

Capacity-building

¡Bienvenidos y bienvenidas a la familia!

WHO WE ARE DEFINES OUR WORK AND HOW OTHERS PERCEIVE US.

Including a professional, fun, diverse and inclusive vision brings families together and builds trust in the communities we serve.



Project Overview

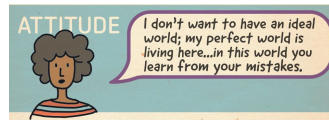
Engage families in engineering design challenges through a sustainability and biomimicry lens. Families advance their engineering proficiencies while learning from nature to create a livable future.

Primary Audiences

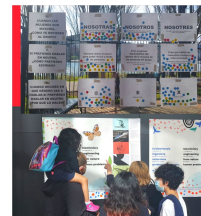
Public Audience: Families with children, particularly with girls ages 9-14
Professional Audience: Exhibit Developers, Designers and Facilitators

Exhibit

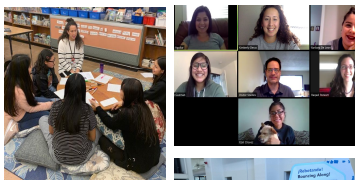
Front-end evaluation



Narrative and graphic input



Youth and Virtual Advisory Board Input



Prototyping



Exhibit big Idea

Biomimicry engages us with nature's strategies to design solutions for the challenges we face in our own communities and around the world.



Research

The C-PIECE Study and Framework

Collaborative Practices at Interactive Engineering Challenge Exhibits

Defining a Problem	Beginning	Intermediate	Informed
	<ul style="list-style-type: none"> Immediately attempts challenge 	<ul style="list-style-type: none"> Reads or listens to information provided Explores resources Watches others Prematurely attempts challenge 	<ul style="list-style-type: none"> Considers benefits and trade-offs of materials
Design Progression		<ul style="list-style-type: none"> Discusses/plans design other than materials Brainstorms ideas Identifies/assigns roles 	<ul style="list-style-type: none"> Discusses questions/ideas about the process with others Identifies/describes criteria or constraints Relates content to prior experience States a goal Defines problem within context
Goal Orientation	<ul style="list-style-type: none"> Perceives goal as straight forward 		

Improving a Design	Beginning	Intermediate	Informed
	<ul style="list-style-type: none"> Runs through single cycle Confounds variables 	<ul style="list-style-type: none"> Adjusts testing conditions Completes multiple tests 	<ul style="list-style-type: none"> Tests specific variables Completes multiple iterations Continues testing
Design Modification	<ul style="list-style-type: none"> Identifies pros/cons of design Diagnoses issues Describes what happened 	<ul style="list-style-type: none"> Applies causal modifications Makes decisions based on aesthetic or superficial characteristics 	<ul style="list-style-type: none"> Explains results Compares to own past performance or record Quantitatively assesses goal completion Focuses on problematic subsystems Brainstorms ways to make successful prototype better Optimizes design and materials
Goal Achievement	<ul style="list-style-type: none"> Subjectively assesses goal completion 	<ul style="list-style-type: none"> Qualitatively assesses goal completion 	

This research helps professionals support families' exercise of informed engineering practices.

Project collaborators

Designing Our Tomorrow is a collaborative project, with team members, partners, and advisors from the following institutions: • Oregon Museum of Science and Industry (OMSI) • Adelante Mujeres • Biomimicry Institute • Fleet Science Center • Arizona State University • Exploratorium • Museum of Science Boston • Oakland Museum of California • Oregon State University • Rockman et al • Science Museum of Minnesota • TERC • University of Notre Dame • Yellow Cow Consulting • Universidad Autónoma de Yucatán • Schumacher Center for a New Economics • Georgia Tech