

## **Environmental Education**

Turtle Island Restoration Network carries out Environmental Education Program in the Galveston Independent School District, in Houston area schools, with home school groups, and with other youth-serving groups. By building knowledge and caring for marine wildlife, our K-12 education program help students understand the connection between watersheds and the ocean ecosystem, and provide multiple ways for individuals to take action to reduce their plastics usage.

The program meets two important needs: providing engaging, science-based lessons and enrichment for students about the Gulf of Mexico environment, and reducing plastic in our oceans. Sea turtles and other marine animals often accidentally ingest and get entangled in plastic debris.

Our education program builds knowledge, and they are also designed to change the behaviors of students and their families in order to reduce the amount of plastic waste they generate and ultimately reduce the amount of plastic pollution in the Gulf of Mexico.

Turtle Island offers the following opportunities:

**1) In-school and group presentations:** Turtle Island is well-equipped to provide in-school, hands-on science programs tailored to specific age groups and carry them out through school visit days or home school group presentations and due to the current pandemic programs may be held via the Internet. Our programs will build excitement about sea turtles, watersheds and the marine environment, and convey the key facts about plastics and their impacts.

Turtle Island Restoration Network's Gulf staff presents age-appropriate information and activities tied to the Texas Essential Knowledge and Skills (TEKS) and we serve students in kindergarten through 12th grade.

Our programs focus on three key lessons, based on grade level and the direction of each parent or teacher. Each of these lessons links together key aspects of sea turtle protection, and the need for practical, specific changes in behavior that students and their families can do to help sea turtles. Specifically, the lessons focus on reducing plastic waste and pollution. Lessons include:

**A. Rob the Ridley.** K-3rd grade.

Our mascot, Rob the Ridley will visit and read a story about protecting sea turtles. This program will focus specifically on the lifecycle of an endangered Kemp's ridley sea turtle, and the impacts posed by point source and non-point source pollution flowing into the Gulf of Mexico. It will help students learn that most marine pollution is caused by human activity within the watershed, and they can help stop it.

**B. Sea Turtle Promises** K-5<sup>th</sup> grade.

This program will teach students about the 5 species of sea turtles that reside in the Gulf of Mexico, what is impacting their populations, and what decisions that they can make every day to help save sea turtles. At the end, students will complete a coloring activity where they write down what they promise to do to help save sea turtles.

**C. Litter vs. Trash; Decomposition in the Marine Environment.** 6<sup>th</sup> grade – adults.

This program will guide students to comprehend the impact of litter on the environment, including the time it takes litter to decompose, where it ends up, and how it gets there. They will understand that litter is not only aesthetically displeasing but it also poses a threat to wildlife, natural ecosystems, human health and safety, and communities.

**D. Watershed Science using an EnvioScape.** K – 12<sup>th</sup> grade

This program consists of a landscape representing a coastal community and includes a resort, marina, storage tanks and other related items. The landscape map represents typical sites found in a coastal area including: a dredged channel, resort, treatment plant, gasoline station, marina, residence with a septic tank and an urban community. This program demonstrates point and nonpoint source pollution and impacts on wetlands, estuaries, the ocean, beaches and even coral reefs and shellfish beds.

**E. Microplastics and Food Web Interactions.** 4<sup>th</sup> grade – adults

This program teaches how microplastics affect the environment and the food web. Topics focus on bioaccumulation and biomagnification. We provide activities for younger grades and microscope work with microplastic for older students and adults.

**F. Beach Cleanups** 4<sup>th</sup> grade – adults

This program is centered on hosting a beach cleanup that is focused on participants conducting citizen science and begins with an educational talk. They will complete a beach cleanup gathering data on type of debris picked up, how many pounds of trash were collected, number of cigarette butts collected for recycling, microplastics, and nurdles collected. We end with a discussion of how to reduce the impact of plastic pollution on the environment.

**2) Community-based Action Projects:** Turtle Island staff will help parents and teachers to develop programs with their students at school and home and through civic action. One example of this type of project is our work with Oppe Elementary to make the Kemp's ridley sea turtle a Texas State Symbol. We will work with parents and teachers to develop community-based action projects, which may include beach clean ups, school and community recycling, fishing line recycling, rainwater collect and civic action.

**Through the Environmental Education Programs, we work to:**

- 1) Present programs with Texas Essential Knowledge Standards, for students in K-12, through three distinct lesson plans with standards-linkages posted on website for other educators.
- 2) Through in-class presentations or via the web by Turtle Island staff and interns to reach students in the greater Houston- Galveston area.
- 3) Encourage students to take a Plastics Pledge to reduce their use of non-recyclable plastics, take part in field experiences such as a beach clean ups, and encourage others in their community to reduce their use of single-use plastics.
- 4) Implement student-led recycling programs, beach clean-ups, and fishing line collection at schools.