



Outreach Playbook

Envision 2022

Metrics:

Grade Level:	# of Student Participants:	Duration (hrs):	# of SWE Volunteers:	Partner orgs (if any):
9-12	40	12	20	

Overview of Activity

Envision is SWE at UC San Diego's annual outreach program, at which 100 high school girls in the San Diego area explore STEM fields. The event is meant to encourage women, especially 1st-gen college students, to join STEM. There will be 6 different activities relating to different engineering majors: Bioengineering, Chemical/Nanoengineering, Electrical Engineering, Structural Engineering, Mechanical Engineering, and Computer Science. There will also be panels where students can hear from UCSD students, UCSD alumni, and professors.

By the end of the event, participants are able to give a high level overview of at least three different engineering fields. This will be facilitated through the activities of presentations from engineering students that easily explain the field and hands-on experiments that the participants will be completing remotely.

By the end of the event, participants were inspired to pursue engineering and continue to learn more about the different disciplines. This will be facilitated by having hands-on activities for all participants as well as having student and professor panels to learn more about what it means to be a female in engineering. There is a SWENext presentation done at the event where the goal is for participants to be aware of the different opportunities for them such as SWENext and possibly start their school's section. This will be facilitated by discussing SWENext during our last session as well as sending SWENext brochures to all participants.



Outline and Script

Give a detailed description of the steps and optional talking points for those utilizing this activity, leading them through the entire process of the activity. Include clear references to when different materials are used and good questions/points to get the students thinking. Include any resources about the topic (such as links to websites) that could be useful to others.

(instructions and materials for major activities will be submitted as supplemental materials)

OUTLINE: (Pink and Blue activities were done at the same time)

DAY 1

10:00 am - 10:30 am: Opening address for Envision which will include what is SWE, Envision and instructions on the format of the event; Talk from Company Speaker

10:30 am - 12:00 pm: Project activities for computer science and computer engineering. This will include a presentation by current computer science and engineering students and a hands-on activity related to the majors. – CS workshop

10:30 - 12:00 pm: Project activity for bioengineering. This will include a presentation by current bioengineering students and a hands-on activity related to the majors. – Fruit DNA (http://sciencecafe.org/content/extract-dna-from-fruit/?fbclid=IwAR2VNseQi5mmlsb4vbaJW8u2_IUyliCUP9SAsXgFtWICZIVQchxnNtJNde0)

12:00 - 1:00 pm: lunch break

1:00 pm - 1:30 pm: Student Panel where current female undergraduate engineering students talk about their experiences and give advice to participants.

1:30pm - 3:00pm: Project activity for electrical engineering. This will include a presentation by current students and a hands-on activity related to the majors.- Electric Dough (<https://youtu.be/weUxDIcJn9c>)

1:30pm - 3:00pm: Project activity for chemical engineering/nanoengineering. This will include a presentation by current chemical engineering students and a hands-on activity related to the majors. – Cabbage Color Change Activity (https://www.sciencebuddies.org/science-fair-projects/project-ideas/Chem_p013/chemistry/make-cabbage-pH-indicator#materials)

DAY 2

9:00 am - 10:00 am: Parent session where we will advise parents on how to best support their daughters' pursuit in engineering. - FINANCIAL AID

10:00 - 10:30 am: Professor panel where current female professors will share their stories and how to best excel as females in engineering

10:30 am - 12:00 pm: Project activity for mechanical and aerospace engineering. This will include a presentation by current mechanical and aerospace engineering students and a hands-on activity related to the major.

10:30 am - 12:00 pm: Project activity for structural engineering. This will include a presentation by current structural engineering and electrical engineering students and a hands-on activity related to the major. (https://www.sciencebuddies.org/science-fair-projects/project-ideas/CE_p007/civil-engineering/suspension-bridges#procedure)

12:00 pm - 1:00pm lunch break

1:00pm - 1:30 pm: SWE Alumni Panel

1:30 pm -1:50 pm: Discuss high school opportunities. We will discuss opportunities such as SWENext that high school students can participate in to continue their interest in engineering. 1:50 pm - 2:10 pm: Closing ceremony. We will recap the event and thank all participants and volunteers.



Lessons Learned

Share things that worked well when you executed this activity, helpful tips, do's and don'ts, and other best practices. What would you do differently if you did the activity over again?

- Be sure to test out the activities before doing it with the students
- All the activities were successful!
- Prepare questions to guide students to explain what is going on

Accessibility Adaptations

Provide examples of ways to adapt this activity with a smaller budget, lack of internet access, with students that are completely virtual, with ESL students, or any other important accommodations that your group has experience with. If your group did not offer any accessibility accommodations, do your best to come up with at least one.

- These activities were done remotely, and the materials were sent to each student
- The materials for these activities were purchased with a low budget and use items that can be found in the grocery store or on amazon.
- For those who are not able to attend the event, instructions and materials were sent.



Materials and Costs

List out each item/material used in this activity, cost for each item, purchase location, and total cost of the activity. If used, include any local grants (or similar funding) utilized or online resources that were helpful.

Item	Quantity	Where to Buy (link if applicable)	Total Cost
Excel sheet has list of materials and cost.			



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Describe any additional funding sources outside of section budget (if applicable):

funding received from SWE as well as other sources from UCSD.