Feature Story: More Than 4,300 Students Take the Fluor Engineering Challenge

Teaching students through a hands-on, engaging learning process is becoming the new normal in the classroom. Educators are rethinking the learning experience, focusing not only on what students learn, but how they learn.

To support this approach, students around the world were invited to participate in the Fluor Engineering Challenge as part of Fluor’s celebration of Engineers Week. The Fluor Engineering Challenge is a student-friendly adaptation of Fluor’s Friendly Competition developed in partnership with Science Buddies, an award-winning, web-based education nonprofit. This year, Fluor celebrated the fifth anniversary of the challenge by introducing the “Volleyball Machine Challenge,” the Fluor Friendly Competition designed in 2018 by The Brady Bunch team from the Southern California office.

Grant winners announced

Kindergarten through 12th grade students who completed the challenge and submitted results were entered into a random drawing to win one of 20 $1,000 grants for their qualifying community organizations or schools. The 2019 Fluor Engineering Challenge received a record-breaking 1,430 submissions, with approximately 4,300 students participating from 10 countries. Click here to see this year’s 20 grant winners.

Not just a project

Talented engineers at Fluor not only move the needle for Clients, but also for the future workforce. Visitors to the Fluor Engineering Challenge site can get to know the Fluor engineers, the history behind the innovative Fluor Challenge design and explore various engineering fields.

Teachers not only get their students involved in the challenge, but through Fluor-sponsored Google Classroom tools, they can also download lesson plans that help students gain a deeper understanding of the engineering design process. Educators can use pre-written lesson plans or create their own, distribute assignments, send feedback and fully support their students’ participation in the Fluor Engineering Challenge. More than 1,600 teachers have downloaded Fluor Engineering Challenge lesson plans for their classrooms.
“I decided to participate in the Fluor Engineering Challenge because it gave my students a fun experience by helping them apply their skills against other students around the world,” said Jake Sullivan, math teacher at Arizona Agribusiness and Equine Center. “I also wanted them to be able to apply their academic skills to a project outside of the classroom. They enjoyed the fact that this wasn’t a classroom or district-wide competition; it was a different kind of project – one created by a major engineering company.”

“Our most memorable part of designing the Volleyball Machine Challenge was seeing the Fluor engineers from around the world and their designs,” said Jenni Domo, academy director, Unioto Elementary School. “We called it our virtual field trip.”

Last year, Fluor and its employees enabled more than 255,000 primary and secondary school-aged students to receive 2.2 million hours of STEM academic training and enrichment.
Partner Profile: Fluor Donates $50,000 to the Red Cross Following Devastating Cyclone in Mozambique

On March 15, Cyclone Idai, a Category 2 storm, made landfall off the coast of Mozambique in Africa. The cyclone devastated the city of Beira and surrounding communities, resulting in the loss of communication infrastructures, shelters and settlements, health and sanitation facilities and thousands of hectares of land. Hundreds of people died and thousands sustained injuries. More than 1.8 million people were affected, with more than 33,000 homes destroyed by the storm.

Due to the severity of the disaster, the Mozambique Red Cross made an International Appeal – a request for international assistance – to Red Cross partner societies. In response to the catastrophic event, The Fluor Foundation has announced a contribution of $50,000 to the American Red Cross to directly assist with the Cyclone Idai relief efforts.

Fluor’s contribution was combined with existing available American Red Cross resources designated to Cyclone Idai, and supported operational expenses including the deployment of trained specialists (staff and volunteers), remote information management coordination to create global situation awareness and shipment and distribution of supplies.

“The unprecedented devastation resulting from Cyclone Idai will be felt for years to come,” said Torrence Robinson, president, The Fluor Foundation. “Natural disasters of this magnitude require a far-reaching collective response. We are pledging our resources to help those who have been impacted by this tragedy.”

Fluor is committed to investing in social services organizations, like the Red Cross, that provide basic needs and preventive and emergency services in times of crises.
Fluor Cares Profile: Eliminating Educational Barriers

Just 50 miles away from Fluor’s New Delhi office, the remote villages of Bukharaka and Untka face an education infrastructure crisis. Many schools lack basic, stable infrastructure, which impacts instruction, student outcomes and dropout rates.

To help set up local students for success, Fluor partnered with the local non-governmental organization Sehgal Foundation to identify two government schools that were in need of renovation. Fluor employees then set to work.

Volunteers spoke with students, teachers, principals, villagers, Sehgal Foundation representatives and the sarpanchs (heads of the villages) to determine the immediate needs of the schools. They then made recommendations to Fluor’s local Community Relations committee. Fluor worked through the Sehgal Foundation to hire contractors to provide Phase I school refurbishments – the first step toward improving the quality of education for village students.

Government Middle School, Bukharaka Village

Fluor provided an extensive refurbishment at the Bukharaka Village school. A priority need was to provide separate sanitation facilities for girls and boys. Before the new facilities, students would often have to leave school premises to use the restroom. Older, primary-age girls miss significant amounts of school or are unlikely to continue at school if sanitary facilities are poor or non-existent.

Continuing to improve hygiene and water conservation efforts, Fluor developed a rainwater harvesting program and a new drinking water station to provide clean, filtered drinking water. Sanitation training sessions were also conducted with students, discussing sanitation and the Swachh Bharat Mission, which focuses on cleaning up the streets, roads and infrastructure of India’s cities, towns and rural areas. In addition, volunteers leveled the ground to prevent waterlogging during the rainy season, thus reducing water-borne diseases and absenteeism among students. Last, a perimeter gate was built to secure school grounds.

Since the improvements were completed, school enrollment has increased by 21 percent, and the number of teachers at the school increased from two to nine. Student attendance increased by 29 percent, and the average grade per student improved by six percent.
Government Middle School, Untka Village

An additional school refurbishment took place at Government Middle School, Untka Village. Fluor provided renovations for 18 classrooms and the school lobby. The ground was leveled to provide a play area for students. Separate sanitation facilities were also constructed for girls and boys.

Main entrance and boundary walls were repaired to stop animals from entering school grounds. In addition, Fluor funded repairs for the roof, floors, doors, windows and classrooms, and painted throughout the school. The school kitchen was renovated with a shed to provide a safe, clean area to prepare meals. Last, training sessions were conducted with students about sanitation and the Swachh Bharat Mission.

At the Untka Village school, enrollment increased by 22 percent, and out of the 34 students that dropped out of school, 26 returned to complete their education. Attendance went from 72 percent to 91 percent for primary students and 90 percent for middle school students, and the average grade per student increased by 16 percent.

Fluor is now executing Phase II of the project and will provide new desks for students, along with restoration of an additional rain water harvesting facility.

Fluor has also decided to support a third school, Government Middle School, Satputiyaka Village, by providing renovations to improve the classrooms, washrooms, kitchen and desks.

Through these renovations, Fluor is improving the educational experience for approximately 800 students.