

Space for You

Exploring Our Future in Spaceflight

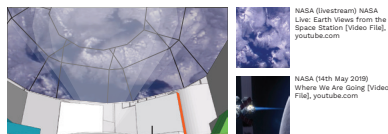
Project Description

Explore possibilities in space exploration through new careers and emerging technologies.

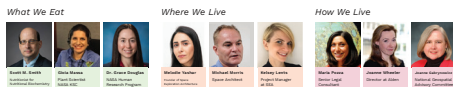
Career opportunities in space exploration are rapidly expanding, however, the variety of careers in the industry is widely unknown. The goal of this exhibition is to help the audience envision their potential role in space exploration across a range of professions from agriculture to law. Through familiar activities and interactive exhibits, the audience will learn new concepts and cultivate curiosity. This exhibition hopes to encourage the audience to build the future and unlock their potential.

Exhibition Overview

Projection Dome
The dome is a area to show the latest news and video about space exploration



Featured Professionals
By featuring diverse professionals, the future of space exploration becomes more tangible.



Audience Personas

Primary Audience 5th graders



Eduardo loves science and wants to learn more about space travel.



Jessica is interested in pursuing a career in space, but doesn't know where to start.

Secondary Audience Teachers and chaperones



Jackson is a teacher who likes to keep his students engaged by taking them to museums.



Maria is a chaperone accompanying her child on school field trips.

Tertiary Audience Community members



Connor is a veteran who is passionate about airplanes and is excited to see what the future holds.



Bernadette is a single mom who is looking for an event to keep her children occupied.

Resources

Visitors can find a camp or more information.



Resource Cards

Website

Color Palette

Colors are inspired by the temperature of stars.



Typography

The type is inspired by maker spaces and engineering.

Titles
Axia Stencil Light
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNORSTUV
1234567890

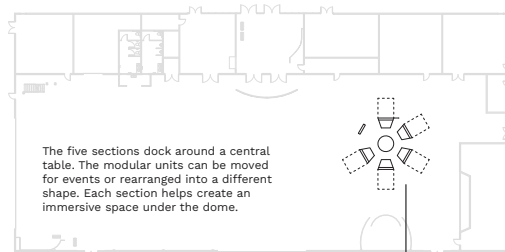
Body Copy
Work Sans Medium
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNORSTUV
1234567890

Graphic Elements

Conversational bubbles are used in the exhibit to inspire curiosity



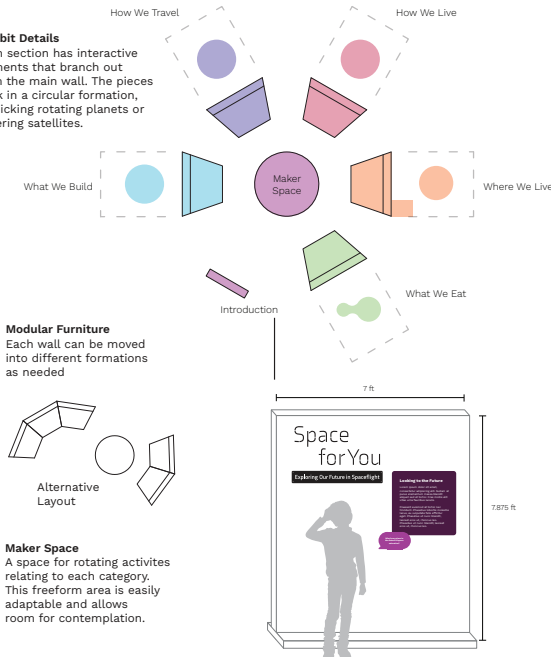
Floor Plan



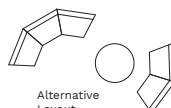
The five sections dock around a central table. The modular units can be moved for events or rearranged into a different shape. Each section helps create an immersive space under the dome.

Exhibit Details

Each section has interactive elements that branch out from the main wall. The pieces work in a circular formation, mimicking rotating planets or hovering satellites.



Modular Furniture
Each wall can be moved into different formations as needed



Maker Space
A space for rotating activities relating to each category. This freeform area is easily adaptable and allows room for contemplation.

Lookbook

Modular Portable Walls



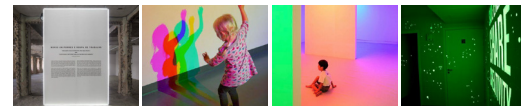
Breakfast Machine

Sidewalk Toronto

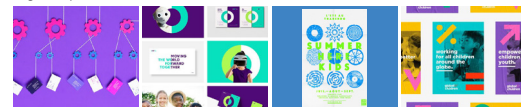
Projection Dome



Lighting



Bright Graphics



Crack the Code

Global Fund for Children

Summer Here Kids Fest

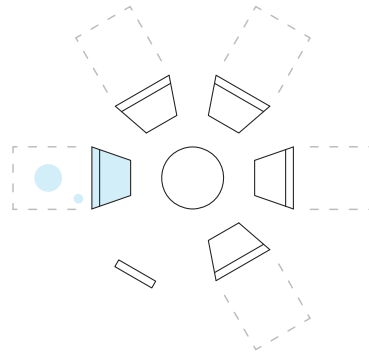
World ORT

What We Build

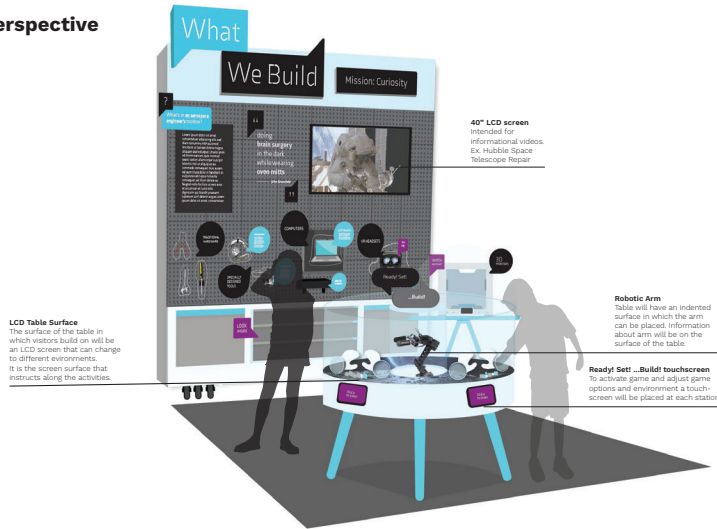
Aerospace Engineers are fast thinkers and persistent problem solvers who utilize curiosity to envision space exploration.

Overview

The conceptualization of the "What We Build" station started with conducting research on the fundamental principles of engineering in the context of space exploration. The research provided the understanding of the facets of the field. Space careers in engineering, robotics, and material sciences generate the knowledge needed to advance space exploration. Their vision and persistence to innovate the field has enabled them to create software that continuously aids their efforts to understand the arrival of humans in Mars. They engineer and build robots that assist humans with tasks that humankind is unable to undertake. They continuously push the boundaries of what humans can do and build in space. Consequently, the main purpose of this station is to teach visitors the core values of an engineer: persistence, fast thinking, and curiosity. If visitors can leave the station understanding and engaging with the core values of an engineer, they will be one step closer to wanting to learn more about the aerospace industry. This exhibition is designed to currate an experience that allows young visitors to feel inspired to pursue a career related to aerospace engineering.



Perspective

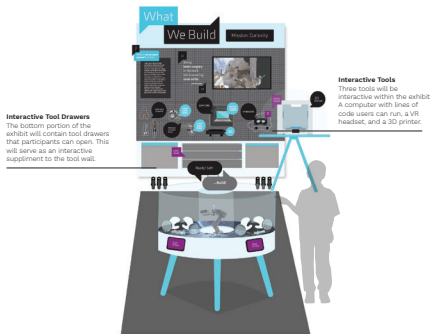


Through the "What We Build" station visitors will have the opportunity to see how engineering plays a significant role in space exploration. Logistically, this will occur through two sections within the station, 1. "What's Inside An Engineer's Toolbox?" and 2. "Ready! Set! ...Build"

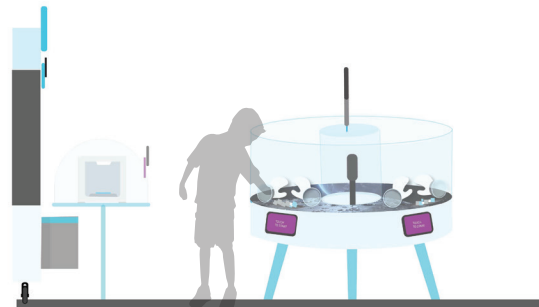
The "What's Inside An Engineer's Toolbox?" station will allow visitors to become familiar with the tools engineers use. Various tools will be placed on pegboard on display for users to view. The tools will be noted for their context of three different environments: on Earth, inside the ISS, and in outer space. This is important because the three different environments influence the kinds of tools that engineers need. Likewise, by exposing visitors to the different tools based on the different environments, they will have the understanding that tasks performed on Earth differ to the way tasks are performed in space.

Visitors will then move on to the "Ready! Set! ...Build" station where they will have the opportunity to place themselves in the shoes of astronauts. This will be done by inviting visitors to wear gloves and or oven mitts to respond to a specific situation using legos as their main material. Ultimately, the scenarios will simulate the effects of performing tasks in space where an astronaut's sense of touch is hindered by the space suit or by using a mechanical arm instead of your hands.

Elevation (Front)



Elevation (Side)



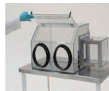
Materials



Legos



Latex Gloves

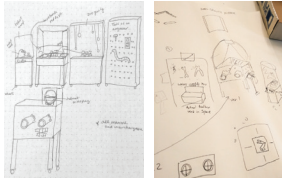


Glove Box Comparison



Oven Mitts

Sketches



The sketches above show the initial ideas when thinking about the creation of the station.

Lookbook



The table in the center of this exhibition is similar to the structure intended to be found in the center of the station.



Peg board to display tools



A robotic arm example



Inspiration for the "Ready! Set! ...Build" station.



Distribution of objects



Station space distribution

SPACE FOR YOU
Melanie Montoya, Nicole Arteaga, & Slater Penney

DES 187 NARRATIVE ENVIRONMENTS
UC DAVIS DEPARTMENT OF DESIGN
6 June 2019

Space
for You

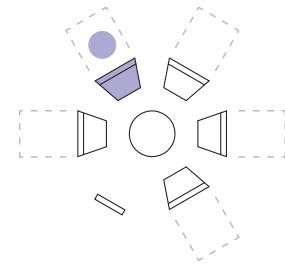
Exploring Our Future in Spaceflight

How We Travel

Commercial spaceflight technology will revolutionize the way we prepare for travel and connect humans globally, introducing new career opportunities, such as Spacecraft Technician, Mission Operations Manager, and Spaceflight Crew Member

Overview

Space technology and innovations have recently been at the forefront of personal and global investment. "How We Travel" ventures to provide visitors a glimpse into the future of commercial spaceflight through the ideas of some of the world's leading space organizations, such as Virgin Galactic, SpaceX and Blue Origin, and will feature some of the key women responsible for helping make these visions a reality. Visitors will be introduced to this developing area of spaceflight through multimedia units, and enjoy the experience of packing for intergalactic travel.



"How We Travel" is intended to give guests an overview of the technology and ideas being proposed and tested by today's leading space industries.

Through video, photography and VR components, visitors can take a look into the prospective future of commercial space flight. They will also see space-tested payloads on display—precursors to sending passengers on an orbital or suborbital trip. The central area offers an interactive packing experience designed to challenge museum guests and allow them to envision themselves packing for intergalactic travel aboard a spacecraft.

The exhibit also features individuals, mainly women, with new careers in the space industry, who are contributing to the advancement of commercial spaceflight.

Perspective



Featured People:
Elon Musk & Clare Pelly

Photo Loop Video
New Shepard Model Rocket

VR Experience

Video & Handheld Phone:
Julia Hunter, VP of Virgin Galactic

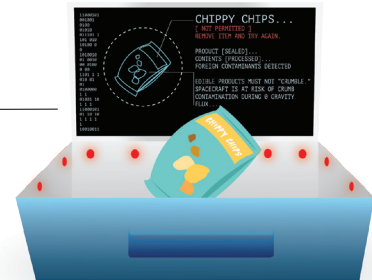
Video & Handheld Phone:
The Case For Mars

Packing Activity

Video & Travel Comparison Chart:
Earth to Earth Transportation

Mannequin Skywalker

Medical Microgravity
Suction Device



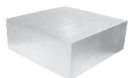
Front Elevation



Side Elevation



Materials



Aluminum



High Gloss Acrylic



Bio-Plastic: 3D Printed
Packing Objects.
(Environmentally Aware Material)



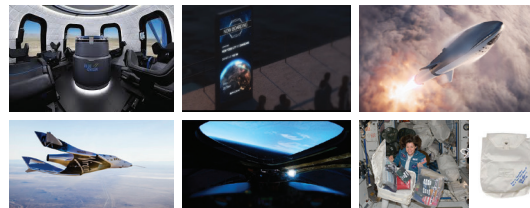
Touch-Screen Technology

Sketches



Our sketch process has transitioned throughout the development of the "Space Packing Experience", and resulted in an interactive packing station.

Lookbook



These images depict innovative technology produced by companies such as SpaceX, Virgin Galactic and Blue Origin for future space travel. They also serve as inspiration for the interactive and graphic components of this exhibit.

SPACE FOR YOU
Josh Novello, Tracy Sam, Melissa Arechiga

DES 187 NARRATIVE ENVIRONMENTS
UC DAVIS DEPARTMENT OF DESIGN
June 6, 2019

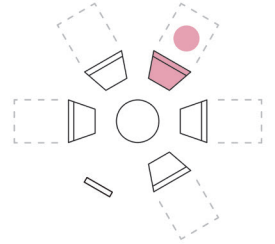
Space
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Exploring Our Future in Spaceflight

How We Live

Overview

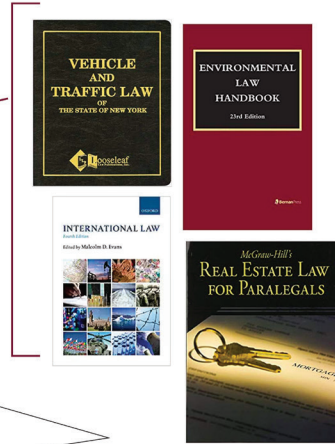
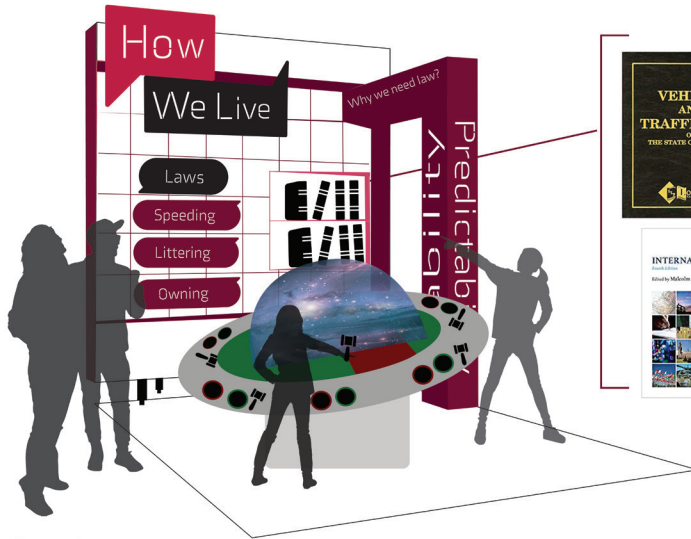
Our concept is how we live in space. We touched on the topics of space law and why we need it to regulate space. In order to establish stability and predictability, we need these rules to keep things in order. Currently, space lawyers are working on laws for littering in space, also known as orbital debris. We will use space in the future, and if we put litter up in space, we can no longer use it and will even interfere with our living on Earth. To keep space clean, we will need regulations to keep orbital debris in control.

Our project focuses on five different topics for space law. We wanted our audience to interact with space laws similar to the ones on Earth. There are laws for speeding, littering, ownership, responsibility, and jaywalking. These laws could also be applied to space!



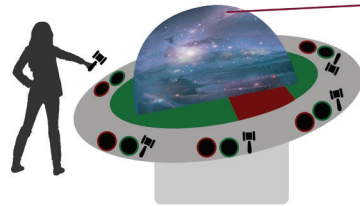
Floor plan

Perspective

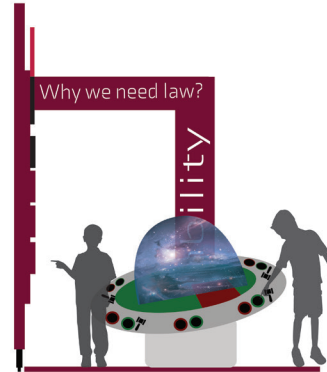


This is the interactive table where our audience gets to vote. There would be a hologram being projected in the middle. Questions will appear and our audience gets to hit these drum pads with the toy gavel. Green and red corresponds to yes or no for regulating the law. When all the votes are calculated, they will appear on the rim of the hologram, showing how many people voted yes and how many voted no. Depending on the answer, the hologram will show either the results or the consequences.

Elevation (Front)



Elevation (Side)

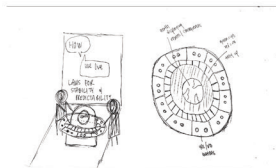


Materials



Glass dome will be used along with the projector, metallic feel, drum pad buttons for hitting with toy gavel

Sketches



Kids interacting with centerpiece where they would be asked to vote of different topics of space law.

Lookbook



We are inspired by the hologram looks and the concept of an interactive table.

Where We Live

Building on Mars will be very different from what it is on Earth and will employ a range of professions from architects and urban planners to mining engineers

Overview

The 'Where We Live' Station focuses on creating habitats on Mars. The whole station will be divided into 3 sections. Two of these sections will address the core question of 'Where do we live on Mars?'. One section will be addressing the interior space people would be living in, while the second station will address the physical land we will be on (Mars). The 3rd section is more informative and broad. Its purpose is to give more context to Mars' Environment (by using interactive and tactile activities for students to experience Mars) as well as answer any broad questions like 'Where else can we live?' and 'Why not just stay (on Earth)?'. Here the exhibit will showcase its main artifact-- a 3D printer-- as well as prototypes that college students from local campus have designed of Mars structures. For the interior space section, participants can get familiarized with the work NASA and students nationwide have put into developing spaces habitat that would work on Mars. They would then be invited into an interactive activity where they too can create their own model colon community. For the external space section of the station, the participants will be invited to drop their model colony into a large globe representing Mars' surface.

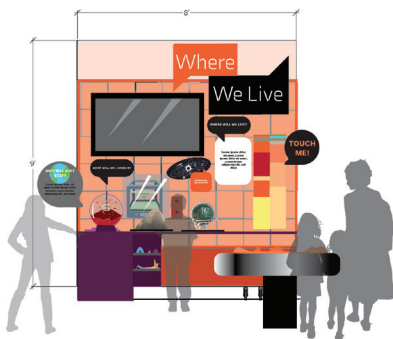
Front and Back Perspectives



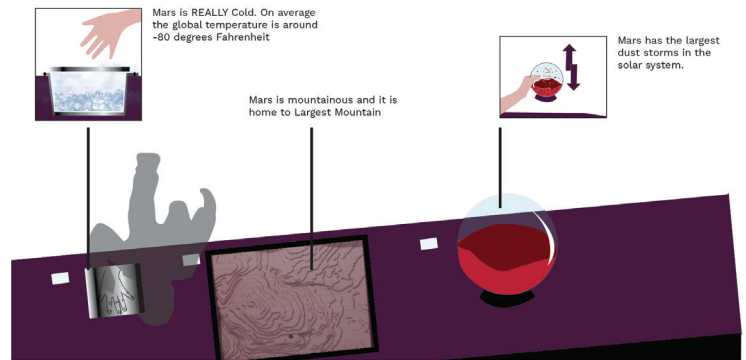
Particular and important Take-away points for the 5th grader audience:

- Learn about the different professions that would make building & living on Mars possible.
- Learn about Mars' environment. This is important so that the students can familiarize themselves with the different environmental constraints that the Mars has (using the sensory interactive activity that simulates Mar. We would simulate how cold, how mountainous and how there are many dust storms on Mars). We will introduce this so the students can critically think about these factors as they build their own structures later in the exhibition.
- See and expose the students to other young peoples that are only slightly older than themselves that are working towards making living on Mars possible.
- For the students to have an outlet to engage and to creatively problem solve (through the Main interactive activity)

Elevation (Front)



Top View of Activity Table



The activity table would teach visitors about different aspects of Mars.

Materials



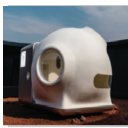
Plywood



Colored Sand



Custom Plastic Shapes



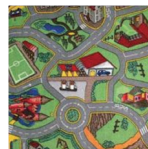
Habitat Prototypes from College Campus

Sketches

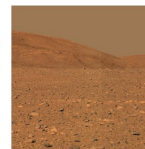


Concept Sketch

Lookbook



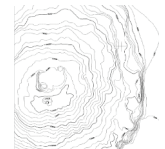
Play Mat



Mars' Surface



Legos



Topograph of Mars



Plywood Design Piece from Pinterest,



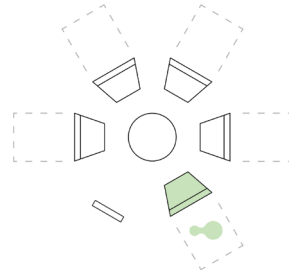
Snow Globe

What We Eat

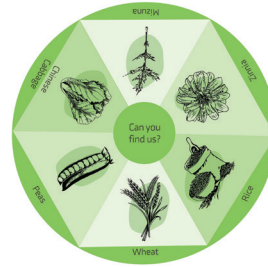
Growing food in space will be a challenge and rely on the expertise from many professions including farmers, nutritionists, and plant scientists.

Overview

The three sections of this exhibit will educate and inspire visitors about the possibilities of the future of farming, human diets and disposal of human waste all while in space. Broken down into categories, Grow, Eat, Dispose, visitors will learn about current and proposed space technology through interactive elements, testimonials, and real objects. A main feature of this exhibit is a living terrarium consisting of six different plant varieties, such as Dwarf Wheat, Chinese Cabbage, and Mizuna, currently used in orbital growing units called Veggie.

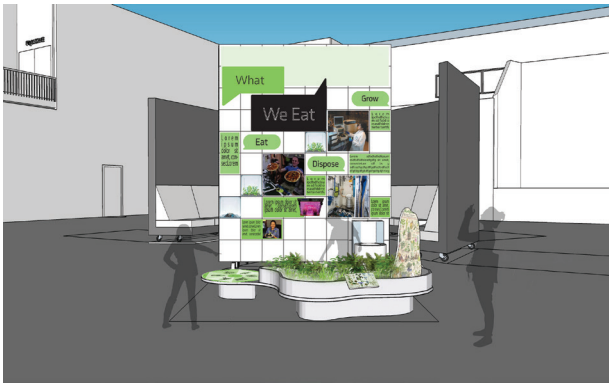


Perspective



Visitors are encouraged to spin the wheel with the prompt "Can You Find Us?" Once the wheel has been spun it will land on one of six plants- Zennia, Dwarf Wheat, Pea Plant, Rice, Chinese Lettuce and Mizuna. Visitors then find the plant that the wheel landed on in the terrarium itself. The significance of the six plants is that they have all been grown in space. Research has shown that these plants have many different benefits for space growth. Some being that they are quick to germinate or need less water. Visitors can learn more about the plants and space agriculture by reading the plaques along the terrarium.

Elevation (Front)



Elevation (Side)

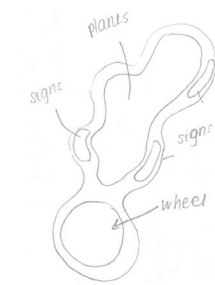


Materials



White acrylic for the terrarium base. Plexi-glass for on the wall display cases. Baltic Birch plywood for the wheel. Six plant varieties that reflect those on the interactive wheel.

Sketches



Initial sketch for the final rendered version of the terrarium and wheel design.

Lookbook



Inspiration of look, form and content for the terrarium element of the design.