Berkeley Public Schools Fund

MAKER CAMP

SUMMER 2024

PROGRAM OVERVIEW

The Berkeley Public Schools Fund's 3rd Maker Camp took place at King Middle School for 146 rising 6th-8th graders and at Berkeley High School for 25 rising 9th graders in June and July of 2024. 34 rising 10th-12th graders and recent high school graduates served as near-peer mentors who supported students in developing skills and confidence throughout the camp.

To provide flexible participation opportunities, students had the option to participate for 2 weeks or 4 weeks, with most opting for 4 weeks. Students were offered the following 2-week classes to choose from:

6th Grade:
- Zoo Design
- City Planning

7th & 8th Grade:
- Game Design
- Stop Motion Animation

9th Grade:
- Makerspace Engineering
- Stagecraft
- Costume Design
- Sound Engineering

Each of the eight classes offered were tailored to the specific age groups of participating students. From start to end, the camp was designed to resonate as much as possible with the diverse backgrounds of the campers. As always, we prioritized hiring staff and near-peer student mentors who reflected the demographic make up of the students, in order to foster an inclusive and supportive learning environment.

Each class was structured to provide age-appropriate introductions to technology, engineering, and design-thinking processes, guiding students through stages of research, inquiry, and production. The curriculum connected STEM concepts to real-world situations, culminating in the creation of a final product, design, or activity that showcased their learning and understanding.

DEMOGRAPHICS

Black or African American	34%
Hispanic or Latine/x	33%
American Indian or Alaska Native	1%
Asian or Pacific Islander (incl. SWANA)	14%
White (incl. SWANA)	8%
Two or More Races	9%
Female	46%
Male	53%
English Learner	22%
Special Education	64%
Socio-Economically Disadvantaged	32%

"Maker Camp matters for my child and family because as a single parent this is the only place where my kids can access a summer camp we would otherwise not be able to afford."
—Maker Camp Parent

berkeleypublicschoolsfund.org/stem-programs/

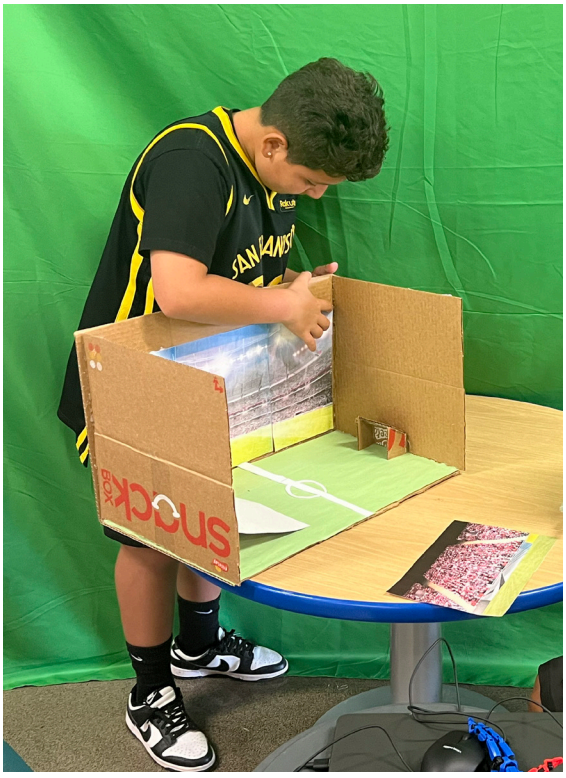
Zoo Design & City Planning
6th Grade

In the Zoo Design class, students created drawings and animations using software that provides the foundation for digital design. Taking inspiration from a field trip to the Oakland Zoo, they built 3D cardboard animal masks and animal informational cards, which were lit up by a simple circuit. Furthermore, they developed coding skills by creating predator-prey games.

In the City Planning class, students used TinkerCAD to create detailed cityscapes and vibrant parks. They showcased their engineering skills by constructing solar-powered cars and rubber band-powered boats. They engaged in hands-on design challenges like bridge building and testing weight limits before collapse. A visit to the USS Hornet further enriched their knowledge of engineering subjects.

"I loved the community and the self-esteem boost the staff gave."
—A Maker Camp student

Stop Motion Animation & Game Design
7th - 8th Grade



In the Stop Motion Animation class, students explored animation, digital music production and green screen techniques to craft compelling stories for the short films they created. They also dove into graphic design to create personalized movie posters. A visit to the Cartoon Art Museum enhanced their understanding of character drawing.

In the Game Design class, students created interactive games and toys using Scratch, micro:bits, and servo motors—gaining exposure to multiple tools. Drawing inspiration from their visit to the Mechanical Museum, they designed cardboard carnival games with electronic elements and crafted prizes for game winners.

Makerspace Engineering, Stagecraft, Costume Design & Sound Engineering

9th Grade

In Makerspace Engineering, students designed and crafted their own personalized mini-golf courses. They used tools in the fabrication lab to build the course and golf clubs. The class also took a field trip to Sub Par Mini Golf in Alameda for inspiration and fun.

In Stagecraft, students created props for a stage set. They used state-of-the-art computer-assisted design (CAD) software and various power tools to design and build functional candy dispensers. They took a field trip to the Berkeley Repertory Theatre to see the workings of a professional scene shop.

"Having free access to these programs is monumental to growing diversity within STEM fields. Keeping students of color, girls, and gender-expansive youth engaged in STEM starts with each and every interaction they have during their youth."
—Maker Camp Teacher

In Costume Design, students digitally designed costumes for characters from various media such as theater, film, video games, and anime. For their designs, students took inspiration from everyday life and from a visit to the Berkeley Repertory Theatre's costume warehouse.

In Sound Engineering, students recorded music, produced podcasts, and created album covers. They went behind the scenes at the Berkeley Repertory Theatre in Downtown Berkeley to explore their sound studio and learn how shows are produced.

In addition to taking these classes, students at all grade levels participated in community-building ice-breakers, team-building activities, showcases, and field day games. Staff and mentors not only were trained in the curriculum for their classes, but were also given tools and resources to create a safe and welcoming camp environment. In post-camp surveys, students reported feeling a stronger sense of belonging in the camp and a greater connection to the mentors and adults than in previous years.