Chemistry and Energy do not lend themselves to the possibilities available in the field of Science. Due to the nature of the objectives and layout of the existing SOA, sites have been limited in the content of lesson plans they are able to submit for approval. Further, the Curriculum Committee identified an overlap of objectives that might potentially cause consistency issues for sites and confusion for students. Additionally, the current split within the Technology Core Curriculum area was determined artificial and unnecessary. The original intention of the breakdown was to increase clarity for sites submitting curriculum ideas within this category; however, it seems that there is still confusion as to where these submissions best fit.

## So, what's next?

The existing Science Core Curriculum areas will be collapsed from Physics & Chemistry and Energy to a single Science Core Curriculum area (aptly named Science) that will include the sub-categories of Science Fundamentals, Characteristic Properties, Motion & Force, and Science Explorations. This will not only provide a place to expand our curriculum to include such studies as Earth Science and Biology, but also alleviate repetitiveness within the objectives. With this modification, the new SOA and Core Curriculum will now follow a concise correlation to the STEM acronym, a foundational concept of DoD STARBASE. Along with the changes in Science, the Technology Core Curriculum area will be reduced from the two sub-categories of Current & Emerging Technologies and Applying Technology into one called Tools of Technology. This will allow the objectives within Technology to be reconfigured in order to ensure clarity and purpose of lesson plans.

By combining the sub-categories of Technology and reconfiguring our Science Core Curriculum areas, the new SOA will reduce the number of meeting objectives from 35 to 28. This reduction will allow programs more flexibility to customize the use of other approved lesson plans and activities within their 25-hour academies. Be on the lookout in October 2020 for the publication of the new and improved SOA and more information about the implementation timeline!

## UPCOMING DATES

### October 2020

Submission of Financial & Property Management Information

*After end of Fiscal Year, instructions will be sent regarding submission.*



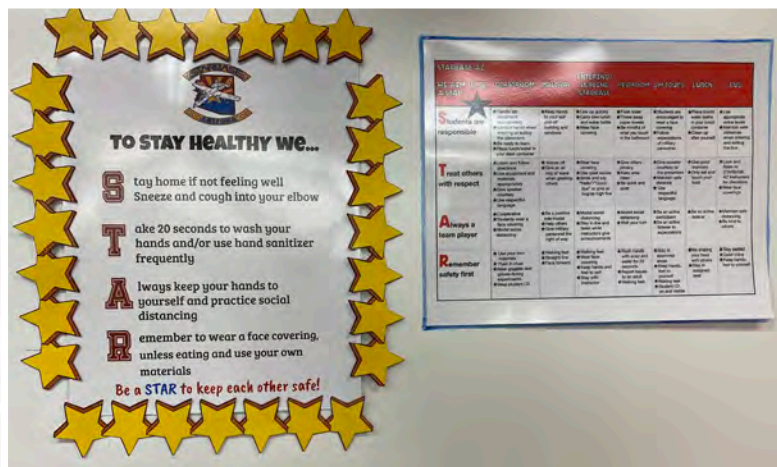
# Preparing for STARBASE with COVID-19

In light of the ever changing requirements of our Covid-19 world, STARBASE Arizona and STARBASE Kansas City shared some of what they are doing to keep our students, staff, and volunteers as safe as possible.

## STARBASE Arizona

After partnering with Davis Monthan Air Force Base Home School Groups, STARBASE Arizona recently got the green light to open up their classroom doors to a small group of students. Extensive planning went into ensuring the program complied with all COVID-19 restrictions. The team unanimously agreed that it was truly exciting to have the classroom humming with creative and inquisitive chatter from students again. Additional safety measures were implemented so students were able to explore and engage in key concepts using their own supplies. Not only did the classroom have visual reminders of safety expectations, but those visuals extended outside the classroom and into the main building where the program is housed. Customized "safe spots" were placed on the flooring and student friendly safety expectations posters, which outlined how to be a STAR at STARBASE Arizona, were displayed in the classroom, hallways, and bathrooms. Even the hand sanitizer station was outfitted with STARBASE insignia!

COVID-19 definitely has had everyone reexamining not only classroom procedures, but also how we have students interact with each task. One thing it hasn't changed is the excitement students experience while engaged in those lessons. It was evident after hearing students' reactions to creating and testing out restraints for Lt. Eggbert that they were charged and enthusiastic for what was to come the next day! One parent expressed, "I have tried for years to get my son interested in chemistry, to no avail. He's had so much fun. I wish the program was longer." Even though STARBASE Arizona isn't able to bring their partner schools to the STARBASE classroom, it was wonderful to work with the base home school liaison in bringing in a small group of students that stayed within the limits of the restrictions.



## STARBASE Kansas City

Each STARBASE program has a sincere desire to provide every school who entrusts their staff and students to our program a safe and comfortable adventure. In order to carry this out, STARBASE Kansas City has invested a lot of time reviewing state Covid-19 recommendations, along with various school and military procedures. Fortunately, no matter the organization, they have the same foundational guidelines—social distancing, limited numbers, and frequent handwashing.

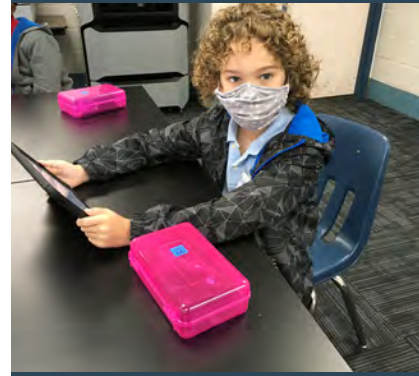
Changes in the classroom:

- » Student lab tables are doubled, and only three students are arranged at each group. This allows for the optimum space between students that their room will allow.
- » Military partners opened up a larger storage area to the program to reduce the number of items stored within the classroom—to give more spacing.
- » More time is dedicated to cleaning common surfaces throughout the day.
- » Visitors are limited to school personnel at this time—unless there are extenuating circumstances, and screening procedures were put in place in place for those non-school persons.

Changes in presentation/activities:

- » Hand sanitizer is used by each student prior to entering the classroom and again prior to touching any equipment.
- » All participants (teachers, students, STARBASE staff, etc.) must wear a mask inside the building—with the exception of when eating. As a result, this presents a problem of voice projection. The teachers will be using a voice projection system to better help our students hear them as they teach.
- » Their interaction with students is much more intentional, to limit unnecessary contact.
- » Staff are much more attentive to students using only the materials assigned to them (pencils, goggles, etc.), along with tablets/computers.

In addition, STARBASE Kansas City has requested any school attending the site to submit their school's COVID plan. Staff reviews the COVID plan, and if there is a procedure that the school has incorporated that they do not follow but is possible, they strive to meet these guidelines as well.





# STARBASE Nellis Summer Academy



“You know what makes me sad? That Agent K can’t teach me all year!” Jorge told his sister as they walked out the door on the last day of Summer Academy 2020.

STARBASE Nellis recently reopened their doors by hosting three Summer Academies at the end of July and beginning of August. This has been a challenging time for the Nation, but especially so for a new team to restart STARBASE Nellis. Their Office Manager is a reservist who has been called to active duty, and they entered their first week of Academy without an instructor. By the end of week three, they created a team that can overcome any obstacle.

They knew they needed to create a plan that would allow students the experience of STARBASE with face-to-face instruction. The first step was to work with Nellis Air Force Base and the 926th Group to create a plan that would keep them all safe. This included everything from wearing masks to the number of times they would sanitize the bathrooms. It added some extra costs to the program that weren’t initially considered. They needed a thermometer, masks, hand sanitizer, disinfectant spray AND wipes; the list seemed to go on forever. Oh, and bottled water for the students because a water fountain can’t be kept sanitized!

The second step was to review the curriculum to socially distance the students as much as possible, but still allow participation in cooperative learning, which is so important to a successful STARBASE. For example, CREO 4.0, where they usually had two students working together, became an individual activity. Even with the changes, they were still able to follow the 25-hour STARBASE approved curriculum.

They had exceedingly small groups; only 19 total students came during the three weeks. The students loved the program, and the parents loved the program too. They were able to do something memorable for this small group of students that many others haven’t had. The opportunity to work with others their own age to conquer objectives that create the basis for ongoing STEM learning.

All of the program’s students come from the Clark County School District, which is mandating distance learning for all students, so there is no way to bring students on base to participate in STARBASE Nellis. But, because we had Summer Academy, one parent offered a connection to a homeschool co-op. Now, they currently have 17 sessions of homeschool youth coming to STARBASE Nellis during the 2020-2021 school year. They are still social distancing, so classes are capped at 16, and they will continue to follow our safety plan to ensure the safety of our students and teachers.



They also recently heard from a private school who is planning on attending STARBASE Nellis and wanted to know if she could pass on the flyer we created. In previous years, STARBASE Nellis focused on serving the elementary schools around Nellis AFB, now they have identified a whole new audience to work with.

The SB Nellis Program Director, Tracy Clark, said “I’m buying an extra set of batteries for my thermometer and checking prices on bottles of water as we move into the new school year. Although COVID-19 has caused challenges for our new program, it has opened doors for us that we didn’t even know were there!”