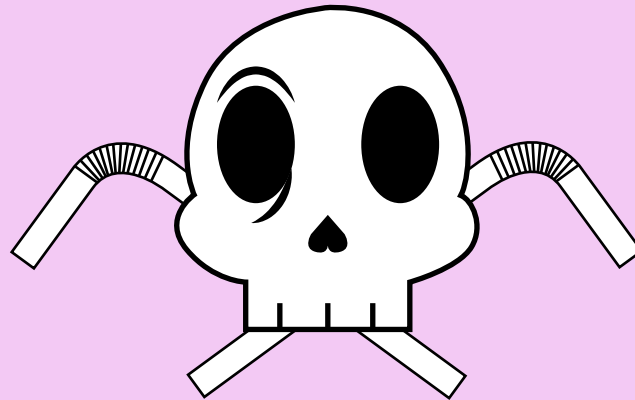


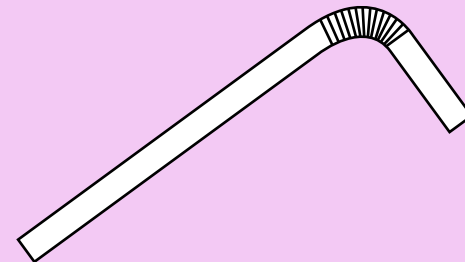
# *Save Your Straw*

The concept of this project is based on the fact that plastic straws are one of the most wasteful things that humans use every single day. Plastic straws hurt the environment by polluting the oceans and harming wildlife, often resulting in premature death. The goal of this project is to educate as many people as possible about the dangers and and wastefulness of using plastic straws, and to create an eco-friendly alternative to them using PLA (polylactic acid) filament to 3D print reusable straws for those who still want to use straws without the plastic waste.

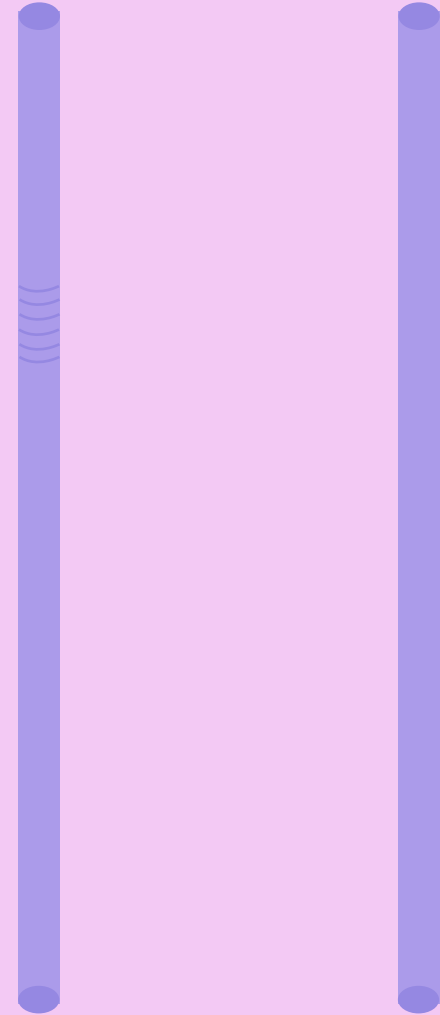
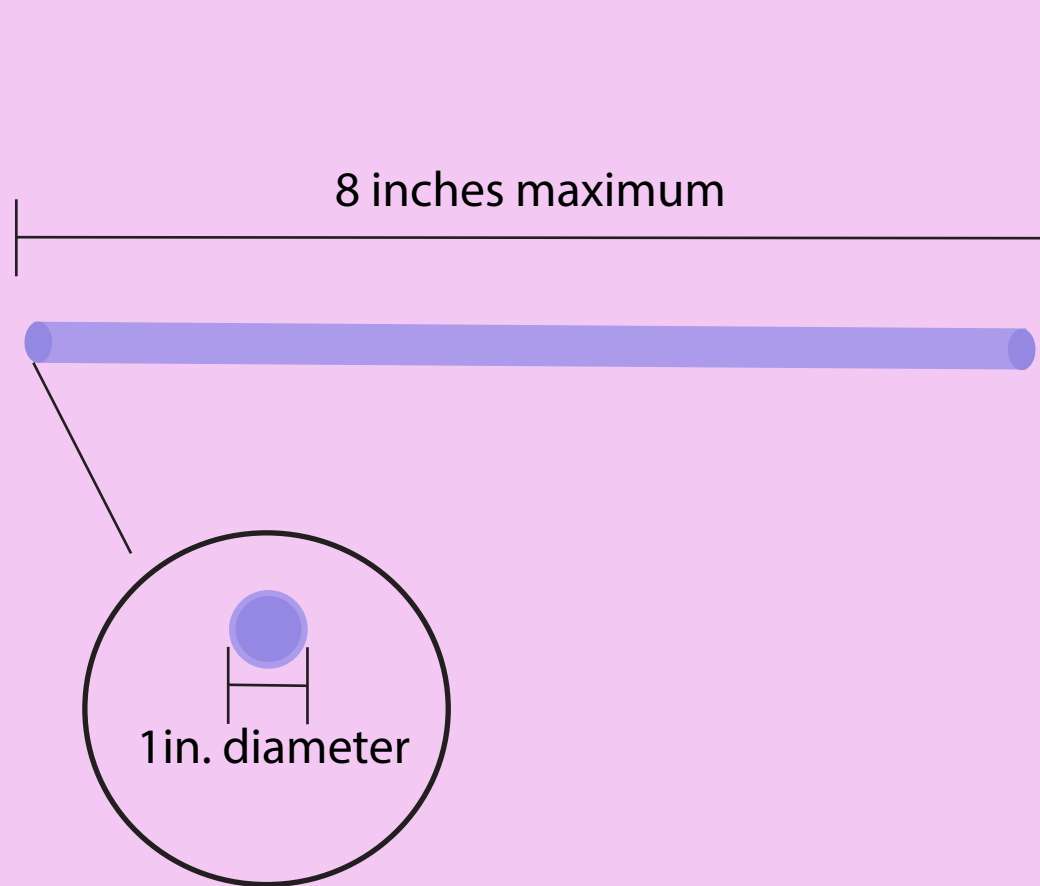


# Research

- 500 million plastic straws are used in the US every single day
- Nearly every plastic ever made still exists on the earth today
- Straws and stirrers are among the top 10 marine plastic debris found during coastal cleanups
- Researchers suggest that 90% of seabirds, whales, dolphins, and turtles have ingested plastics
- Food containers and packaging are the largest component of the municipal solid waste stream (31.7%)
- Plastic pieces outnumber plankton on the ocean surface in the Central-Pacific Gyre 6:1
- Marine plastic pollution has impacted at least 267 species worldwide, including 86% of all sea turtle species, 44% of all seabird species and 43% of all marine mammal species. The impacts include fatalities as a result of ingestion, starvation, suffocation, infection, drowning, and entanglement.
- Polylactic acid (PLA) is a biodegradable and bioactive thermoplastic derived from renewable sources such as corn starch, tapioca roots, chips/starch, or sugarcane.
- Degrades into innocuous lactic acid
- Recycling PLA will result in a monomer material, which can be purified and used to manufacture virgin PLA with no loss of original properties.
- Eco-friendly sustainable plant-based resin
- FDA compliant for food contact



# *Visualizations*



# *Budget & Timeline*

PLA 3D Filament-  
\$37.00  
3D Printing Cost-  
\$20-\$40  
All printing done in the IMRC

April 18th-  
Begin sketches for educational video about  
plastic straw pollution

Begin designs for 3D printed straws

April 20th-  
Create assets for video

April 22th-  
Begin video animation process

Begin 3D printing process

April 27th-  
Finish and present project

# *Sources*

Gourmelon, Gaelle, and Erik Assadourian. "Plastic Straws: A Life Cycle (with Infographic)." Worldwatch Institute Blog. N.p., 02 Sept. 2016. Web. 16 Apr. 2017.

"The Problem of Marine Plastic Pollution." Clean Water Action. N.p., 20 Apr. 2016. Web. 16 Apr. 2017.

[https://en.wikipedia.org/wiki/Polylactic\\_acid](https://en.wikipedia.org/wiki/Polylactic_acid)

