Sandcastle Competition Helps Local Students
Learn About Architectural Engineering

This spring, Cal Poly students organized a series of lessons to teach local 5th graders about what they do. The lessons culminated in a beach day where five student teams designed and built sandcastles. The Sandcastle Competition is a fun way to apply lessons learned in the classroom to a Learn by Doing experience. Architectural Engineering (ARCE) student and event organizer, Sydney Patrick describes the competition below.

Q: What is the Sandcastle Competition and what is its purpose?

The Sandcastle Competition is an event in which 5th graders from classrooms in the area come to Pismo Beach and construct a sand sculpture with the help of ARCE students and professionals from engineering, design, and construction firms in SLO.

The basis of this event starts in the classroom where ARCE students teach the 5th graders basic engineering and design concepts with the help of liberal studies students that are currently working toward their teaching credentials. We created a curriculum with four lessons. The first two lessons teach the students what plans and elevations are, and the students explore these definitions through an activity in which they design and build a building out of Linker Cubes in small groups and line all of their buildings up as a classroom into a “skyline,” (8-10 buildings total).

Next, the students are assigned a section of this skyline and instructed to draw the elevation of this section on grid paper. Finally, the students line up their drawn elevations to see if it correctly represents the skyline they arranged with their buildings. The last two lessons are focused on the design process and how planners, architects, engineers, and contractors work together to complete a project. They then use these concepts to design a sand sculpture that they eventually build at the beach. Each classroom builds their own sand sculpture.
and we have a judge who hands out an award to each classroom based on teamwork, creativity, and best representation of the theme, among others. This year’s theme was “Out of This World,” which you can see represented in the pictures.

Q: Who can participate in it?
This project is organized through the ARCE Department and any ARCE student can participate. We work with the Department of Education to recruit upper-level liberal studies majors. There were 20 ARCE students and 5 student teachers, and we taught in five different classrooms. We also invited professionals from San Luis Obispo engineering, design, and construction firms to join us and help the students build their sculptures.

Q: When and where is the event held?
The actual competition was held on Saturday, May 9th from 9am-noon at Pismo Beach. We’ve been working with the students in the classroom since February.

Q: How is the Cal Poly ARCE Department connected to the event?
The Sandcastle Competition is put on by ARCE students. I worked with faculty advisor, Professor Pamalee Brady to organize this year’s event.

Watch the “5th Graders: Constructing Their Futures With Sand” video here.