



Title: 3R's and Plastic Bags

Grades: 3

Time: 50 minutes

Subjects: Science, Social Studies, Language Arts

Objectives

- Collect, record, organize, interpret and analyze data using a variety of graphic representations and draw logical conclusions.
- Explain the need to reduce the amount of trash they generate, and describe ways in which they can make changes in their actions to support waste reduction.
- Communicate their ideas in writing by writing a persuasive paragraph
- Understand and summarize informational text.

Standards

Geography Standard 16: Understand the changes that occur in the meaning, use, distribution and importance of resources.

- Benchmark # 5: Know advantages and disadvantages of recycling and reusing different types of materials.

Geography Standard 18: Understand global development and environmental issues.

- Benchmark # 2: Know ways in which resources can be managed and why it is important to do so (e.g., conservation practices, recycling non-renewable resources).

Language Arts Standard 8: Use listening and speaking strategies for different purposes.

- Benchmark # 3: Respond to questions and comments (e.g., gives reasons in support of opinions).

Language Arts Standard 7: Uses reading skills and strategies to understand and interpret a variety of informational texts.

- Benchmark # 1: Uses reading skills and strategies to understand a variety of informational texts (e.g., textbooks, biographical sketches, letters, diaries, directions, procedures, magazines) .
- Benchmark # 5: Summarizes and paraphrases information in texts (e.g., includes the main idea and significant supporting details of a reading selection).

Materials

- Email format: Use provided email form below
- A copy or multiple copies of "The Three R's: Reuse, Reduce, Recycle (What Do You Know About? Books) by Nuria Roca
- A plastic shopping bag
- Chart paper
- Writing utensils
- Open space for activity

Overview: The average US citizen generates approximately one ton of trash annually, but seldom gives it any thought once they throw it away. So what happens to it all? Well, it goes into the waste stream where it is collected and hopefully, disposed of in a manner that least impacts the environment. This process is known as solid waste management.

The Environmental Protection Agency has designed a plan for this process, which they refer to as "integrated solid waste management", and has identified five ways to properly handle waste materials: a) source reduction and reusing, b) recycling, c) composting, d) converting to energy, and e) burying it in a sanitary, engineered site. The EPA emphasizes that there is no definitive approach to waste



management and encourages communities to combine these five methods to effectively address the issue.

In most communities across the country waste materials end up in at least one of three locations: a) a materials recovery facility, b) a waste-to-energy facility, or c) a landfill. A materials recovery center is where recycled materials are sent. Once at an MRF glass, metal, plastic and paper are sorted, separated, and baled. Then they are transported to manufacturers, processed, transformed into useful items and placed back on the shelves for consumers to purchase once again. A waste-to-energy facility burns the waste material and converts it to energy. The trash is used as fuel to produce heat energy, turning water into steam. The steam is channeled to turbine generators, which in turn produce electrical power. A landfill is a long-term disposal solution that buries trash in as safe and sanitary manner as possible. In a landfill trash is deposited and compacted overtime, burying layer upon layer of waste material and leaving it to decompose. The EPA recommends land filling as a last resort, after all other methods have been exhausted; however many communities find the other options too costly or impractical, and use a landfill solution as one of their primary methods of disposal.

While the technologies driving these methods have greatly improved in recent years, they still present a number of environmental problems; so the most desirable methods for reducing waste are composting and source reduction/reuse. According to reports from the EPA almost 70% of solid waste consists of organic materials, such as paper, food and yard waste. These materials can be composted by individuals or on the community level, using municipal solid waste composters. Either way, the result is a product that can be added to enrich and improve the quality of soil. Compost is a valuable agricultural resource.

However, even with all these other options source reduction is, by far, the most preferred method of solid waste management. It uses fewer resources, less energy and is essentially free. Unfortunately, it is also the most difficult concept to communicate to consumers. For manufacturers, source reduction means looking at and reducing the waste they generate during production, and the materials they use in packaging products. For individuals, it means reevaluating current practices, learning to do more with less, using what already exists responsibly, and recognizing the difference between needs, wants and what is ultimately best for the environment and the future of mankind.

Kid's Speak: The "waste stream" is the movement of trash from homes and businesses that is recycled, burned, or put in landfills. Trash takes up space, uses valuable resources and harms the environment. People make a lot of trash. Not all trash needs to go in the garbage. There are other things that can be done. The 3R's help us remember what we can do to make a difference. Recycling is one of the 3 R's. Plastics can be recycled. They are divided into seven types of plastic. Plastics with the numbers 1, 2 and 3 in the circular recycling symbol are usually recycled in most communities. Plastics 4-7 are often times not recycled. Therefore, products that are packaged in plastics other than 1, 2, and 3 may not be good consumer choices. Reducing and reusing are also important parts of the 3 R's. It means people may have to change old habits and do with less. They need to put less into the waste stream. People have to consider making good choices to help protect the environment so it's a healthy place when you are an adult.

Eco-fact: Americans use between 300 and 700 plastic bags in one year. Most of these bags end up in landfills where it can take hundreds break down.

Before 3R's Activity:

- Teacher ask students what the 3 R's are. Teacher takes students responses and begins a chart with the 3 headings: Reduce, Reuse, Recycle.
- Teacher holds up a plastic shopping bag and wonders aloud: I wonder if I could reuse, recycle, or reduce plastic bags like this one in my daily life. I wonder why I should try to reuse, recycle, or reduce plastic bags.



- Teacher then says she knows a great book to remind her how to avoid waste and help our planet by making good choices and using the 3 R's.
- Teacher introduces the book "The Three R's: Reuse, Reduce, Recycle (What Do You Know About? Books) by Nuria Roca. Book is read aloud by teacher, independently by students, or by students with partners.
- Discussion questions for after reading the book:
 - How can you and your family avoid or make less waste?
 - How does avoiding waste help our planet ?
 - Teacher asks students to help her write a definition of each of the 3R's on the chart.(Note: do not write example at this point.)
 - Teacher can explain that the "waste stream" is the movement of trash from homes and businesses that is recycled, burned, or put in landfills.

Conducting 3R's Activity:

- Teacher shows her plastic bag again. Teacher explains that together we are going to develop a list of ways to reuse, recycle, or reduce plastic bags. Teacher will remind students that the best way to help the planet is to keep items out of the "waste stream" in the first place.
- Teacher divides the class into two groups: the inside group and the outside group. An even number of people is required for this activity. Teacher explains to class that they will form two circles one inside the other. The inside group will form a big circle in the center. The outside group will form a bigger circle around the inside group. Inside circle students will walk to the left and outside circle students will walk to the right. Teacher will give the direction for students to walk around in the circle and a few seconds later teacher will give directions for the students to stop. Students turn and face the person now opposite them in the other circle. Students will respond to teacher prompt topic. Repeat procedure stopping to for discussion prompts. There will be 3 different prompts each one will be used 2 times.
- Begin activity. Students will take places in assigned circle. Teacher will give the direction for students to walk around in the circle and a few seconds later teacher will give directions for the students to stop. Students turn and face the person now opposite them in the other circle. Teacher will prompt inside students to tell outside student: Give one way you can reduce using a plastic bag.
- Repeat activity 5 more times. Alternate role of talker and listener between the inside and outside circles each time activity is conducted. Each child will answer all 3 questions and listen to the answer of all 3 questions.

Prompts:

- Give one way you can reduce using a plastic bag. (use reusable shopping bags, buy less stuff, tell clerk a bag is not needed when buying one item)
- Give one way you can reuse using a plastic bag. (bring back to store and use again, line small trash can , clean out rabbit cage)
- Give one way you can recycle using a plastic bag. (not in curbside bin but by taking back to stores that accept them)
- Students will return to their seats and together class will put appropriate examples of each of the 3R's on the chart. Based on the responses from the circle activity student volunteers will provide examples that either student or teacher can add to class chart. There may be some overlap and duplicates for each column but that can lead to fruitful discussion.

After Conducting 3R's Activity:

- Students will write a persuasive paragraph in the form on an email. Students will use the information generated on the 3R's chart to write a paragraph to a fictional polluter or someone who does not make good trash reduction choices. The paragraph should have a main idea



sentence, 3-5 detail sentences, and finally an ending/clincher sentence. The paragraph should be attempting to persuade the recipient to change to more environmentally friendly 3R's behavior.

- Teacher may wish to show students what an email message looks like either on the computer or in a printed form.
- Students can create fun names for their email recipients: Polly Polluter, Willy the Waster, Landfill Linda, Plastic Paul
- Students can bring email home to show family and encourage discussions regarding the 3 R's and the important of making good waste reduction choices.

Adaptations:

- Teacher may play music to start and stop the circle as in "Musical Chairs."
- Teacher could create a template in a word document and students could type fictitious email message.

Extensions:

- Students may start a recycling program at school or home if this practice is not currently in place.
- Students may wish to contribute books that they no longer want to the school library, classroom library or public library. Students may also conduct a book swap in class.
- Students can learn about recycling crayons by looking at the recycling crayon lesson in the PreK-K section of this GEF website.
- See an award winning crayon recycling project on this GEF site. The kindergarten Daisy Troop #40926 began a Crayon Recycling Program at Laurel Plains Elementary School for National Green Week. Check out their story.