



OVERVIEW

Students will learn about the second “R” in protecting our environment: Reusing (and repurposing), through classroom discussion and creating their own repurposed items.

Learning Targets

- Students will describe repurposing as taking an object and creating a new way to use it. This is often done with objects that have outlived their original usefulness. Another term for repurposing is upcycling.
- Students will create ways to reuse materials in their original form instead of throwing them away, or pass those materials on to other people who can use them.
- Students will demonstrate social and economic benefits that may be gained from reusing and repurposing objects.

GLEs

See attachment

Materials Needed

- Empty plastic gallon milk jug (one for every student in the class)
- Scissors
- Single-punch hole puncher
- Green acrylic paint
- Clear drying craft glue
- Wire or rope for hanging
- Twigs (five per student)
- An assortment of stones, pinecones, pine needles, more twigs or any other decorations
- Bird seed

Background Information

Every year, people in America throw away 50 billion cans, 27 billion glass bottles and 65 million plastic caps and metal jar covers. Most of our garbage is sent to a dump or a landfill where it can take hundreds (or millions!) of years to decompose. In an effort to protect our environment, we can all do our part to reduce the waste that we produce every day. There are 3 Rs in saving our environment: Reduce, Reuse and Recycle. This lesson focuses on the 2nd R: Reuse. You can reuse materials in their original form instead of throwing them away, or pass those materials on to others who can use them. Think about a time when you may have gone to a garage sale. It is easy to recognize that one man’s trash is another man’s treasure. Items can also be repurposed. Repurposing means to take something that you no longer have a use for and to make it into something that we can use or need.

We can reuse lots of items in our daily lives:

- Take along reusable cups or travel mugs instead of paper, plastic or Styrofoam cups that you throw away.
- When you do use disposables such as plastic cups, plates, utensils and plastic food storage bags, don't throw them away. Wash and reuse them, as most of them will last for a long time with many uses.
- Use washable table napkins instead of paper napkins — cloth napkins are usually much larger and more absorbent than paper ones.
- Hold a garage sale to get rid of anything around your home you don't use any more.
- After cleaning glass jars and small pots, you can use them as small containers to store odds and ends.
- Donate old electrical equipment to schools or community centers.
- Bring a reusable bag to the store with you instead of taking home new paper or plastic bags.
- Plastic containers and reusable lunch bags are great ways to take your lunch to school without creating waste.
- Coffee cans, shoe boxes, margarine containers and other types of containers people throw away can be used to store things or can be used for fun arts and crafts projects.
- Use all writing paper on both sides.
- Use paper grocery bags to make book covers rather than buying new ones.
- Use silverware and dishes instead of disposable plastic utensils and plates.
- Store food in reusable plastic containers.
- Rechargeable batteries can be reused many times before they must be thrown away. Regular batteries create unnecessary waste.
- After mowing your lawn, instead of throwing the grass clippings away, leave them in your garden. As they decompose, they add nutrients to the soil and fertilize plants.

ACTIVITY

Part I (Recommended for grades K to 4)

1. Show the class the following video from The New York Times. <http://thekidshouldseethis.com/post/pass-it-on-turning-scrap-into-soccer-balls-for-village-children>. In a village outside of Kinshasa, the capital of the Democratic Republic of Congo, this Congolese gentleman crafted scraps of garbage into a homemade soccer ball.
2. Ask the students the following questions:
 - What was the man in the video doing?
 - What materials was he using?
 - Did the kids notice that they were not playing with a traditional soccer ball?
 - What does "One man's trash is another man's treasure" mean?
 - What are things that we can use to turn scraps into something that we can use?
3. Review some of the ways objects can be reused from the background section. Ask students what would happen if we didn't reuse or repurpose any of our waste.

Part II (Suggested for grades K to 4)

Activity: Turn an old plastic milk jug into an easy-to-make bird feeder.

1. To make the main entrance on the feeder: Draw and cut out a large circle (about 2½ inches wide) a few inches up from the bottom of an empty, clean gallon milk jug.
2. To make the perch: Make a small twig-sized hole just below the large one, either with a nail or a hole puncher. (See step 5 for adding the perch.)
3. Brush green acrylic paint on the outside of the jug and let it dry. Using any clear-drying craft glue, glue leaves onto the outside of the jug.
4. To make the hanger: Punch a hole through both sides of the top just below the cap and slip a wire through it.
5. To make the roof and final touches: Glue about a dozen or so five-inch twigs to each side of the jug's top, as shown. Poke another, thicker twig into the perch hole. Glue on stones, pinecones, pine needles, more twigs or any other decorations you like. Paint over the leaves with clear non-toxic craft glaze or finish.
6. Add birdseed and hang your feeder from a tree branch.
7. Ask students, what are ways you can reuse waste in our classroom? Our homes? Have students identify four ways they will reduce and reuse waste.

This activity was published in *Ranger Rick* magazine, a publication of the National Wildlife Federation.



Part III - Repurpose Challenge (Modeled after the DECA Challenge) (Recommended for grades 3 to 4)

1. In this engineering-based challenge, students will work in teams to come up with an innovative use for a common item. This activity should be spread out over at least two weeks to give student teams adequate time to brainstorm, develop and present their repurposed objects.
2. You will need to pick a common item for students to engineer into a repurposed item. Suggested items include a cardboard box, newspaper, aluminum cans, plastic water bottles, plastic bags, etc.
3. Other materials can be used in conjunction with the item you choose, but the chosen item must be the primary component of the final creation. Encourage students to be frugal!
4. Divide students into teams and recall the activity of creating the birdhouse from the milk jug. Explain that they will be engineering their own product from an item that is commonly found in many homes and schools. Show the following video that gives an example of how students took plastic bags and repurposed them: <https://www.youtube.com/watch?v=ASOEOpXLeY>. Encourage teams to create a product that will be useful to the community.
5. Announce the item that students will be using. Students will need to obtain all materials to make their product. Allow adequate time for students to complete this task.
6. Have teams present their products to the class and/or school. This is a great opportunity to incorporate technology.

Part IV (Recommended for grades 3 to 4)

1. This activity is similar to the Repurpose Challenge, only in this version students will design and market an item that has been repurposed from a previously used one. This activity should be paced out over several months to allow students to develop and market their items.
2. Have students recall the video from Part I. In this video the man makes a soccer ball to give to children. Donating objects like this is a socially responsible thing to do and should be encouraged. However, there are some items that can be made from repurposed objects that have economic value. For example, these bracelets made from soda can tabs (<http://www.wikihow.com/Make-a-Pop-Tab-Wristband>) are sold by an environmental club at a high school in Baton Rouge to raise money for the school's recycling program.
3. Ask students if there is anything they would like to raise money for at their school. It may be to fund a school recycling program, a school garden or a donation to a charity. Let students guide the discussion.
4. Explain to students that they are going to raise money for the purpose identified in #3. To do so, they will be making their own reused objects, marketing and selling them.
5. You may choose to do this activity individually or in groups. Have students visit the following website (<http://www.artistshelpingchildren.org/craftsbyitems.html>) to explore different craft options. Students should only be allowed to pick out an option that will allow them to reuse or repurpose items they have (students should not go out to buy these items, nor should they purposefully generate trash in order to complete the craft!).
6. In order for students to create a product that will sell, it will be useful to explain the concepts of wants/needs.
7. Decide on a date on which students will come together to sell their objects. This can be a big event for the school, or a classroom sale between students. Encourage parents and community members to get involved.
8. A couple of weeks before the sale have students develop marketing materials for their object. These materials can be a flier, poster or presentation. Explain that the point of marketing is to get other people to buy their objects.
9. The fundraising, or sale, day should be a great occasion for students to share their creations. Keep track of raised funds according to your school's policies.
10. Following the sale, congratulate the students and share with the class how much money was raised.
 - a. How did students feel about this experience?
 - b. Did the objects that they and their classmates created make them feel differently about reusing/repurposing?
 - c. Did students learn of any objects they could make for their homes that could help them to save money?
 - d. Share with students the website for TerraCycle (<https://www.terracycle.com/en-US/>) and explain that some people make a living from repurposing and recycling items. Ask students if they think this is something they could do.

CALL TO ACTION

1. Hold a classroom "Yard Sale" but instead of charging money for items sold, challenge other classes to bring in their own old things to use as "payment." One old treasure for another. Take all the leftover items collected in the sale and bring to a local homeless shelter or other charity that accepts donations.
2. Identify items that are being thrown away in the classroom and have students identify ways to reuse or repurpose them.

OTHER RESOURCES

- **Keep Louisiana Beautiful** <http://keeplouisianabeautiful.org/>
- **Keep America Beautiful** <https://www.kab.org/>
- **FreeCycle – Online community for reusing materials** <https://www.freecycle.org/>
- **Making a Chair from Plastics found in the Sea**, <http://thekidshouldseethis.com/post/sea-chair>
- **Reusable Coffee Cups Movement**, <http://thekidshouldseethis.com/post/52140296968>