

Classroom Garbage Sort

Target Grade: 2nd-6th

Overview:

Students will examine the trash in their classroom. Students will determine what can and cannot be recycled. Next, students will get into groups to brainstorm different ideas for a school wide and class recycling campaign.

Objectives:

Students will be able to determine what can and cannot be recycled and demonstrate this by properly sorting or listing items.

Students will understand the importance of recycling by being able to describe the large amounts of garbage created daily.

Students will examine the amount of recycling created in the classroom. They will determine how much recycling they create in a week, month, and year and reflect on the impact recycling will make rather than throwing it into the garbage.

Background:

See Appendix I

Materials:

- Classroom garbage
- Posters or large pieces of paper for students to write down/brainstorm ideas
- Recycle bin
- Markers
- Extra trash bags
- Tarp or something large to put garbage on
- Recyclable items (optional)
- Plastic/Latex Gloves for use while sorting

Prep Time: 10 minutes **Activity Time:** 60 minutes

Nevada/California State Standards:

Nevada

Science

- L.5.C.4 Students know all organisms, including humans, can cause changes in their environment.

- L.8.C.3 Students will evaluate how changes in environments can be beneficial or harmful.
- P.2.A.4 Students know different objects are made of many different types of materials.
- N.2.A.1 Students know how to make observations and give descriptions using words, numbers, and drawings.

Math Extension

- 1.4.6 Estimate to determine the reasonableness of an answer in mathematical and practical situations
- 1.4.8 Generate and solve addition, subtraction, multiplication, and division problems using whole numbers in practical situations

English Language Arts Extension

- 6.3.6 Write an opinion statement
- 6.4.6 Write persuasive paragraphs that include supporting evidence

Social Studies Extension

- H1.3.3 Learn about individuals around the world and discuss their contributions
- H2.3.1 Discuss how conflicts can be resolved through compromise
- H3.3.4 Demonstrate respect for each other, the community, and the world

California

- 2: 4.A Make predictions based on observed patterns and not random guessing.
- 2:4. C Compare and sort common objects according to two or more physical attributes (e. g., color, shape, texture, size, weight).

NAAEE Standards:

- Grade 4: Strand 1: G: Drawing conclusions and developing explanations: Learners can develop simple explanations that address their questions about the environment.
- Grade 4: Strand 2.3: D: Global connections—Learners understand how people are connected at many levels—including the global level—by actions and common responsibilities that concern the environment.
- Grades 5-8: Strand 1 Questioning, Analysis, and Interpretation Skills: A) Questioning—Learners are able to develop questions that help them learn about the environment and do simple investigations.

Key Vocabulary:

- **Biodegradable:** something that breaks down naturally and becomes a part of the soil, water or air.

- **Compost:** broken down (decayed) plants, foods, and paper, can be combined with soil
- **Landfill:** place where garbage is stored
- **Recycling:** reusing items or sending them to places to be broken down and used again rather than placing them in the garbage

Lead Information/Engager:

Students will examine the garbage created in the classroom. Ensure there are no liquids in the trash can. Empty all the trash onto the classroom floor. It is recommended to place down a large tarp or trash bags to protect the floor and make clean up easier. In the trash there will most likely be paper, bottles, food, pencil shavings, and other various items. This activity has the most impact when done in the afternoon and there is a greater amount of garbage created. You can also bring additional items from home that can be recycled to help reinforce the importance of recycling and allow students to see a greater variety of items that can be recycled.

Activity One:

Ask students what they see lying on the floor. Ask them where they think garbage goes. Continue to use probing questions to have students examine the garbage. Questions used will vary depending on grade level. For older grades, have them determine the different types of recycle. In younger grades, help students determine what can be recycled. Have students look at different items such as plastic, glass and paper and ask them what they are made of. Discuss with students where garbage goes and how landfills are quickly filling up. If age appropriate discuss decomposition and how long it takes for items in landfills to decompose, if at all. Ensure they understand the importance of recycling by explaining how different items can be recycled so they don't go into the landfills, instead they can be reused.

TRANSITION:

Ask students what they can do to help the environment. Have students look at the garbage on the floor and decide what can be recycled or reused. Wearing plastic gloves have students help sort the garbage into actual garbage and recyclables. You can choose to have them sort recyclables into different types of recycling, glass, paper, plastic or just into one group of recycling items depending on the maturity of the class.

Activity Two:

Have students break into groups. Give them a poster board and ask them to brainstorm ideas for a school wide recycling campaign. See Appendix III for ideas. Once students have all ideas on their poster, have them share with their classmates. Discuss the

options and take a class vote about which project they would like to do. Implement school project. If a school project is not possible, create a classroom project.

Assessment/Evaluation:

Both formal and informal assessment can be used. Formal assessment could include a quiz examining what items can be recycled. Informal assessment would be watching students in the classroom to see if they are more aware of their everyday items and recycling them in the classroom recycling bin.

Constructed Response:

What can you do to help the environment? If anything, what would you like your family to do to help reduce things that go into the landfill?

Cross-Curricular Extension:

- **Math:** Sorting, graphing, and predicting. Have students sort the garbage into items that can and cannot be recycled. Students can graph the different items to be recycled, glass, plastic, paper etc. Students can predict how much they will be able to recycle in a week, month, year based upon the items collected.
- **English Language/Art Extension:** Once a group project has been chosen, have students create fliers to pass out to other classes encouraging them to participate in recycling. Depending on grading level, students could also create a commercial. When brainstorming ideas, students could choose the best idea from their group, and then write a persuasive proposal as to why the class should choose their project. Organize a "trashion show" with students using reusable items to create fun costumes. Have them share their costumes in fashion show style.
- **Social Studies:** Ask students to think about the impact that recycling will have on the community. Have them write a letter to someone to explain the benefits and/or to encourage recycling. Students can also be given different countries to research what they do to recycle. Students might interview friends and family to see how they feel about recycling. Students can also share with them the importance of recycling and discuss with them what they learned in class.

Differentiation:

Students can be given different books as resources to help them learn more about recycling. These books can be used to learn about how different items are recycled or to get ideas for the recycling projects. For ELL students, pictures can be used to help them better understand items that can be recycled. For GT students, they could be required to research what other schools have done; survey family and friends on how important recycling is to them; be required to work alone on creating ideas rather than

in a group; or research what current recycling campaigns are taking place in the community.

Appendix I

Background Information:

Information adapted from *Waste and Recycle* by Sally Hewitt



Recycle logo; ensure your students are familiar with this logo and are able to identify it on different items.

Before throwing something away, you should always ask if it can be reused or recycle. What is recycling? Recycling means breaking down items such as clothes, computers, cans, or bottles, and using the materials and parts to make something new. Recycling uses less energy than making something new from raw materials.

Different types of materials:

Raw materials are natural such as rubber, metal, and wood. Raw materials can make things such as tires, cans or paper.

Man made materials are made from raw materials. Materials can be divided into two groups, nonrenewable and renewable. Nonrenewable materials include oil, metals and fossil fuels. Renewable materials include cotton and wood because they will renew.

Organic Waste:

Organic waste is all the food waste we throw away. This food can be used to create compost. Some families may have compost at their homes; classroom compost can also be created if possible. Although all food waste will break down, it is best to avoid adding cooked meat or dairy to the compost as this attracts animals. Food waste makes up a large amount of our garbage. Uncooked fruit and vegetable scraps, tea bags, and coffee granules, mixed with garden weeds, grass cuttings, and some paper make good compost for the garden. Compost bins may be available from your local waste removal provider.

Recycling Textiles:

Clothes, shoes, blankets and duvets are all made of different kinds of textiles. They can be cleaned, mended, reused and even recycled. Clothes that are still in good condition

can be donated to various charities. Clothes that cannot be reused can still be recycled. Wool clothes can be made into yarn, and silk and cotton can be used for wiping clothes. Other clothes can be shredded and made into materials used for padding and lining things such as roofs and furniture.

Plastics:

Plastics are made from oil. Some plastics are biodegradable, but most plastic will stay around and pollute the soil, water and air. Do not throw plastics away, remove the plastic top, rinse bottles out and place them in the recycling.

Metal:

Metal is a raw material mined from rocks and earth. It is nonrenewable. Soda cans are made from aluminum and food cans are made from steel. Aluminum and steel scrap metal can be recycled.

Glass:

Glass is made of natural raw materials including sand, soda ash, and limestone. Once glass has been made it never breaks down. However, glass can be recycled, in fact fewer raw materials and less energy are needed to make recycled glass than new glass. There are a few types of glass that are non-recyclable including glass light, glass cooking pots, mirrors and window panes.

Appendix II

RESOURCES:

Recycle City:

<http://www.epa.gov/recyclecity/>

- Tour recycle city
- Dumptown Game
- Recycle City scavenger hunt

Earth 911:

<http://earth911.com>

- Find locations to recycle different items in your area
- Articles with creative ideas to reuse different items often thrown away

Nevada Recycling:

<Http://nevadarecycling.com/>

- Las Vegas recycling information

<http://nevadarecycles.gov/>

- Contains information about recycling in Reno and Las Vegas
- Links to local recycling programs

Possible School Show:

Cans for Kids: <http://www.cansforkids.org/index.htm>

Book Resources:

Our Big Home, An Earth Poem by Linda Glaser

This book is recommended for 2nd-4th grade. School library journal states, "A joyful celebration of the Earth with the important environmental message that we share the planet not only with all the various people of the world, but with the plant and animal worlds as well. The loosely rhymed poem describes water, sun, soil, air, wind, sky, night, and moon and serves as a breezy introduction to ecological interdependence."

Where Does The Garbage Go? By Paul Showers

This book is recommended for 3rd-5th grade. School library journal states, "This story begins with a teacher telling her class about the "way things used to be" and contrasting it with current landfill and recycling programs. Clearly written and accessible to young children, the book explains what used to happen to solid waste, what goes into landfills, and how aluminum, newspapers, glass bottles and jars, and plastics are recycled today."

Appendix III

Case Studies and project ideas:

- One school in six months collected 10,000 lbs of paper and sent it to be recycled. The school saves money by not having to pay for as much garbage to be taken away. They were also awarded a grant for their good work. There are other ways to recycle paper other than just sending it to be recycled; for example, use both sides of the paper, buy recycled paper goods, use a handkerchief rather than using tissues.
- Use organic waste to create compost either at school or home. A wormery can be created to help with the compost. Red worms can usually be purchased from nurseries and sometimes pet stores.

Wormery

Purchase a plastic box with a lid and about 100 red worms. Create holes in the lid. Line the bottom with torn up newspaper, compost and leaves and then sprinkle with water.

Add organic waste, crushed egg shells, and red worms.

Keep the lid on the compost and it should be ready in about three months.

****See also Cheap and Easy Worm Bin, How to and Resources! In the GO GreenPower Lessons, Activities and Resources Binder.***

- Textile recycling competition:

All schools in a district or area can join together and have a contest to see who can collect the most textiles. Anyone from the area could drop off clothes and shoes for recycling of their choice. Students, teachers, and school staff should participate also. After a determined amount of time each school would count the amounts collected. Local organizations could be encouraged to make donations for a prize for the school that collects the most items. Most local charities will pick up donations.

- Plastic Bags:

Have students bring in all their plastic bags from home. Deal them out to students. Challenge them to see how many different ways they can use the bags. When the bags wear out, recycle them. Encourage students to start using cloth bags.

- Recycling Party:

Ask guests to come dressed up in costumes with a recycling theme that encourages others to recycle. Make invitations out of recycled products. Ask guests to bring homemade foods.