



## LESSON 9: Reusing/Repurposing

### 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

#### Reduce, Reuse, Recycle

The three R’s of sustainability are to reduce, reuse, and recycle. It is no accident that they are listed in that order, as reducing the use of materials has the greatest environmental impact – while recycling has the least. Closely related to both reducing and recycling is the act of reusing. Reusing leads to a reduction in material use because you eliminate the need to use new materials. Reusing is sometimes called “upcycling” because, it gives an old object a new life that often has greater value. Unlike recycling, a reused item doesn’t have to be broken down and remanufactured.

#### Necessity Is the Mother of Invention...

The idea of upcycling is not new. During the Great Depression, crafty housewives still managed to cloth their families by reusing using cotton and feed sacks, which were made out of cotton at the time. These “flour sack dresses” became so common that manufactures began printing cotton and feed sacks with colorful prints in hopes that the prettiest designs would be purchased.

The flour sack dresses were made out of economic necessity. Today, reusing is regaining importance because of environmental necessity. There is a growing body of evidence that our habits of replace before repair, single-use plastics, and planned obsolescence are causing increased pollution and habitat destruction. Knowing this, we should think of ways to reuse the objects we have.

### Examples of Reusing and Repurposing

Using a reusable grocery bag is a better environmental choice than a single-use plastic one. However, sometimes you are traveling without your reusable bags and you unavoidably pick up a single-use one. What do you do? Plastic grocery bags make excellent trash can liners, and using the bags this way is an environmentally friendly practice. Some other examples of reusing or repurposing include:

- Glass jelly jars and other similar containers make great drinking glasses.
- Old clothing and bedding can be turned into kitchen towels, quilts, shopping bags, rugs, etc.
- Plastic food containers can become “to-go” containers for your dinner guests or your own lunch.

There is a community devoted to developing ideas to reuse and upcycle old items. Pinterest, Instagram, and many other blogs and websites are great resources for ideas.

### Reusable By Design

Some of the objects we buy are designed to be reused repeatedly, and can take the place of single use items. For example, refillable water bottles and travel mugs replace disposable cups, recycled plastic or cotton totes can replace plastic grocery bags, metal straws can replace plastic ones, and waxed cloth can replace plastic films. By choosing items that are designed to be reused, you are helping to eliminate waste and, in some cases, saving money.

### Donation

Have you ever heard of the expression, “One person’s trash is another person’s treasure?” Items that are no longer useful to you and that you cannot think of a way to repurpose may have value to someone else. By trying to donate (or sell) them, you will not only be reducing waste, but helping others. Churches, community centers, thrift stores, schools, and nonprofit organizations often take a variety of donated items. You may even receive tax benefits from your donations!

### Environmental Impact of Reusing

There are numerous environmental benefits to reusing materials. Reusing helps to prevent the pollution that is caused during the production of new materials and the disposal of old materials. Reusing also saves energy and reduces greenhouse gas emissions that are normally associated with production, disposal, and transport of materials. It helps to keep objects out of landfills, and saves you money in the process!

### 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>