



Marietta City Schools

District Unit Planner

Grade 3 Science

Theme	<i>Unit 3 Pollution and Conservation</i>	Unit duration	<i>8 weeks</i>
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Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): *What will students learn?*

GaDoE Standards/3D Science Elements

Georgia Standards:

S3L2. Obtain, evaluate, and communicate information about the effects of pollution (air, land, and water) and humans on the environment.

a. Ask questions to collect information and create records of sources and effects of pollution on the plants and animals.

Explore, research, and communicate solutions, such as conservation of resources and recycling of materials, to protect plants and animals.

Unit Objectives:

After examining pollution in their area, students will

- Understand that changes in environments can happen naturally or be influenced by humans.
- Give examples to support the idea that some environmental changes are good, some are bad, and some are neither good nor bad.
- Explain that pollution is a change in the environment that can influence the health, survival, or activities of organisms (including humans), and give examples of pollution.
- Understand that plants and animals live in a variety of habitats, and that change in those habitats affects the organisms living there.
- Give examples of human activities in agriculture, industry and everyday life that have had major effects upon the habitats of organisms.
- Explain ways that individuals (including themselves) and communities can do things to help protect the Earth's resources and environments.

Unit Phenomena: There are five major garbage patches floating in the world's oceans. The largest one is off the coast of California, and it is twice the size of the state of Texas.

<https://www.youtube.com/watch?v=1qT-rOXB6NI> Show this video about the Great Pacific Garbage Patch. Ask students what they notice. Record on a chart. Next, ask students what they are wondering. Record on chart. Keep the chart up in the classroom and refer to it throughout the unit.

Science & Engineering Practices:

- Asking questions and defining problems
- Use mathematics and computational thinking
- Developing and using models
- Analyzing and interpreting data
- Engaging in argument from evidence

Disciplinary Core Ideas:

- Geological processes
- Formation and/or destruction of landforms
- Pollution
- Conservation

Crosscutting Concepts:

- Systems and System Models
- Cause and Effect
- Structure and Function

Misconceptions:

- Pollution comes only from manufacturing processes and machines.
- We can recycle everything.
- Trash disappears.
- I do not pollute.
- We don't have a problem with pollution.
- All water sources are clean and can be used for drinking water.

Math/ELA Connections/STEM Connections

ELAGSE3RI1: Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

ELAGSE3RI3: Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

ELAGSE3RI4: Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

ELAGSE3RI5: Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic quickly and efficiently.

ELAGSE3W2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

ELAGSE3W4: With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose.

ELAGSE3W7: Conduct short research projects that build knowledge about a topic.

ELAGSE3W8: Recall information from experience or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

ELAGSE3SL1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.

ELAGSE3SL4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

MGSE3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

MGSE3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.

STEM

[Discovery Education Science Techbook STEM Challenge](#) – students conserve three renewable resources.

[Every Drop Counts](#) – Project Learning Tree STEM lessons on water conservation

Ask students to collect trash from classrooms and the office. Have them sort the trash (wearing gloves) into categories. Ask them to determine the largest category of trash (it will either be paper or plastic). This can be done as a data collection either by counting or weighing the trash.

Problem: We throw a lot of things away that could be recycled.

Challenge: Design a poster to put up in your school reminding people to recycle.

Discovery Education Science Techbook Resources: *(You will need to be logged into Discovery Education using your Google credentials to access these resources)* You will find center activities on the **Engage** page of each Techbook unit.

[Renewable Energy Model Lesson](#)

Hands-on Activities

[Hands-On Lab: Baking in the Sun](#)

[Hands-On Lab: Wow, Windmills!](#)

[Earth's Resources](#)

[Value of Renewable Resources](#)

Essential Questions

Factual—

What are some biodegradable products?

What is the chemical composition of the biodegradable products?

Why are biodegradable products important?

Inferential—

How do humans affect our community environment in positive and negative ways?

Critical Thinking-

Research local pollution problems, then pose a solution to share with the applicable utility company and/or local politicians.

Tier II Words- High Frequency Multiple Meaning	Tier III Words- Subject/ Content Related Words
reduce, reuse, recycle, protect, problem, solution, conserve, environment	renewable energy, nonrenewable energy, pollution, littering, natural resources, agriculture, runoff, chemical composition

Objective or Content	Learning Experiences	Differentiation Considerations
S3L2. Obtain, evaluate, and communicate information about the effects of pollution (air, land, and water) and humans on the environment.	GaDOE Pollution and Conservation Instructional Segment This segment will help students understand how pollution affects the environment and how to reduce their pollution to help conserve natural resources.	Student Choice Performance Tasks Reflection and Goal Setting Learning Stations Choice Boards Formative Probes Science Journaling Multi-sensory activities Assistive Technology Flexible Grouping Multiple Means of Representation
	Georgia Aquarium From Brook to Ocean Students will learn about watersheds and how humans affect our watershed in positive and negative ways.	
	MCS Model Lesson Pollution and Conservation In this lab, students will create a landfill and observe how different items biodegrade.	
Recommended High Quality Complex Text		
<i>What a Waste: Trash, Recycling, and Protecting our Planet</i> By Jess French <i>Our World Out of Balance: Understanding Climate Change and What We Can Do</i> By Andrea Minoglio <i>Cleaning Up the Earth</i> By Precious McKenzie <i>Explore Natural Resources</i> By Anita Yasuda <i>Clean and Green Energy</i> By Colleen Hord <i>Helping Habitats</i> By Barbara Webb <i>Save the Planet</i> By Protecting Our Natural Resources By Rebecca Hirsch		

