

Marine Debris STEAMSS Curriculum

Housed on the Oregon Coast STEM Hub website:

<http://oregoncoaststem.oregonstate.edu/marine-debris-steamss>

Marine Debris is a complex, real-world problem which can be addressed through the lenses of several different academic subjects. This curriculum integrates the subject areas of Science, Technology, Engineering, Art, Math, and Social Studies (STEAMSS), and focuses on experiential hands-on activities for students in grades 4 through 12. The collected teacher-tested resources enable educators to create in-depth, project based learning (PBL) units, work with teaching partners across disciplines, and find classroom and field experiences that will help students explore the issue and impacts of marine debris and engage in stewardship actions.

Lessons include opportunities for students to:

- Collect and analyze data,
- Address problems through engineering design,
- Use technology and art to effectively convey stewardship messages,
- Contribute to clean up efforts, and
- Work with community partners.



Explore by grade band:



Categories	Essential Questions
Composition and Abundance	What is marine debris? Where do we find marine debris?
Sources and Transport	Where does marine debris come from? What is the greatest source of marine debris? How does marine debris get into the ocean? How does marine debris move in the ocean?
Impacts	How does marine debris impact ecosystems? How does marine debris impact wildlife? How does marine debris impact humans?
Solutions	How can we prevent debris from getting into our ocean? How can we clean up the marine debris that is already in our ocean? How can we get more people involved in working on marine debris solutions?

This curriculum was funded by the NOAA Marine Debris Program and created in 2014-15 by Oregon Sea Grant in partnership with Oregon Coast Aquarium and Lincoln County School District.

LESSONS

Grades 4-5

COMPOSITION & ABUNDANCE	SOURCES & TRANSPORT	IMPACTS	SOLUTIONS
Beach Box Exploration	Campus Debris and the Ocean	Seabirds / Sea Lions	Green Your School
Human Impact Survey	Ocean's Deadliest Catch	Plastics in the Water Column	Upcycling
Quantifying Marine Debris	Ducks in the Flow	Lethal Loops	Beach Clean Up
Trash Traits		The Probability of Human Impact	Making Connections Through Art

Grade 6-8

COMPOSITION & ABUNDANCE	SOURCES & TRANSPORT	IMPACTS	SOLUTIONS
Beach Box Exploration	Campus Debris Survey	You Are What You Eat	Green Your School
Investigating the Great Pacific Garbage Patch	Ocean's Deadliest Catch	Albatross Bolus Dissection	Upcycling
Quantifying Marine Debris	Where Did the Rubber Bath Toys Go?	International Pellet Watch	Beach Clean Up
Plastics in the Water Column	Marine Debris Around the World	Tsunami Debris Species Risk	Making Connections Through Art
A Degrading Experience	Where Did You Come From and How Did You Get Here?	Small Plastics, Big Problem	Mitigating Microplastics
	Bags, Bottles and Beads: Sources of Microplastics		

Grade 9-12

COMPOSITION & ABUNDANCE	SOURCES & TRANSPORT	IMPACTS	SOLUTIONS
Beach Box Exploration	Campus Debris Survey	You Are What You Eat	Green Your School
Investigating the Great Pacific Garbage Patch	Ocean's Deadliest Catch	Albatross Bolus Dissection	Upcycling
Quantifying Marine Debris	Where Did the Rubber Bath Toys Go?	International Pellet Watch	Beach Clean Up
Plastics in the Water Column	Marine Debris Around the World	Tsunami Debris Species Risk	Making Connections Through Art
A Degrading Experience	Where Did You Come From and How Did You Get Here?		

<http://oregoncoaststem.oregonstate.edu/marine-debris-steamss>