



Art Exhibition

Objectives:

Students will connect their personal consumer choices with the effects of marine debris on the marine environment. They will understand that certain types of marine debris can entangle marine organisms, and that small pieces of debris are often ingested by animals. They will finalize a collaborative sculpture from marine debris representing the surface of the ocean choked with intertwined debris and dangling pieces of photo-degraded debris to help people understand and connect with issues of marine debris.

Concept:

Long and circular pieces of pieces of marine debris such as nets, ropes, strapping bands, and plastic bags can pose significant risks of entanglement to marine animals. Smaller or broken pieces of marine debris are often consumed by animals that mistake them for food. This activity uses small-scale marine debris sculptures made during the Ecosystem Effects Station Rotation lesson to create an interactive sculpture that people can walk through to experience the perspective of animals trying to evade entanglement and find prey in a sea of plastic. Artists' statements prepared by the students help to synthesize what they have learned and communicate it with the public.

Materials:

- ⊙ Science Notebooks
- ⊙ Pencils
- ⊙ Gyre Dangles from Ecosystem Effects Station Rotation
- ⊙ Top of the Ocean Mat from Ecosystem Effects Station Rotation
- ⊙ 16 gauge wire
- ⊙ Scissors
- ⊙ Laptop/computer and projector or SmartBoard

Preparation:

Prepare technology for viewing video in classroom, by loading and testing video on a smart-board, computer with projector, or individual computers for students to view. Both a short video PSA and longer video about entanglement of Steller sea lions in marine debris can be found on the NOAA Fisheries Alaska website (<http://alaskafisheries.noaa.gov/protectedresources/entanglement/pinnipeds.htm>) The shorter PSA is 30 seconds and may be more suitable for younger classes, while the longer video is more appropriate for older classes and a more in-depth understanding of entanglement of Steller sea lions in Alaska.

Also load clips from the Gyre Expedition or 5 Gyres Institute as a class. They can be found at <http://newswatch.nationalgeographic.com/2013/08/14/gyre-expedition-probes-impact-of-plastic-pollution-on-remote-beaches/>, <http://vimeo.com/71161144>, and <http://vimeo.com/24020595>.

Introduction:

Bring the Top of the Ocean Mat sculpture out. Gather in a circle around it. Ask students to imagine what it would feel like to be an animal entangled in marine debris.

As you talk and share as a group, pass the spool of wire around the circle. Students should weave the wire into the edges of the sculpture netting, moving the wire from hand to hand around the circle so that the whole sculpture is reinforced by wire.

Ask students to brainstorm ways that entanglement can hurt animals.



Art Exhibition *Continued*

If they need help, encourage them to think about basic animal survival needs and how entanglement can hinder their ability to fill these needs.

As a class, discuss the different effects of entanglement that students brainstormed.

Procedures & Activities:

Attach the completed Top of the Ocean Mat to the ceiling where you will be displaying the sculpture. Try to arrange the sculpture in an area where a good amount of light is blocked by the dangles.

Have students retrieve their Gyre Dangles. Use a loop of fishing line or wire to attach the dangles to the Top of the Ocean Mat.

Once the dangles are attached to the "Top of the Ocean" mat, have each student move through the sculpture.

As students make their way through the sculpture, have them imagine what it might be like to be a fish or a bird searching for food in this environment, or phytoplankton in need of light to photosynthesize.

Have students reflect in their science notebooks on the experience and what they felt as they navigated through the garbage patch.

Ask students to research the impact of marine debris "garbage patches" in gyres on marine organisms, and particularly the effects of ingesting plastics and entanglement.

One way to do learn more about gyres is to watch clips from the Gyre Expedition or 5 Gyres Institute as a class. T

For more information on entanglement, your class can watch the short PSA or longer video about entanglement of Steller sea lions as a class.

Because these videos focus on marine debris originating from sport, commercial, and subsistence fisheries, it is important to explain to students that there are other sources of marine debris that can entangle animals (soda six-pack rings, packing bands used in shipping, plastic bags, etc.) Discuss how animals can become entangled in marine debris.

Have students visit the website for the Fur Seal Disentanglement Project on the St. Paul Island: <http://www.tribaleco.com/entang/index.html>.

Ask the students to write an artist's statement to accompany the sculpture they have created and record it in their science notebook.

Have them create one unified artist statement that addresses issues of marine debris through both entanglement and ingestion, or split the class in half. Have one group write an artists' statement that focuses on entanglement and the other group craft a statement that focuses on ingestion.

The artist's statement should explain where the materials for this project came from and the effects these materials could have on organisms living in the gyres, focusing on ingestion and/or entanglement.

After they write their artist's statement, have each student share it with a partner and then underline an important sentence in their statement.

Ask students to share their most important sentences with the class. Record them on the board,





Art Exhibition *Continued*

discuss what is missing and create a unified artist statement to display with the sculpture.

Choose a day and time to share your sculpture with family, friends, and community members.

Prepare for the art opening by splitting students into groups to focus on different aspects of the art opening, including such things as:

- Flyers (create and hang flyers about the exhibition around the school and community)
- Invitations (create and distribute personalized invitations to leaders in the community)
- Refreshments (choose and buy simple refreshments and supplies for the art opening)
- Display (print the completed Artist Statement, display near sculpture, arrange lighting)
- Welcome Speech (write a short speech for a student to give at the opening)

Celebrate the hard work and artistry of the students with a grand opening for the art exhibit!

Wrap-up:

After the opening, debrief the experience as a class. Have students reflect in their science notebooks about the experience of displaying their sculpture publicly. They should answer the following questions:

- What was your favorite part of the art opening?
- What was the most challenging part of using art to teach people about marine debris?
- What is one thing a person who attended the opening might have learned about marine debris?

Extensions & Lesson Connections:

This lesson builds on the work done in the "Stations: Effects of Marine Debris on Ecosystems" at the Gyre Dangle and Top of the Ocean Mat sculpture stations. You can also use this format for creation of an exhibition for "Marine Debris Masks."

Evaluation:

Review the artist statements and personal reflections that students recorded in their science notebooks. These can be used to assess student understanding of the ecosystem effects of marine debris. Observe student participation during the art opening and cooperation during the planning process.