**Learning Unit:**

**Pollution in our Environment: First and Third Grades**

Amanda Robison and Sarah Dedmon

**Purpose**

### The purpose of this unit is to make students aware of issues concerning pollution and to help them recognize some of the things they can do to make a difference within their schools and community. This unit crosses Math, Science, Reading/ Literature content areas and will provide students with information concerning pollution, its effects, and what can be done to protect and preserve the environment. This unit will provide various activities that will teach environmental and community changes caused by pollution, and provide students with the information they need to address these issues. This unit will allow students the opportunity to take what they are learning about the effects of pollution and make it meaningful by applying it to their own lives. They will be able to see how their daily actions contribute to pollution and how they can help prevent it.

**Content Standards:**

First Grade

**Topic**

B. Environmental Issues

**Indicator**

**1.** Recognize that caring about the environment is an important human activity.

**Objectives**

Recognize and describe that individual and group actions, such as recycling, help the environment.

Recognize and describe that individual and group actions, such as littering, harm the environment.

Give reasons why people should take care of their environments.

**Standard: 1.MD.4**

Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

**(SC 1)**

**W1** Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure. (SC, 1)

Third Grade

**MARYLAND SCIENCE CONTENT STANDARDS**

2.0 Physics – Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles, transfer of energy) of the environment, Earth, and the universe that occur over time.

**BCPSS SCIENCE SKILLS AND PROCESS OBJECTIVES**

3.1.B.1.a. Develop explanations using knowledge possessed and evidence from observations, reliable print resources, and investigations.

3.1.B.1.b. Offer reasons for their findings and consider reasons suggested by others.

3.1.A.1. Constructing Knowledge - Gather and question information from many different forms of scientific investigations which include reviewing appropriate print resources, observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments.

[3.4.A.1.b](http://mdk12.org/instruction/curriculum/mathematics/standard4/grade3.html) Organize and display data to make tables using a variety of categories and sets of data

[3.4.B.1.a](http://mdk12.org/instruction/curriculum/mathematics/standard4/grade3.html) Interpret data contained in tables using a variety of categories and intervals

**Brain Target 1: Emotional Connection**

-Create a connection: Content and Students

-Begin lessons with sharing a poem or story about the environment.

-Students will take an environmental walk and discuss how human activity influences pollution. -Students will discuss how pollution impacts their surrounding environment, animals and natural resources.

-Students will create their own poem about protecting our environment and making their community a clean and healthy place to live.

-Students will grow plants that can be planted in our playground garden.

-Encourage students to share ideas through daily journal writing.

-Unit Introduction: Buddy reading of The Lorax and class discussion

-Talking chips are provided during group work to ensure the participation of every student

-Numerous tradebooks available

-Students will look at a map of the surrounding neighborhood and discuss where they live in relation to each other

-Students will be shown pictures of polluted environment and record their observations and feelings

**Brain Target 2: Physical Environment**

Student created work such as poems and stories will be posted.

Have student created mural for clean environment and polluted environment hanging on the back bulletin board.

Post types of pollution chart in the classroom.

Have pictures of ocean , air and land pictures in the classroom for students to see the parts of our environment affected by pollution.

Provide environmental books and stories for students in the classroom library.

Plants brought into the classroom

Students will create a 3D model of a tree on the bulletin board to display their current work on

Play soft music-woodland sounds

Frequent breaks and movement built into each lesson “BRAIN GYMS”

Fish mobiles created out of recycled materials hanging from the lights

**Brain Target 3**

Concept Map/Advanced Organizer

Pollution

Aspects of Environment

Protecting and Preserving our Environment

### BT3 Learning Goals

Third Grade Students will be able to:

Identify and understand the influences of pollution on people in the past and today. Also demonstrate an understanding of the influences of pollution on the environment, animals, and natural resources.

Students will be able to identify types and causes of pollution.

Students will be able to solve real life problems related to pollution and recycling.

Students will be able to distinguish different forms of pollution (Air, water, land, noise) and

discuss causes of the various forms of pollution.

First Grade Students will be able to:

* Identify and discuss parts of our environment
* Identify and discuss various types of pollution that we observe and what the causes are
* Analyze the harmful effects of pollution and create a plan to stop them
* Explore the scarcity of resources due to overuse and pollution

Introductory Big Picture Activity/ Assessment of Prior Knowledge

Introduce Concept map.

Two pictures of the environment in The Lorax will be displayed to the class and students will discuss what caused the changes

Use KWL chart to chart what students already know about the aspects of our environment and pollution.

**Brain Target 4: Mastery/Procedural Knowledge**

Third Grade

Students will explore their environment by being an environmental detective for the day and taking notes about their surrounding. They will share their findings with the class and discuss reasonable solutions to clean and protect their environment.

Students will create a brochure for protecting oceans, air and land. In the brochure students can show pictures and write about why it is important to keep our oceans clean. Such as swimming, boating and other ocean related activities. The same can be done for land and air.

Students will create a poster to promote Reduce, Reuse and Recycle.

Students will create a classroom mural showing a clean environment and a polluted environment.

Students will read The Lorax and create their own version of the story or change the ending to the story.

First Grade:

* Songs about pollution
* Students will write a new ending for The Lorax with their book buddies about what will happen if the boy and the Onceler planted the Truffula seed
* On a neighborhood walk students will be “Pollution Detectives” and identify evidence of pollution using their eyes and flip cameras.
* Rewatch the footage and make a list of the types of pollution as well as causes and effects of it using visible thinking routine, “I see, I think, I wonder…”
* Use the list to create a plan to address the pollution
* Implement the plan by creating signs for yards, picking up trash, etc
* On a walk, collect litter and sort upon return to school. Class will complete a “litter tally” and discuss the results and share with other classes

Repeated rehearsals of how to observe and record

**Brain Target 5 Extension and Application**

Third Grade:

Recyclable Sort and graph the results

Create chart for types of pollution and why pollution has occurred and increased

|  |  |
| --- | --- |
| How pollution had increased: | Why this has occurred: |
| •Increased air pollution:  ·smoke  ·chemical vapors  ·dirt  •Water pollution  ·Oil and chemical spills  ·Sewer and garbage disposal in lakes, rivers, and the ocean  •Land Pollution  ·Garbage and litter  ·Chemical spills  ·Improper waste disposal | •More factories  •More cars and other transportation  •More technological advances  •More people  ·more consumption  •Carelessness  ·littering  ·not recycling  •Laziness  ·Driving rather than walking  ·Efforts to recycle are too much |

Have students write about how pollution will affect our future if we do not take care of our environment.

Have students hold a pickup and cleanup trash day at the school.

Students can make a skit about preserving and protecting the environment to present to parents and the school.

First Grade:

* To demonstrate the effects of litter, class will use a terrarium to bury an apple, a glass bottle, a can, and a plastic bottle for one week. The class will dig them up and see that the manmade materials do not decompose in the earth.
* After street cleanup, revisit the next day and have students analyze the differences. Discuss ways they can make a bigger change.
* Have students model and explain the effects of littering for Pre-K or K classes.
* Write a persuasive letter to their neighborhood newsletter or city councilmen discussing their observations and what needs to be changed to create a cleaner environment
* Neighborhood Walks and Cleanup

**Brain Target 6: Evaluating Learner**

Third Grade:

Create a portfolio of student work that will include all art activities and writings that students completed.

Teacher will keep anecdotal records for all observed activities.

Students will write in their journal daily.

Endangered species report. Students will write about a animal species that is endangered due to environmental factors.

End of the unit test.

First Grade

* Smiley face rubric used on journals and responses
* Students will work in pairs to create dioramas showing the effects of pollution on a clean environment
* Informal observation of participation in activities such as brainstorms, read alouds, discussions, etc
* Teacher Rubric and Student Rubric for persuasive letter
* Peer Assessment of dioramas: Visit each diorama and identify the type of pollution and the effect the students showed using a graphic organizer
* Rubric for Diorama: including types and number of materials used, clarity of cause and effect, clarity of paragraph explaining their diorama