



What's Happening in STREAM at Solana Pacific? Fall 2018 Edition

STREAM Discovery Labs at Solana Pacific provide hands-on, interdisciplinary experiences for our students, helping them connect grade-level science curriculum with real-world situations. Students apply the concepts and skills they learn across Discovery Labs to broaden and deepen their understanding of them.

For example, this fall, 4th, 5th, and 6th graders explored electricity and circuits with Ms. Mumby in the Media Center, Mrs. Allen in the Technology Lab, and Mr. Schneider in the STREAM Lab. With some experience constructing their own circuits using copper tape and a watch battery, students were tasked with designing a circuit in the shape of an alien creature and making its eyes light up. That experience is helping students now to create a movable, interactive mural in Mrs. Weinberg's Art Discovery Lab!

In another example, students learned how to program *Sphero*, a robot, to execute basic movements using block coding. Next, students were challenged to use their programming knowledge to code their Sphero to perform a more complex task or sequence of tasks, such as moving a cart of food through an obstacle course.

Using their programming skills and knowledge of topographical maps from lessons with Mrs. Allen and Ms. Mumby, students navigated a virtual reality sandbox.

4th Grade Builds Earthquake Structures

Fourth-graders studied earthquakes and the impact of the earth's movement on structures. Students studied architectural and engineering best practices to plan, design, and build scale models to withstand an earthquake. Working in teams, students were given a budget for the materials to build their structures.

After design and construction, it was time to test how well their buildings would hold up on the shake table, which simulates the movement of a temblor.

5th Grade Makes the "Perfect Pancake"

5th graders learned about physical properties of substances and the chemical reactions that occur when different ingredients in varying quantities come together. A perfect place to study chemical reactions is in the kitchen, and for 5th graders, the perfect (and most delicious) item to study is a pancake!

Mr. Schneider asked students to create the *Perfect Pancake*, one which would taste great and address a major food allergy in the U.S. Students accessed 100 food-grade ingredients in the STREAM Lab to develop their culinary and chemical masterpieces!

Each week, they measured, mixed, cooked, tested, and reflected on how to improve their pancakes. Students used their math skills, observed and recorded chemical changes, and of course, used their sense of taste to determine how close their pancake was to perfection, all while addressing the challenge of a food allergy.

In addition to this project, for the last three weeks, fifth grade students have also been

immersed in robotics and coding with Mr. Schneider. Students are working on programming Arduinos and Sphero, as well as making circuits with various materials.

6th Grade Studies Thermal Energy

In a project that connects their study of thermal energy with their recent activities and learning at 6th Grade Camp, students were given this problem:

*Design a device that one might need at camp **that either minimizes or maximizes heat transfer.***

Students designed and built their devices from scratch using an assortment of materials and technologies of their choosing and all within a budget.

Students tested their inventions. Did they perform to their expectations? Students made and recorded observations, took measurements, assessed their results, and considered design modifications that could increase the effectiveness of their designs.

Like the 5th graders, for the last three weeks our sixth grade students have focused on robotics and coding with Mr. Schneider in the STREAM Lab, working on Arduinos, Sphero, and circuits.

What's Happening in Maker Space?

Maker Space is a space for all students to work in and to enjoy during lunch time recess. Instructional staff facilitate STEM challenges, art and craft projects, robotics, and other activities. It is an opportunity for students to "free-build", an activity that children and adults alike say they have increasing difficulty finding time to do during our busy days.

Maker Space provides that connection among all Discovery Labs and the Media Center, and it encourages students to "think STREAM" **every day**, not just during class time.

Maker Space is always in need of bottle caps, yogurt cups, and other items typically recycled or thrown away at home. To see the full list of materials needed, go to: <https://www.sbsd.k12.ca.us/Page/7935>

To learn more about STREAM at Solana Pacific, go to: <https://www.sbsd.k12.ca.us/Page/6172>

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