Human Impacts, Benefits & Solutions
Topics: Community, environmental resources, diversity, pollution

GRADE LEVEL: 3-5

Big Ideas:

- Individuals and communities are doing things to help protect the Earth’s resources and environments.
- Not all communities are the same.
- Things that people do can affect the world around them.
- Humans use natural resources for everything they do.
- Pollution is made by humans.

Learning Objectives: students will be able to…

- See how pollution affects people.
- Communicate solutions that reduce their impact on the environment.
- Identify the differences between different types of pollution.
- Identify reusable materials.
- Develop an understanding of the importance of diversity in a community.

New Your State Science Learning Standards:

4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.
5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment.
3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Key Understandings:

- Energy and fuels that humans use, are derived from natural sources.
- Some resources are renewable over time, and others are not, and their use affects the environment.
- People can make choices that reduce their impacts on the land, water, air, and other living things.

Essential Questions:

- What is a community?
- What is pollution?
- What are some choices that people can make to reduce their impacts on the environment?
- Why is diversity important in a community?
- What are some ways we are different and how can we celebrate these differences in our community?

Students will know…

- Key vocabulary terms.
- What makes up a community.
- Pollution comes in different forms and from many sources.
- How their actions can affect their surrounding environment.
- Some communities have to deal with pollution more than others.

Vocabulary:

- Community: a group of people who live in the same area (such as a city, town, or neighborhood).
- Diversity: the quality or state of having many different forms, types, and ideas.
- Environmental justice: is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income.
- **Microplastic**: very small plastic pieces less than five millimeters long which can be harmful to our ocean and aquatic life.
- **Natural resource**: materials or substances that exist in nature such as air, sunlight, water, soil, stone, plants, animals, and fossil fuels.
- **Pollution**: harmful materials into the environment.
- **Rural**: any population, housing, or territory not in an urban area.
- **Suburban**: an outlying part of a city or town.
- **Urban**: living, located, or taking place in a city.

**Learning Plan**: We recommend doing these lessons in sequential order; however, they can be done as individual lessons. Lessons have multiple links (videos, songs, diagrams, activities) that can be used at the teacher’s discretion depending on class time.

**Pre-assess**: What makes up a community? What are some ways we are different and how can we celebrate these differences in our community? How does pollution affect communities? Use K-W-L to assess students’ prior knowledge, have students write or draw in response to the essential questions.

**Progress Monitoring**: Formative assessment and teacher feedback should be ongoing throughout the lessons. Teachers should develop assessments based on their individual class needs. Think-pair share, exit tickets, interactive discussions, questions and listening, informal observations, quizzes and student work samples can all be used.

**Lesson 1: It’s Okay to Feel Different** - Students listen to a story, discuss the importance of diversity, create their own jigsaw puzzle/story, and investigate their communities.

- It’s Okay to Feel Different [Student Activity](#)
- What’s good in my Hood [Student Workbook](#)

**Lesson 2: Pollution** - Students listen to a story, learn how pollution gets into the environment, and build their own water filter to clean up the polluted water. Have students follow up with a walk around their schoolyard or community to identify pollution sources.

- Who Polluted the Hudson River [Student Activity](#)
- Build Your Own Water Filter [Student Activity](#)
- The Rain Drain: Stop Trash in its Tracks & What’s the Point: Exploring Point Source and Non-point Source Pollution [Student Activities](#) (pg. 64-67)
- Extension: When You Use Water, You Use Everything In It [Student STEM Activity](#)

**Lesson 3: What are Microplastics?** - Students watch a video and survey their own plastic use.

- Video: [Microplastics and Marine Debris](#)
- Microplastics Here and There [Presentation](#)
- Plastic Rapid Survey [Student Activity](#)
Lesson 5: What is Environmental Justice? – Students watch a video, then use a map to locate environmental injustice and learn how air pollution can unfairly affect communities of color.

- Video: Environmental Justice Explained
- What is Environmental Justice Student Activity

Lesson 6: The Power of Our Voice - Students watch a video, then explore how to empower themselves to take a stand.

- Video: Words Have Power
- The Power of Our Voice Student Activity & Student Worksheet
- Video Song: We Sing Out!

Lesson 4: Human Impacts & Sustainability - Students explore sustainability opportunities, and how they can make changes in a system. Students follow up with a game and consider how their actions can change estuaries.

- Resource Student Activity
- Products Life Cycles Student Activity
- Estuary Explorers Human Impacts Game
- Extension: A “Model” Schoolyard Student Activities (pg. 84)

Teachers: Would you like to visit us at Norrie Point environmental education center, or have an educator visit your classroom in-person or virtually? Contact us to schedule a program: hrteach@dec.ny.gov

Resources:

Children’s books:

- The Wump World by Bill Peet
- The Magic School Bus Gets Cleaned Up by Scholastic
- We are Water Protectors by Carole Lindstrom
- The Water Princess by Susan Verde
- One Plastic Bag by Miranda Paul
- The Lorax by Dr. Seuss
- What a Waste by Jess French
- Counting on Community by Innosanto Nagara
- Look Where We Live! By Scot Ritchie
- Quinito’s Neighborhood by Ina Cumpiano
- Maybe Something Beautiful by Isabel Campoy
- All Are Welcome by Alexandra Penfold
- One Earth by Eileen Spinelli
- 10 Things I Can Do to Help My World by Melanie Walsh

Websites:

- Children’s Environmental Literacy Foundation
- Learning for Justice
- Learning to Give
- NYCDEP Curriculum Guide
- NYSDEC
- Teach Hub
- Young Voices for the Planet