

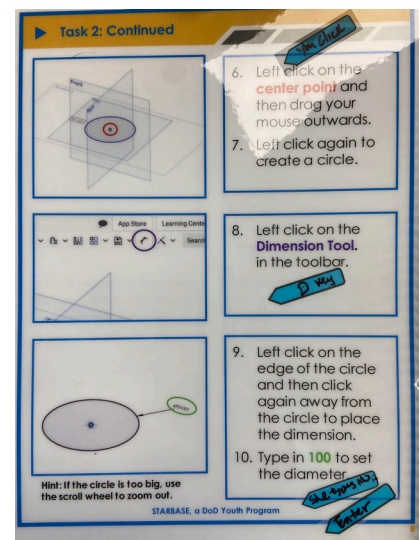
News from the field of the premiere DoD Youth STEM education program.

STARBASE High Sierra Working Hard to Include All

Recently, STARBASE High Sierra was given the opportunity to work with a student with a visual impairment. The academy officials were eager to meet this challenge and provide them with the hands-on experience they deserved. In order to meet their needs, the staff had to think creatively, collaborate with experts in the area, and refer to relevant research. Luckily, the hands-on nature of the program lent itself to tactile representations of most STEM concepts and practices.

Collaborating with experts and the individual student was key to supporting them from the beginning of the program. Prior to their first day, all written materials and presentations were translated into brail. This tool supported the student's engagement and participation. Additionally, large maps needed for robotics coding were scaled down and given to the student during instruction to provide a 3-dimensional aid to the lesson. These 3-dimensional representations aid students with visual impairments in processing visual information. Last but not least, a one-on-one aid came with the student to provide additional support and resources. The aid would describe visual aspects to the student such as a chemical reaction or teacher demonstration.

Finally, instructors were challenged to look at STEM in a new way through the use of research and vetted teacher experience. For example, Computer Aided Design (CAD) is an aspect of STEM with a high degree of visual input. Everything from guiding the mouse to extruding a shape requires visual coordination. Instead of a mouse, teachers used command keys provided within the program to assist the student. For example, rather than clicking on the "extrude" feature, students can use the command "shift-e." Using a variety of tools in a CAD classroom gives students options and increase their likelihood of pursuing a STEM career. Using simple tools such as this, as well as guidance, help the student not only participate with their class, but also go above and beyond some of their peers.



"Somewhere, something incredible is waiting to be known." -- Carl Sagan

Have a technical question about Onshape?

Please reach out to our STARBASE PTC Help Desk at starbase@ptc.com!



Brick by Brick

Wonderful things can happen when a STEM community comes together. Over 50 students from Alpena, Michigan, recently benefitted from a STEM partnership when they competed in a Lego-style brick-building contest. This is an excellent example of how an outreach program can not only create opportunities through teamwork with local resources, but can also lead to something exciting, fun, and highly impactful!

It all started with an idea and took less than four months to become a full-fledged competition. Students in a STEM-centered Thunder Bay Junior High School class and fans of the popular show "Lego Masters" wanted their own brick-building competition. Thunder Bay Teacher, Bob Thomson, and Steve Tezak, STARBASE Alpena Program Director, had been looking for an opportunity to partner on a STEM project, and this seemed like the perfect fit.

Steve used Alpena's STARBASE website and Facebook page to promote and register competitors. The only expense for this was the time dedicated and involved in creating forms and sending out promotions. The return on these efforts meant significantly increased traffic to the STARBASE website and social media. Further rewards were that it became a fantastic outreach opportunity for all involved.

Needing a place to hold the competition, Bob reached out to Alpena NOAA's Stewardship and Education Specialist, Daniel Moffat, to see if this competition could be hosted at NOAA's beautiful Great Lakes Maritime Heritage Center. With this partnership, students could have their entries displayed in public for up to four days before the judging took place. Judging was handled by members of the local High School ROV Club, and results were tallied on the spot via a spreadsheet Steve created to track and tabulate all the results.

The last piece of the partnership came from Laura Percival, the Northeast Michigan Regional Director for MiSTEM, a network that unites education, businesses, and community partners across the state of Michigan. She was able to secure \$1200 in funds to use for prizes, with an additional \$400 coming from local partners who were interested in sponsoring this competition.

With everything in place, this idea became a reality as students dropped off their brick creations in February. Students competed in one of four categories: Lower Elementary (K-3), Upper Elementary (3-5), Middle School (6-8), and High School (9-12). Understanding that students would be using their own bricks and that some may be limited in what they have, the competition was not focused on any specific theme or uniformity of color of bricks. The scoring rubric was based on four categories: presentation, originality, complexity, and story.

This competition was a great success, even though there was not a lot of formal advertising. All partners agreed that this competition was a prototype to gauge what was possible. Now that it has been established and feedback shows potential for growth, the team plans to meet soon and discuss plans for next year's competition. They all look forward to making it even bigger and better!



STARBASE Patrick Blends STEM Career Instruction with Rocketry Activities

STARBASE Patrick welcomed Captain Tiffany Crick, US Space Force Flight Mission Lead from the 5th Space Launch Squadron, to help teach a rocketry lesson in conjunction with the Space Force's "STEMtoSpace" outreach campaign, an initiative that started out as a small team project in December of 2020 in honor of the first anniversary of the service branch. It was designed to link Space Force volunteers with local-area students to talk about the value and importance of STEM Education.

"The STEMtoSpace Campaign is designed to facilitate engagement between Guardians and school classrooms nationwide and worldwide. Every engagement presents a unique opportunity to interact with students, tell your story, and encourage STEM participation. The next generation of Space Force Guardians are in today's classrooms and waiting to hear from you." Said General Jay Raymond, former Chief of Space Operations (USSF), as he challenged members of the USSF to partner with the community and carry out the mission of the program

Captain Crick answered the call from General Raymond and spoke to STARBASE Patrick students about her role in the United States Space Force and how she supports the rocket launch process at Cape Canaveral. She went on to explain how she uses science, technology, engineering, and mathematics concepts in her daily



routines. Once the students learned that she launches rockets for a living, the very same ones that they see on TV, they were hooked!

Fired up about rockets, STARBASE Patrick students moved into the rocketry lesson and activities where they were able to utilize Captain Crick's expertise for their launch. Captain Crick's real-world insight and knowledge added to so much excitement; the students could not stop asking her questions and inquiring about rocket launches. STARBASE Patrick staff are so grateful to Captain Crick for taking the time to educate and motivate our students, and to show them that women in STEM rock! Everyone involved had a BLAST!



2023 STARBASE Workshop | Aug 2nd-3rd

The STARBASE Program Director & Instructor workshop will be held virtually again this year on Wednesday, August 2nd and Thursday, August 3rd from 1300-1600 EDT. Specific details will be provided as soon as they are available.



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.

STARBASE Peterson Goes to the Dentist

STARBASE Peterson visited the Colorado Area Dental Lab (ADL) with students from Peyton Elementary School on March 9, 2023. The 21st Dental Squadron is the USSF's largest dental squadron and is home to the largest [Area Dental Laboratory](#) in the Space Force.

Students were able to learn what the technicians at the ADL do, the various types of dental appliances they make, how they blend biology and medical knowledge with art, and how they use CAD/CAM (similar to Onshape!) to 3D print dental prosthetics like crowns and implants or create custom appliances like mouth guards.

Students were able to explore the CAD/CAM programs, talk to the technicians at work in the fabrication labs, and see some of the research and development of new, cutting edge technology! Appreciation goes out to Lt Col Ryan Sheridan, MSgt Robert Snowden, MSgt Luis Escobar, and SSgt Jocelynn Alviero for arranging the tour and to the many airmen, NCOs, and civilian technicians who graciously explained their jobs as students visited their workstations in the lab. Special shout out to SSgt Alexander for his hands-on activity as STARBASE students tried out the CAD systems used by the dental lab.

Peyton Elementary's 5th graders were very excited and inspired after their visit. According to an email received from Mrs. Kristi Almond, teacher at Peyton Elementary, "Yesterday was such an amazing experience. When we were walking back to the bus, we had multiple students share that they 'want to work in the Air Force' or in 'the dental lab.' I truly think we have changed their outlook on jobs in the future. :) STARBASE has been such an amazing experience!"



STARBASE Directors Brown Bag Series

As you may already know, a Directors Launch Training was developed for new STARBASE directors in 2022. After conducting two sessions of this in-person training, it is clear from the feedback that this information would be beneficial for all directors! To reach the widest audience possible, please consider joining us at one or all of the remaining virtual brown bag sessions below. Look for an email with registration information for upcoming sessions!

Thursday, May 11th @ 1pm ET

Resource Management Part 1:
Property

Thursday, May 25th @ 1pm ET

Resource Management Part 2:
Fiscal

Thursday, June 22nd @ 1pm ET

Reporting and Data Collection Requirements

