1. **Lesson Author:** Barb Herman

2. **Lesson Title:** How can people help protect Earth?

3. **Grade Level:** 2

4. **Subject Area:** Earth Science

5. **Time allotted for the lesson** (express in number of class meetings and/or number of hours):

<table>
<thead>
<tr>
<th>Day</th>
<th>Meet</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>15-20 minutes</td>
</tr>
<tr>
<td>2</td>
<td>15-20 minutes</td>
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<tr>
<td>3</td>
<td>15-20 minutes</td>
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<tr>
<td>Experiment Daily for 15 to 30 days</td>
<td>5-10 minutes</td>
</tr>
</tbody>
</table>

6. **Short description of lesson** (write a brief, yet concise description of what occurs in this lesson):

“The students will learn ways that human activity affects the environment. The students will learn ways that human beings cause changes in their environment, and these changes can be positive or negative.” (Cummins, 2008. p.154)

The students will continue to use the scientific method in the plant experiment.

7. **State Curriculum Standards met in this lesson:**

STATE GOAL 11: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.
STATE GOAL 12: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
STATE GOAL 13: Understand the relationships among science, technology and society in historical and contemporary contexts.

8. **National Educational Technology Standards for Students (NETS-S) met in this lesson:** Go to NETS-S standards and select the appropriate grade level profile (K-2, 3-5, 6-8, 9-12), indicators and standards that are being met in this lesson.

1. **Creativity and Innovation**

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

a. apply existing knowledge to generate new ideas, products, or processes.
b. create original works as a means of personal or group expression.
c. use models and simulations to explore complex systems and issues.

d. identify trends and forecast possibilities.

2. **Communication and Collaboration**

   Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:

   a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.

   b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.

   d. contribute to project teams to produce original works or solve problems.

3. **Digital Citizenship**

   Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:

   a. advocate and practice safe, legal, and responsible use of information and technology.

   b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.

   c. demonstrate personal responsibility for lifelong learning.

   d. exhibit leadership for digital citizenship.

4. **Technology Operations and Concepts**

   Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

   a. understand and use technology systems.

   b. select and use applications effectively and productively.

   d. transfer current knowledge to learning of new technologies.

9. **Instructional Objectives** (Each instructional objective [learning outcome] for this lesson):

   a) The student identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues.

   b) The student knows that scientists and technologists use a variety of tools (e.g., thermometers, magnifiers, rulers, and scales) to obtain information in more detail and to make work easier.

   c) The student uses a variety of context clues (for example, illustrations, diagrams, information in the story, titles and readings, sequence) to construct meaning (meaning cues).

   d) The student extends and refines knowledge that the surface of the Earth is composed of different types of solid materials that come in all sizes.

   e) The student knows selected resources used by people for water, food, and shelter, are limited and necessary for their survival.

   f) The student understands the processes of weathering and erosion.
g) The student knows that human beings cause changes in their environment, and these changes can be positive or negative. The student knows ways that human activity affects the environment.

h) The student keeps science records.

i) The student displays solutions to problems by generating, collecting, organizing, and analyzing data using simple graphs and charts.

10. Instructional Procedures

a. Lesson Set (How will you open the lesson to motivate the students? How will you relate this lesson to previous learning & to real life experiences, to explain the importance of the learning to the students? (requires student involvement))

Introduce the word pollution to the students and show them the Learner Differences Image focusing on the top three image showing pollution.

Access Prior Knowledge: Ask children to remember a place where they might have seen trash on the ground or in some other natural area. In their science journals, have children describe how they felt about this. (Cummins, 2008. p.154)

b. Techniques and activities (List the step-by-step activities in sequential order as they occur in the lesson. They clearly identify what is to take place in the lesson. Within the procedures a variety of classroom teaching strategies (methods) are identified. Student centered activities are included as well as guided practice of the learning is included.)

Set Purpose:
Tell children they are going to read about ways to protect Earth. Help them set a purpose for reading, such as being able to understand what pollution is and how people can help reduce pollution. (Cummins, 2008. p.154)

Have them look at the pictures in the text book and in the Learner Differences Image have them write in their science journal which images they like best, with pollution or without pollution, and why. In small groups the students will read the text book, write down unknown words, and complete the worksheet. Have students write new words in Science Journal.

Ask children the following scaffolded questions to assess understanding.

Recall What is pollution? Adding harmful things to land, air, or water (Cummins, 2008. p.154)

Explain Why do people want to reduce pollution? Pollution is harmful to plants and animals. (Cummins, 2008. p.154)

Plan What can people do at home to reduce pollution? Answers may include picking up trash, recycling, using less paper towel, toilet tissue, or facial tissue. (Cummins, 2008. p.154)

Introduce the Process Visual to show the students how the recycling process works.
Extended Vocabulary: Write the word pollution on the board. Tell children that it has its derivation in Latin words meaning “through mud.” Define pollution as a noun meaning “the act or process of dirtying any part of the environment.” Ask children to write one sentence using the word. (Cummins, 2008. p.154)

c. **Lesson Closure** (How will the lesson come to a close? The content should be summarized and related to future lessons, and actively involve the students)

Worksheet activity before and after reading
Review worksheet activity after lesson is complete
Science notes contain new words with definitions and three ways that people and animals change the earth.
Class will take a virtual field trip to a recycle plant and visit with a recycling expert using Skype.
The students will take a comprehensive Earth Unit test.

11. **Adaptations for special learners** (How will you adapt the learning/equipment for students with special needs?)

All students are grouped using Kagan sitting recommendations so not to single out different levels of academic ability. Picture flash cards will be used for students with severe mental impairment or limited English language.

12. **Supplemental Activities: Extension and remediation** (Extensions are additional activities to expand learning on the lesson content. Remediation activities include methods to re-teach the learning for students who need more instruction/practice.)

**Beginning, Intermediate and Advanced** Will work together discussing pollution.
http://www.recycleworks.org/kids/recycling.html

13. **Assessment/Evaluation** (How will you measure the student’s success? Formally or informally? Formal evaluation of student work requires that a grade is taken while informal might be monitoring of work, or class discussion. This section should contain a description of the assessment process, the criteria for achievement, and performance levels. The criteria should directly align to objectives and instruction. Describe your plan for providing feedback to your students.):

Vocabulary Journal Rubric – Individual Grade
Review worksheet activity after lesson is complete
Grade from unit test

14. **Student Products** (What artifact(s) or products will result from the lesson? (such as a report, newsletter, diagram, slideshow, drawing, etc.)

Science journal write up on reading activity and note taking.

* Note for students: This lesson plan template is adapted from the model that is recommended in the book Preparing to Use Technology: A Practical Guide for Technology Integration.

Adopted from: