

*The Fish Garden Project:  
A Suspended Sea of Mobiles*

Educational Workshop:  
Design and Implementation  
by Alexandra Sargent Capps

# Project Message

## Alexandra Sargent Capps

On a recent trip to Delaware to visit my high school ceramics teacher, Marijke van Buchem, I noticed fish peaking out at me from under boxwoods in her backyard garden. I was intrigued, engaged, and inspired. They were magical. I could see from the way she made them, with shape and decorative pattern variations, that creating artful fish was artistically freeing.

Marijke was always a conjurer with ceramic glazes. She was always testing and excited to show students that art is unpredictable. Whatever came out of the kiln needed to be considered a happy surprise. She encouraged her students to let go of preconceived notions of our project outcomes. Because of this approach, I ran to the kiln multiple times during the day to see if our pieces were cooled and ready, awaiting the big reveal.

All students should experience the magic of the freedom of creation. Waiting for your results. Trusting the process. The magic of the unknown product that emerges from the kiln. These are experiences I hope this project offers.

I hope for additional outcomes, including learning about sustainability, experiencing the magic of making one thing into something else, working with others to create a collective product...these are the magic of creative endeavors, working across boundaries with others, letting go of your preconceived notions.

A magical global garden that embraces freedom and connection is my hoped-for outcome of this project, no matter how it evolves and emerges.

Please utilize the information that follows to make your own version of this project. Capitalize on your strengths, available supplies, and whatever brings your participants joy and a positive creative experience.



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## Introduction: Concept Statement

The Fish Garden Project: A Suspended Sea of Mobiles

This educational workshop is designed, through making a **collaborative public art piece**, to teach fashion sustainability, textile waste, single-use plastic pollution, biomaterials, and the circular economy.

Participants collectively create **a suspended ecosystem of fish mobiles** made from **recycled and repurposed materials**. The installation evolves over time as new elements are added, rearranged, and transformed. The result is an immersive environment that visually represents the **interconnectedness** of human beings, marine ecosystems, fashion production, and waste streams.

The workshop is designed to be adaptable **for educators, artists, schools, makerspaces, museums, and community organizations worldwide.**

# Project Goals

## Teach:

- **Fashion sustainability:** Textile waste streams; Fast fashion
- **Single use plastic:** Polyester and synthetic fabrics
- **Upcycling and reuse**
- **Circular economy principles**
- **Biomaterial experimentation**
- **Collaborative making**
- **Ecosystem interconnectedness**

**Apply** this knowledge through the collaborative creation of a collective public artwork using:

- **Upcycled denim**
- **Additional recycled fabrics and found objects**
- **Biomaterial coatings and bio resin**

**Create a space** where participants can:

- **Create a public art installation**
- **Re-make discarded materials**
- **Collaborate creatively**
- **Imagine circular solutions**
- **Celebrate artistic freedom and experimentation**
- **Re-think systems of waste**
- **Re-make discarded materials**
- **Collaborate creatively**
- **Imagine circular solutions**
- **Celebrate artistic freedom and experimentation**

## Re-Making is a Metaphor for Re-Thinking...

When we learn to see objects differently, we learn to imagine the world differently.

### In this project we re-think:

**Garden:** What is a garden? a blend of land and sea.

**Art:** What is art? a collaboratively created changeable composition that can be re-balanced by all participants. The textile waste stream:

**Trash?** discarded clothing with value in recycling and upcycling.

**Fabrics:** Polyester is plastic and the same thing as plastic bottles

**Single use plastic:** a commonly used item devastating our marine life and planet

**Biomaterials:** plastic alternatives that break down with less harm our planet

## What if we never threw anything away?

# Project Design

Mobiles will include:

- Fish made from recycled materials, with a focus on denim, treated with bio resin
- Bio resin circles that can represent elements of the ecosystem: sky, sun, grass/earth, water
  - Globes: of varying materials
- Plastic bottles cut, melted, and transformed in any way that does not create more microplastics including fish, flowers, and additional natural elements that represent gardens
- Photographs/images which can be giant posters, or small hanging images, or representations of natural environments, animals including fish, sea, sky, sun, moon, clouds, stars
  - Images that combine any of the above



## Collaborate with others to prepare customized versions of the Global Fish Garden

- Design and implementation solutions will be based on:
  - Exhibit space
  - Available supplies
- Connected artists and participants skills
  - Learning objectives
- Goals agreed upon by project collaborators

## The ideal resultant garden:

- All mobile elements will be removable and moveable so that the composition will continue to change
- Participants will feel empowered by being able to make changes



From Educational Coach and Facilitator Andreea Gatman of <https://actonlearning.org/>

"Fish Gardens invites visitors into a slow down, an attentive space where daily tempos and rhythms become material for sensing the world collectively. Inspired by the Biennale's call to dwell "in minor keys," the installation explores how we become good-enough ancestors by practicing radical presence, resonance and meraviglia—wonder as a form of responsibility. Here, we weave spatial patterns, relational affinities and the fertile not-knowing from which new convergences emerge. Fish Gardens is a social artifact and a living workshop: a place to notice how our movements, gestures and material interactions reveal the hidden support structures that shape sustainable choices. By welcoming others into our place, offering gifts drawn from nature, and imagining how we wish to leave this place for those who follow, participants co-create unpredictable stories of love, time and ecological kinship."



# Why Fish?

they...

- Connect the planet
- Share our environmental global challenges
- Their shape is simple and endlessly variable for creating art



# Environmental and Educational Context

## Problem Statements

### Environmental Problem Statement

Our current production model of disposable fashion and single-use plastic is environmentally and ethically unsustainable.

### Educational Problem Statement

Students increasingly crave hands-on creative engagement within educational systems which are currently often dominated by standardized testing and passive learning structures.

### Environmental Messaging Core Ideas

- Human beings are deeply connected to the natural world.
- Existing clothing and waste materials can be transformed creatively.
- Biomaterials represent an important future alternative to single-use plastic and synthetic textiles.
- Art can function as environmental education.

# Environmental Problem Statement Example



**350 million**  
tons of  
plastic waste  
produced  
(1)

**500,000 tons**  
of microplastic  
s from textiles enter  
marine environments  
(3)

**14 million**  
tons of  
plastics enter  
our oceans  
(2)

**Synthetic textiles**  
**are** one of the  
largest sources of  
microplastics in the  
world's waterways.  
(4)

**92 million tons**  
of textile waste  
produced  
(2)

**Plastic pollution**  
affects marine  
ecosystems and  
ultimately  
human health

1. <https://ourworldindata.org/plastic-pollution>
- 2..<https://www.sciencedirect.com/science/article/abs/pii/S0025326X25007544>
3. <https://www.sustainablejungle.com/seaweed-fabric/>
4. <https://scienceinsights.org/how-does-clothing-waste-affect-the-environment/>



## Research Process and Outcomes

Bio Materials

Materials & Supplies  
for Fish & Hanging Mobiles

# Bio Materials

## What are they and how do they connect to this project?

### 3) Biomaterials

(especially products being made from ocean elements)

- “Seaweed may be the most generous resource on Earth.”
- “Replacements for plastic—inspired by nature, designed to regenerate—enable a healthier planet and true biological circularity.”
- Technologies: already commercially available and widely adopted, shift away from petroleum, leverage renewable sources including corn, potato, sugarcane, and wood-based plastic alternatives.
- A new wave of “next-generation” materials made with feedstocks that are regenerative. Mycelium, coconut shells, coffee grounds, pea protein, wetland grasses, and countless other renewable resources are now being leveraged into new innovations while offering ecosystem benefits throughout the value chain.
- <https://kogod.american.edu/news/from-sea-to-soil-how-biomaterials-are-shaping-our-circular-future>
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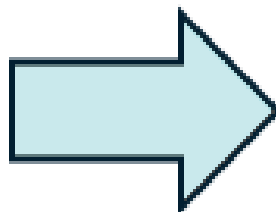


“Ship in Seaweed. Shop in Seaweed.” <https://swaythefuture.com/>

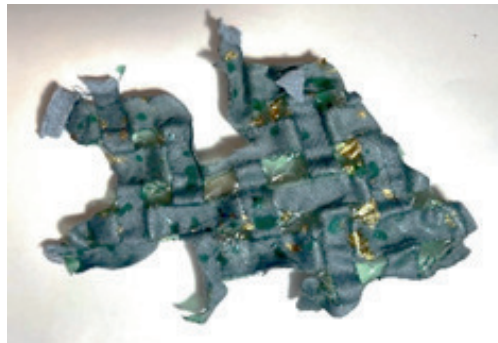
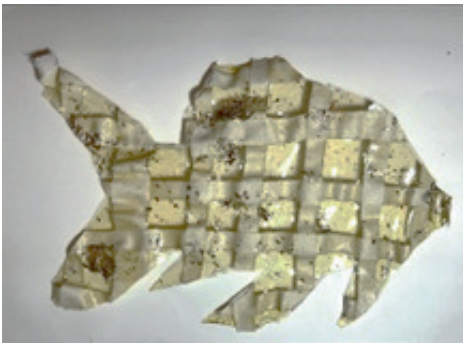
# Sourcing Secondhand Materials



Secondhand and waste-stream environments include thrift stores, salvage centers, and donation outlets

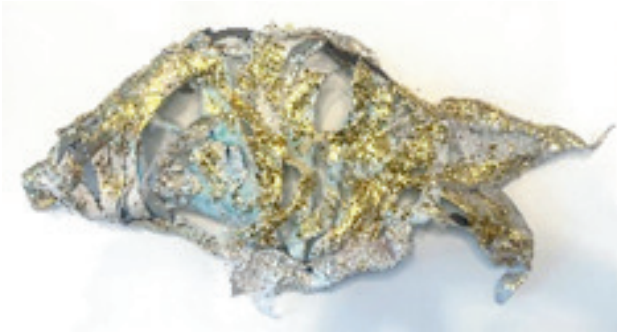
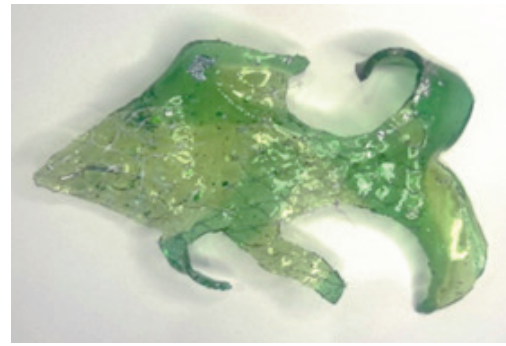


# Material Research



1. Woven denim with bio resin poured on, dried held down by binder clips
2. ½ scale dress for bio resin sculpture with denim strips
2. Laser Cut Samples
3. Bio Resin Dried and Transformed

# Material Research



- 1 & 2: Bio resin with food coloring, gold leaf, metal trash, plastic turkey wrapping
- 3 Leather, mesh, gold leaf
4. Demin jeans including the back pocket
5. Denim with green and silver leaf

# Material Research



Bio resin circles (earth, sky, sun)  
to help build the mobile ecosystems

Denim fish with bioresin and different colored leaf

# The Making Process

## Hanging and Suspension Materials

- Small clips
- Fishing line / nylon hanging wire
- Organza ribbon
- Assorted wire
- Crimp sleeves
- Swivel hooks
- Wire cutters

## Suggested Material Sources

- Online Supply Sources
  - Amazon
- Hardware stores
- Thrift stores
  - Goodwill Outlet centers
  - Salvage and reuse centers
  - Fabric recycling programs



# Mobile Construction & Hanging Systems

Many recycled items can become mobiles with which to create different types of ecosystems. I have gone to the local Goodwill Outlet, where everything is in large bins and sold by the pound, and for my mobiles recycled:

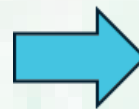
Rectangular metal grids

Lampshade frames

Metal birdcages and assorted structures

A child's bouncy house interior metal pieces, made to build an ecosystem from

Clothing as decorative pieces for the mobiles



<b>Suggested Supplies, where to find them. and prices</b>			
<b>#</b>	<b>What</b>	<b>Where to Purchase</b>	<b>Price</b>
1	BIHRTC Pack of 50 Curtain Clips	Amazon, link below	\$7.99
<a href="https://www.amazon.com/dp/B01M01I3QL?ref_=ppx_hzod_title_dt_b_fed_asin_title_0_0">https://www.amazon.com/dp/B01M01I3QL?ref_=ppx_hzod_title_dt_b_fed_asin_title_0_0</a>			
2	Hanging Wire Clear, Acejoz Thick Fishing Line Nylon	Amazon	\$9.99
<a href="https://www.amazon.com/dp/B08M99S124?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_3">https://www.amazon.com/dp/B08M99S124?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_3</a>			
3	98Feet(30M) Picture Hanging Wire with 40Pcs	Amazon	\$3.99
<a href="https://www.amazon.com/dp/B0F63B7GDP?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_4">https://www.amazon.com/dp/B0F63B7GDP?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_4</a>			
4	40 Pack Heavy Duty Stainless Steel Clothes	Amazon	\$7.99
<a href="https://www.amazon.com/dp/B07S3W5PZ8?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_3&amp;th=1">https://www.amazon.com/dp/B07S3W5PZ8?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_3&amp;th=1</a>			
5	40 Pack Stainless Steel Small Clothes Pins	Amazon	\$5.88
<a href="https://www.amazon.com/dp/B081GF2SSD?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_4">https://www.amazon.com/dp/B081GF2SSD?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_4</a>			
6	Jetec 30 Pieces Wind Spinner Swivel Hooks 360		\$9.99
<a href="https://www.amazon.com/dp/B08X6ZSSDP?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_2&amp;th=1">https://www.amazon.com/dp/B08X6ZSSDP?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_2&amp;th=1</a>			
7	3/8 Inch light blue Organza Ribbon for Gift Wrapping.		\$9.99
<a href="https://www.amazon.com/dp/B0BN1H4B4Z?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_51&amp;th=1">https://www.amazon.com/dp/B0BN1H4B4Z?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_51&amp;th=1</a>			

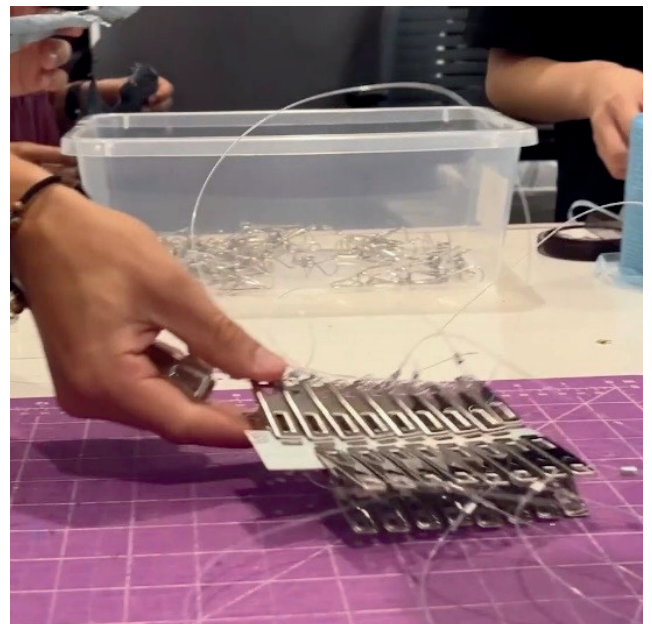


Photo Credit: Alex Sargent Capps

The background of the page is an abstract, artistic composition of wavy, translucent shapes in various shades of blue and green. These shapes overlap and flow across the page, creating a sense of movement and depth. The colors range from light, airy blues to deeper, more saturated greens and blues. The overall effect is reminiscent of water ripples or soft, ethereal clouds.

# **Lesson Plan and Educational Framework**

# Lesson Plan for The Global Fish Garden Collective by Alex Sargent Capps Duration: 1-2 hours



## Project Description

The Global Fish Garden Collective is a collaborative art project in which participants create denim fish forms treated with bio-resin and suspend them as part of a growing mobile installation.

Students transform discarded materials—including used denim and plastic bottles—into sculptural forms that collectively become a garden ecosystem of mobiles. The installation evolves as participants continually add and rebalance elements. The project process and outcome, emphasize creativity, regeneration, and collective responsibility for the natural world. The installation becomes a living representation of balance, transformation, and environmental interconnectedness.

Through the act of making, students explore how waste materials can be reimaged as meaningful design objects, while reflecting on sustainability, collective authorship, and environmental stewardship.

## Learning Objectives

**By the end of this lesson students will be able to:**

1. Explain key environmental issues related to the textile waste stream and single-use plastics.
    2. Identify differences between natural and synthetic fibers, with a focus on denim.
    3. Apply sustainable design principles through the upcycling of discarded materials.
    4. Create sculptural textile objects using bio-resin techniques.
    5. Participate in a collaborative art installation, contributing to a collective artwork.
- Reflect on circular economy principles and how art can inspire environmental change.

## Key Concepts

- Sustainable fashion
- Fast fashion and textile waste
  - Circular economy
  - Upcycling
- Collective art practice
  - Ecosystems and environmental metaphors
- Bio-based materials

## Instructor Preparation:

- Slide presentation (PowerPoint/PDF) OR use the one provided as part of this prepared Lesson Plan
  - Bio-resin
- Materials and mobile elements for students to build the ecosystem
  - Prototype examples: Bio resin-treated textile samples; denim, quilted, woven, and mixed denim fish; embroidery hoops with bio resin

### Fish Construction Materials

- Used denim in various colors
  - Fish patterns
- White paper or cardstock
  - Rulers
  - Fabric scissors
  - Paper scissors
- Sharpies or acrylic paint markers
  - Non-stick cookie sheets

### Cooking/Bio Materials

#### Bio-Resin Materials

- Gelatin, Glycerin, Water , Food coloring
  - Heat source or burner , Used non-stick cooking pots
- Sustainable gloves, Wooden spoons

### Bio-Resin Recipe

#### Ingredients

- ½ cup water
- 3 tablespoons gelatin
- 1 teaspoon glycerin
- A few drops of food coloring

### Cooking Instructions

1. Combine gelatin and water under low heat.
2. Stir thoroughly until dissolved.
3. Add glycerin and food coloring.
4. Heat for at least 15 minutes without boiling.
5. Longer cooking reduces water content and shortens drying time.

### Additional Installation Materials

Embroidery hoops (3–8 inch diameter recommended)

Clean PET plastic bottles

Heat gun

Belt hole punch or hole punch

### Mobile Construction Materials

- Hanging grid structure
- Assorted supplies: recycled textiles, used lampshades, wire circles...
- Hanging clips
  - Wire, nylon thread, or ribbon
    - Mobile wire
    - Crimping wire
  - Jewelry/wire plyers and cutters
- Wire and clips



### **Biomaterial ingredients**

# Project Steps/Instructional Procedure

## 1. Introductory Presentation (30–40 minutes)

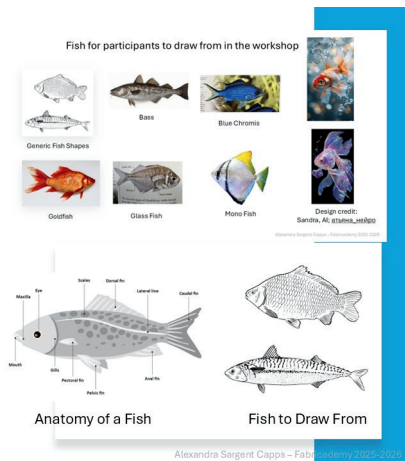
Students view a slide presentation on sustainability, including:

- The fast fashion industry
- The global textile waste stream
- Natural vs. synthetic fibers
- Circular economy concepts
- Denim: fiber content, weave, durability, cultural history
- The history of single-use plastics
- Links between synthetic fabrics and plastic waste
- Connections between waste streams and ocean ecosystems
- Ocean plastic pollution statistics
- Bio materials and future alternatives to plastics

### Workshop Kit: Materials & Lesson Plan

#### Workshop Materials

- Educational Slide Deck
- Slide and handout of fish to draw from
- Drawing materials
- Discarded items to recycle including denim and single use plastic items
- Scissors & pins
- Heat gun
- Sharpies/acrylic markers
- Bio resin recipe and supplies
- Also needed: hanging devices; fishing line; small clips



#### Tools & Supplies Include:

- Heat gun
- Hot glue gun and glue sticks
- Wire, assorted weights
- Wire cutters
- Pliers, assorted shapes and sizes



## 2. Design and Planning (15–20 minutes)

Students Individually:

1. Examine fish patterns and reference images.  
Determine the size and design of their fish.  
Sketch possible forms and surface designs.

Optional Design Approaches:

Patchwork denim , Quilted surfaces, Mixing denim tones (white, light blue, medium blue, dark blue) , Decorative stitching , Exterior seams for sculptural texture

### **3. Fish Construction (15-45 minutes)**

#### **Student Individually:**

1. Cut fish shapes from upcycled denim and potentially also additional recycled fabrics, plastic waste, found materials
2. Decorate using markers or stitched embellishments.
3. Sew or assemble fish forms
4. Students sign their fish to acknowledge their contribution to the collective installation.



### **4. Additional Sculptural Elements (Optional) to create a garden-like ecosystem.**

- Plastic bottle flowers using heat guns
- Globes, water forms, or bubbles
- Bio-resin filled embroidery hoop elements to make clouds and suns

### **5. Transform**

Treated fish forms with bio resin and allow drying/stiffening process, about 24 hours



### **5. Mobile Assembly (10-20 minutes)**

#### **Participants collectively:**

- Attach fish and other elements to mobile wires.
- Balance the structures.
- Adjust placement to maintain equilibrium.

Participants continually rebalance the mobile as they add new pieces, reflecting the evolving nature of ecosystems.

### **6. Build Ecosystems**

- Participants collectively assemble suspended mobile ecosystems using:
  - Fish forms
  - Discarded objects
  - Biomaterial components
- Natural and synthetic visual elements

### **Project Outcome**

The final artwork is a dynamic installation of suspended mobiles composed of:

- Bio-resin treated denim fish
- Plastic bottle flowers and fish
- Globes and environmental symbols
- Embroidery hoops with bio resins in different colors to represent sun, clouds, water, grass



Choice: freeform or controlled drying process



## Conceptual Discussion

- What is a garden?
- Gardens as ecosystems
- Gardens as metaphors for growth and regeneration
- Imagining a “global garden” made from reused materials

## Assessment and Reflection

### Discussion Questions

1. What did you learn about textiles, denim, and sustainability through this project?
2. How did the process of upcycling materials influence your thinking about waste?
3. How did working as part of a collective art project affect your creative decisions?
4. After this experience, is there anything you might do differently regarding clothing consumption or plastic use?

### Possible Next Steps

- Students research global textile recycling initiatives.
- Study kinetic sculpture and mobile design, referencing artists such as Alexander Calder.
- Exhibit the installation in a gallery, museum, or public space.

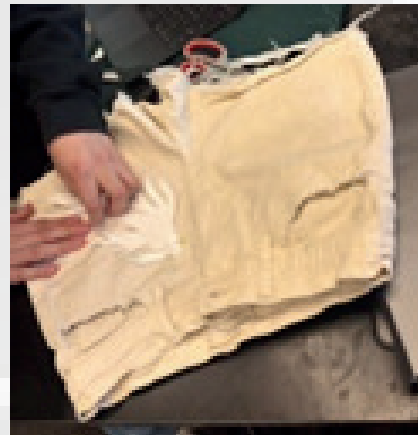
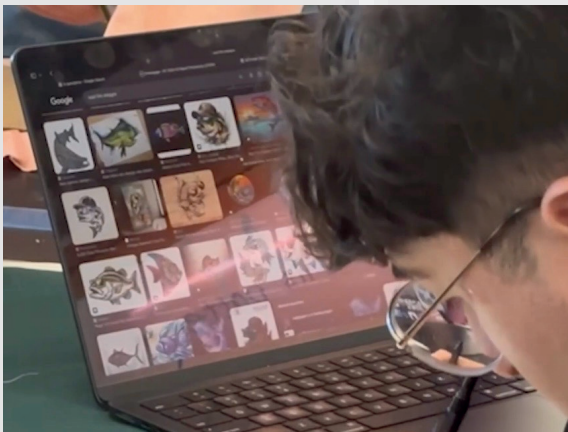


# Project Workshops

Spring 2026

5th & 6th Graders Fish: Program for Talented Youth, “Threads of Change,” weekend program about sustainable fashion

Undergraduate Mechanical Engineering Class: How to Make Almost Anything (and Make it Matter). Gabe Givens project process and outcomes shown below.



# Student Reflections and Project Feedback

“Making the denim fish allowed me to apply what I learned about reuse and material transformation directly. Adding it to the mobile made me feel like I contributed to a larger collective piece, which reflects how individual actions can come together to support sustainability. Really love this project!”

Yueyang Pan

“I have learned that there is a lot of waste product that can be used alternatively in creative ways. A few of us outside talked about how the exhibit of mobiles on the trees looked very beautiful and whimsical. Being able to turn waste into memorable art is a part of sustainability.”

Ishita Patel

“This was a great opportunity to interact with reusable materials. Exposure is a great way to bring awareness. Additionally, this project brought an opportunity to appreciate creativity and beauty.”

Delaney Woolbert

“The Fab Academy mobile project felt like a natural fit because it brought together several things I care about at once: visual storytelling, environmental education, and public engagement. It asked how a broad issue like circularity or plastic pollution could become something a person would stop, look at, and understand.”

Kenya Louison



# Project Video



Test run of the fish mobile project

This video highlights students in a Vanderbilt University Mechanical Engineering class titled “How to Make Almost Anything (and Make it Matter)” trying the first run of  
*The Suspended Sea of Mobiles*  
project

# Acknowledgements

Fabricademy

Wond'ry Center for Innovation and Design

Vanderbilt University

Fabricademy Mentor: Louise Massacrier

Final Project Mentors:

Adriana Cabrera, Aristarco Cortes, Stephanie Vilayphiou, Cecilia

Remote Colleagues/Collaborators:

Porpla Kittisapkajon, Patricia Perez, Marissa Renteria & Heaven Whitby

Lauren Carnahan: photographer and videographer

Kenya Louison, HOD Intern: Project Concept

Vanderbilt Students: 5th and 6th graders and How to Make Anything Matter class



Photo Credit: Lauren Carnahan