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SPECIAL THANKS:

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Bay Area Discovery Museum

chabot space & science center

ENGINEERING FOR KIDS DAY

@ UC BERKELEY

STUDENT PASSPORT

NAME:

Student Societies

Engineering for Kids Day was planned, designed, and run by the following UC Berkeley engineering student societies:

- CalSol
- American Nuclear Society
- Institute of Electrical and Electronics Engineers
- Bioengineering Honor Society
- Materials Science and Engineering Association
- Berkeley Engineers and Mentors
- Pilipino Association of Scientists, Architects, and Engineers
- Biomedical Engineering Society
- Pi Tau Sigma
- Berkeley Innovation
- Tau Beta Pi
- Out in Science, Technology, Engineering, and Mathematics
- Society of Women Engineers
- Chi Epsilon
- Theta Tau
- Science and Community Outreach
- Institute of Industrial Engineers
- Human Powered Vehicle
- American Institute of Chemical Engineers

To learn more about engineering, visit: http://e4k.berkeley.edu

Special Thanks:

Gian Bruno (ESS)
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Jennifer Teverbaugh
Susan Madison
Pam Armstrong
Dan Essley Scott
McNally Cheese
'N' Stuff

What is engineering?

PROBLEM SOLVING: Just like any homework problem, engineering is looking at any problems that exist in the real world and solving them using math and science.

MATH AND SCIENCE: In order to solve the problems, engineering uses a foundation based on principles of science and math that are taught as far back as first grade.

CREATIVITY: The problems that engineers solve can be very complex. Creativity (just like in art and music) must be used to apply scientific principles to solve these problems.

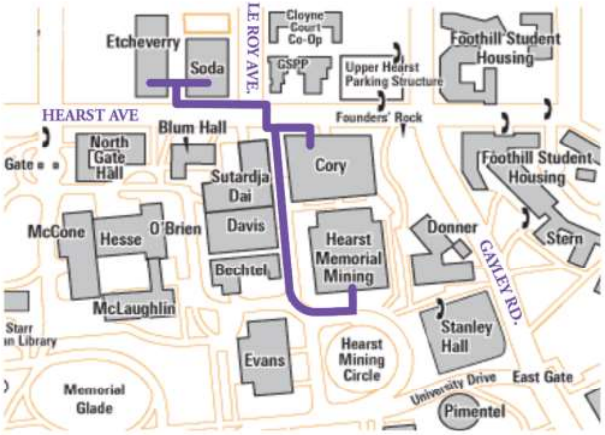
LEARNING: Even after finishing school, engineers are always learning from everything they see and experience so they can apply it to new problems that they encounter.

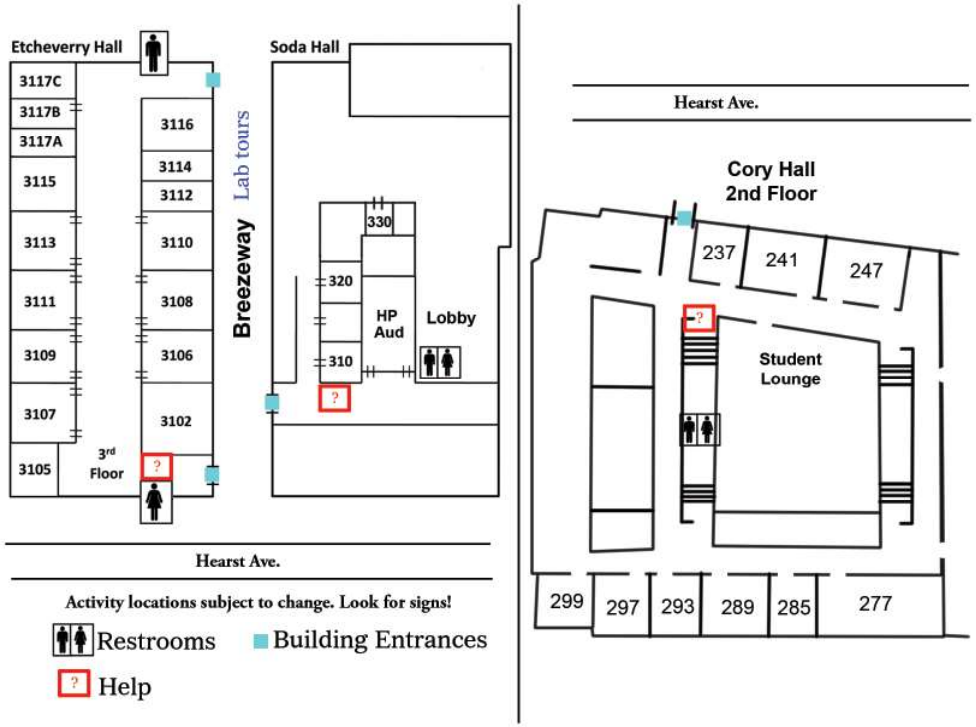
Types of Engineering

Bioengineering
Civil Engineering Chemical
Engineering Computer
Engineering Electrical
Engineering Energy
Engineering
Environmental Engineering
Industrial Engineering
Materials Engineering
Mechanical Engineering
Nuclear Engineering

For more information, visit http://coe.berkeley.edu/departments

E4K Map of Facilities





Engineering for Kids Day

Thank you for participating in the seventh annual Engineering For Kids Day at UC Berkeley. We hope you will enjoy today's activities as well as be inspired to explore the many possibilities and fi elds that engineering has to off er.

How E4K Works

For the kids, we have 18 core 30-minute activities running multiples times throughout the day. These begin every 30 minutes, and there are 7 sessions for each activity throughout the day.

Activities will be in designated classrooms in Etcheverry, Soda, and Cory Halls. Students can enter any open door to join an activity. **However, if the door is closed, that means the activity is full or closed**, and students should either look for an open door, wait until the next session, or explore the demonstration tables in the breezeway between Soda and Etcheverry, in Cory, and in the Etcheverry hallway. These demonstration tables will be operating throughout the day, and kids can visit them at their leisure.

At each of the 30-minute activities, your passport will be stamped after you complete the activity. **If you collect at least 5 stamps, you will be entered into a raffle for bigger prizes!** The raffle will take place at the closing ceremony.

Activities will break from 12:00-12:30 when our volunteers are eating lunch.

Paper Magnet Speakers
Berkeley Engineers and Mentors
Room: 3107 Etcheverry

Come build your own Paper magnet speakers to take home! We will teach you through the fun and easy process of making an audio speaker out of a paper plate.

Reverse Engineering
Science and Engineering Community Outreach
Room: 380 Soda

Ever wanted to know what's on the INSIDE of your toaster or other household item?? Come use REAL tools to take apart REAL items such as toasters, printers, videotapes and learn about the various components inside!

Electronic Circuit Music Workshop
Institute of Electrical and Electronics Engineers
Room: 285 Cory

Ever wonder how electronic circuits can be used to make music? Come on down and build a music making circuit yourself!

(Parachute) Egg Drop
UC Berkeley PTS
Room: 3106 Etcheverry

Have you ever wanted to skydive? Do you ever eat eggs for breakfast? Well if you come visit us we will teach you how to combine the two and make an egg skydive safely with a parachute!

Note: please be patient with us as all our volunteers and coordinators are full-time students and are putting this event together on our free time.

Schedule of Activities

	Team Blue	Team Gold
9:00-10:00	Check-In and Introduction	
10:00-10:30	Activities	
10:30-11:00	Activities	
11:00-11:30	Activities	
11:30-12:00	Lunch	Activities
12:00-12:30		Lunch
12:30-1:00	Activities	
1:00-1:30	Activities	
1:30-2:00	Activities	
2:00-3:00	Check-Out and Closing Ceremony	

To ease the distribution of lunch, kids' lunch will be split up into two times: Team Blue will have lunch from 11:30-12:30, and Team Gold will have lunch from 12:00-1:00. Your team is determined by the color of your E4K wristband.

passport stamp

Physics Magic Tricks
Tau Beta Pi
Room: 293 Cory

Come learn some tricks that will seem like magic and learn the physics behind them! From balloons to coins to eggs, we will show you the wonder of ordinary objects!

passport stamp

Make your own popping tapioca!
Materials Science and Engineering Association
Room: 299 Cory

Kids will learn about how polymers work and do an experiment where they make their own edible, popping boba with mango juice.

passport stamp

Rubber Band Helicopters
Pilipino Association of Scientists, Architects, and Engineers
Room: 3113 Etcheverry

Construct your own rubberband helicopter to take home! We'll teach you about aerodynamics and rotation for flight!

passport stamp

Rubber Band Cars!
Society of Women Engineers
Room: 3108 Etcheverry

RUBBER BAND CARS!! Be an engineer for a day and build a rubber band-powered car to compete in a race for the best! We'll teach you what it takes to make yours go as far and as fast as possible!

Demo Table

Solar Car: "Zephyr"
Location: Soda/Etcheverry Breezeway

Zephyr is a solar car designed, built, and raced by a group of UC Berkeley students. Specifically, it is an electric car powered by solar cells. UC Berkeley's previous carImpulse has accumulated well over 6000 km from racing across Australia and the United States.

Zephyr is made out of high-tech materials such as carbon fiber and monocrystalline silicon wafers-- but it is the careful deliberation in the design and build of every component in the car that makes it an engineering marvel.

Student Activities

Format: Title of activity
Organization that is running the activity
Room the activity is located in

Note: Rooms are subject to change, be sure to read the signs

passport stamp

M&M Half Lives
American Nuclear Society
Room: 237 Cory

Did you know that chocolate has a lot to teach you about nuclear radiation? I guarantee you won't find a more delicious science.

passport stamp

Strawberry DNA Extraction
Bioengineering Honor Society
Room: 373 Soda

What do you and a strawberry have in common? You both have DNA! Come extract real DNA from strawberries and see what all the hype is about!

passport stamp

Flipbooks
Berkeley Innovation
Room: 289 Cory

See design in motion! Create a flipbook and learn the importance of iteration.

passport stamp

Kooleidoscopes
out in Science, Technology, Engineering, and Mathematics
Room: 3105 Etcheverry

We're making kaleidoscopes with a short explanation of how light works in the context of kaleidoscopes

passport stamp

Liquid Nitrogen Ice Cream
American Institute of Chemical Engineers
Room: 310 Soda

Liquid Nitrogen Ice Cream - Make your own ice cream and also watch a demonstration of how we make ice cream using liquid nitrogen!

passport stamp

Paper Airplane Assembly Line
Institute of Industrial Engineers
Room: 3109 Etcheverry

Come fold paper airplanes in an assembly line and race against other teams!

passport stamp

Lemon Batteries
Theta Tau
Room: 3111 Etcheverry

Come build a lemon battery and learn how it's able to light up an LED!

passport stamp

The Science of Ice Cream
Biomedical Engineering Society
Room: 241 Cory

Have you ever wondered what it is about throwing salt on ice that makes it melt? These questions and many more about freezing and thawing will be investigated as we MAKE OUR OWN ICE CREAM!

passport stamp

Flight: Theory and Design
Human Powered Vehicle
Room: 247 Cory

Come and build paper planes and compete against your friends! We'll teach you the basics of flight, some of the tradeoffs when designing airplanes, and give you cool plane designs!