

DEQ in the Classroom:

Something Old, Something New, Something Borrowed, Something Reused?



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Grade Level:

Grades 4 – 12. Many options are presented for the individual/small group component of this activity; teachers can adapt the assignment to meet different educational levels.

Time Required:

Varies, depending on type of assignment(s) chosen. See Steps 5, 6, and 7.

Objective:

Through interviews with older Americans and/or individuals from different cultural backgrounds, students gain an understanding of how the concepts of reduce, reuse, and recycle are neither new nor specific to American culture – they frequently are, and have been, part of a way of life and done out of necessity.

Meets State Standards:

Grade 4: 4.SS.3.1.2, 4.LA.6.1.1, 4.LA.6.1.3, 4.LA.6.2.1

Grade 5: 5.SS.3.1.2, 5.S.5.1.1, 5.LA.6.1.1, 5.LA.6.1.2, 5.LA.6.1.3, 5.LA.6.2.1

Grade 6: 6-9.GWH.1.8.4, 6-9.GEH.1.8.4, 6-9.WHC.2.5.4, 6.S.5.1.1, 6.LA.6.1.1, 6.LA.6.1.2, 6.LA.6.1.3, 6.LA.6.1.4, 6.LA.6.2.1

Grade 7: 6-9.GWH.1.8.4, 6-9.GEH.1.8.4, 6-9.WHC.2.5.4, 7.LA.6.1.1, 7.LA.6.1.2, 7.LA.6.1.3, 7.LA.6.1.4, 7.LA.6.2.1

Grade 8: 6-9.GWH.1.8.4, 6-9.GEH.1.8.4, 6-9.WHC.2.5.4, 8-9.ES.5.1.1, 8.LA.6.1.1, 8.LA.6.2.1

Grade 9: 6-9.GWH.1.8.4, 6-9.GEH.1.8.4, 6-9.WHC.2.5.4, 9-12.USH2.1.4.3, 9-12.USH2.1.4.4, 9-12.E.3.1.1, 8-9.ES.5.1.1, 9-10.B.5.1.1, 9-12.Spch.6.1.2, 9-12.Spch.6.1.3

Grade 10: 9-12.USH2.1.4.3, 9-12.USH2.1.4.4, 9-12.E.3.1.1, 9-10.B.5.1.1, 9-12.Spch.6.1.2, 9-12.Spch.6.1.3

Grade 11: 9-12.USH2.1.4.3, 9-12.USH2.1.4.4, 9-12.E.3.1.1, 9-12.Spch.6.1.2, 9-12.Spch.6.1.3

Grade 12: 9-12.USH2.1.4.3, 9-12.USH2.1.4.4, 9-12.E.3.1.1, 9-12.Spch.6.1.2, 9-12.Spch.6.1.3

Meets standards in social studies, geography, history, economics, science, language arts, and speech.

Can also meet additional standards in Language Arts and Humanities, depending on the activity(ies) chosen for the assignment.

Focus:

Waste, pollution prevention, reduce, reuse, recycle.

Materials:

Reused items from home

Pen and paper

Tape recorder and audio cassette tape or video recorder

Other materials will be needed depending on the assignment(s) chosen

Background:

The concepts of “reduce, reuse, and recycle” are becoming increasingly common in our society. As concern for the environment grows, so does the emphasis on the need to conserve natural resources. While the terms “reduce, reuse, recycle” may have grown out of the American “environmental movement,” the actual acts of reducing, reusing, and recycling have been around nearly since the beginning of time and are practiced around the world.

Historically, and currently in many parts of the world, using less (reducing), reusing, and recycling were and are part of the daily act of living. In many cultures, and in most of human history, humans didn’t have the luxury of throwing things away that many “developed” societies do now.

The amounts and types of items reused and recycled have changed over the years and based on circumstances (war, economics, drought, trade, environmental issues, etc.), which can affect the supply, demand, and scarcity of different items. When items are scarce (supply is low), there is increased incentive to reduce one’s use or reuse items.

For example, during World War II, metal was in high demand for use in the war, which caused its supply to the general public to diminish, which made it a scarce commodity. This, in turn, made people more likely to reduce their use of metal products and to reuse and recycle them when possible.

In general, as items become easier and less costly to replace (supply is high), people tend to use more and reuse less. It becomes easier to throw something away and replace it with something new.

According to the National Recycling Coalition^{*}, before the 1920s, 70% of U.S. cities ran programs to recycle certain materials. During World War II, industry recycled and reused about 25% of the waste stream, but after World War II, the nation’s composting and recycling rate dropped to 7.7% of the waste stream (1960), but increased to 17% in 1990. It’s currently up to around 33%.

* <http://www.nrc-recycle.org/whyitsimportant.aspx>

Vocabulary:

Compost	A mixture of decaying organic substances, such as dead leaves or kitchen scraps, used for fertilizing soil. <i>Or (verb)</i> , To make this type of substance (e.g., to compost grass clippings).
Conserve/Conservation (of natural resources)	To use natural resources carefully to prevent their depletion.
Demand (Economic)	The desire to purchase something, coupled with the power to do so; the quantity of goods that buyers will take at a particular price.
“Great Depression”	The economic crisis and period of low business activity in the U.S. and other countries, roughly beginning with the stock-market crash in October, 1929, and continuing through most of the 1930s.
Heirloom	A family possession handed down from generation to generation.
Landfill	An area of land in which wastes are placed for permanent disposal. A landfill is regulated by the government and is designed to protect the environment from the impacts of the wastes that are placed there.
Pollution Prevention (P2)	Practices that reduce or eliminate the creation of pollutants or waste through increased efficiency in the use of resources. P2 goes beyond recycling and reusing and involves using resources efficiently to not create waste in the first place.
Recycle(ing)	Transforming waste materials into new products or resources (e.g., sending used aluminum cans to a recycler to be melted down and made into new cans).
Reduce(ing)	Using less so that less waste or pollution is generated (e.g., not taking a bag at the store if you can carry your items without one).
Reuse(ing)	Using something again (e.g., hand-me-downs, grocery bags used over and over, a family heirloom candy dish passed through generations).
Scarce(ity)	Shortness of supply.
Supply (Economic)	The quantity of a commodity that is in the market and available for purchase.
“Three R’s”	Reduce, reuse, recycle. Considered the fundamental hierarchy to manage waste.
Waste	Trash. Any material (solid, liquid, or contained gas) that is discarded, recycled, reused, or considered inherently waste-like.
World War II	A war fought from 1939 to 1945, in which Great Britain, France, the Soviet Union, the United States, China, and other allies defeated Germany, Italy, and Japan.

Procedure:

Ahead of time. A few days before you plan to begin the activity, ask students to each bring to class one item that belongs to them or to their family that was originally someone else's (something that is being reused) – these things may be hand-me-downs, items purchased at a garage sale or thrift store, family heirlooms passed down through the generations, etc. Keep the assignment as broad as possible. You want to end up with a wide variety of re-used items. Have students bring their items on the day you plan to begin the activity.

Step 1. Have students share what they brought to class. This sharing can be more or less in-depth, depending on the amount of time you have. Possibilities include:

- Have each student share and discuss his/her item with the class.
- Have a few students share their items with the class.
- Have a show of hands of how many items were hand-me-downs, how many from garage sales, how many heirlooms, etc.
- Have students share with each other in small groups.
- Have students share with each other in pairs.
- As a class determine who brought the oldest item, the newest item, the item used by the most people, etc.
- Any combination of the above.

Step 2. After the students have shared and discussed their items, discuss as a class what the items all have in common. One characteristic they will all have in common (there may be others) is that all of the items are being (or have been) reused.

Step 3. Discuss the concept of the “Three R’s”: reduce, reuse, recycle. Most students will likely be familiar with “recycle,” but may not be as familiar with the first two concepts. One important idea to include in your discussion is that the “three R’s” are a hierarchy: you want to reduce first, then reuse, then recycle. Recycling is the last resort to avoid putting something in the garbage.

Provide an example of reduce (see page 5), then ask students to provide more. Do the same for reuse then recycle.

In many cases, the line between “reduce” and “reuse” can be blurry – by reusing something you often are reducing (you don’t need to purchase something new).

Note the difference between “reuse” and “recycle”: when something is reused, it is used again in its original form (even if the use has changed). When something is recycled, it is made into something new (either the same thing again or something different.) See page 5 for examples. You may choose to use these or come up with your own.

Example: Plastic grocery bag

Reduce

- Don't take a bag at a store if you can carry your items without one.

Reuse (Once you have a plastic grocery bag, what can you do with it?)

- Bring your bag back to the store and use it again.
- Use your bag to carry your lunch to school.
- Use your bag as a garbage bag.
- Use your bag to pick up after your pet when it goes to the bathroom.
- Use your bag for soft "packing" material when packaging something to mail.

Recycle (Last resort, to avoid simply throwing the bag away.)

- Bring your bag back to the store and place it in the store's recycling bin. Be sure the bin specifies it is for plastic bags and be sure you have taken everything out of it.

The store will send your bag (with others) to a recycler where it will be made into something new, such as composite lumber, new bags, crates, or pipe.

Step 4. Discuss the origin of the "Three R's." How long do students think these concepts have been around? What prompted them?

While we often think of the "3 R's" as being born of the environmental movement (to conserve natural resources and landfill space) the concepts have been around, and been practiced, since the beginning of time. It is only in more recent years, in more "developed" societies, that we have begun to dispose of items as readily as we do. While the concepts have been around for many, many years, the terminology we use to describe them today is relatively new.

The amounts and types of items reused and recycled have changed over the years and based on circumstances (war, economics, drought, trade, environmental issues, etc.), which can affect the supply, demand, and scarcity of different items. When items are scarce (supply is low), there is increased incentive to reduce one's use or reuse items.

For example, during World War II, metal was in high demand for use in the war, which caused its supply to the general public to diminish, which made it a scarce commodity. This, in turn, made people more likely to reduce their use of metal products and to reuse and recycle them when possible.

Step 5. Outline the class assignment. (*Short on time? Skip to Step 7.*)

Have students (individually or in groups) interview people who have lived in societies where reducing and reusing were always a part of life – not because it was environmentally "good" (to conserve natural resources or landfill space), but because it was necessary for daily life (due to scarcity). Two good groups to draw from for interviews are older individuals (especially those who lived through the Great Depression and/or World War II [in the U.S. or abroad]) and immigrants from third world countries.

There are many options as to what to do with these interviews. Allow two weeks to more than a month for students to conduct the interviews and complete their projects. You may want to have different components of the assignment due at different times to help students complete the assignment in a timely manner (e.g., have the person picked for the interview by X date; have the interview completed by X date, etc.)

Have students conduct research about the time period, circumstances, etc. related to their interviewee to support and augment what they learn from their interviewee.

Mix and match from the following or come up with your own ideas:

- Have students develop a “movie” based on their interview. They could include not only the interview, but background on the time period, location, and person’s situation, additional narration, etc.
- Have students give oral reports based on their interviews. Again, provide background etc., as well as information gleaned from the interview itself.
- Have students develop a timeline that highlights key components and common themes of the interview(s). See attached example, page 10.
- Have students write a play based upon the person they interviewed and the time/place that person lived. Incorporate how that person reduced/reused/recycled as part of the play. Perform for others.
- Have students develop a poster or bulletin board based on the results of their interview.
- Have students write a report based on the results of their interview.
- Have students try their hand at reusing items, as their interviewee did. For example, they could try making a quilt out of old scraps of material, using a hammer to straighten bent nails so they can be reused, etc.
- Have students write in a journal, draw a picture, create a collage, write a poem, choreograph a dance, or use art in some other way to express what they learned from the interview.

Step 6. Have students turn in or present their projects from Step 5. Depending on what project(s) your class did, you may want to include the interviewees, other classes, parents, or others in the audience for presentations.

Step 7. (optional). Bring in a guest speaker.

Invite a guest speaker to your class that fits the same profile as suggested interviewees in Step 5.

This can also be done as an alternative to the individual assignments in Step 5.

Questions for Discussion:

1. Explain the differences between “reduce,” “reuse,” and “recycle.”

Reduce means to not use something or create waste in the first place. Reuse means to use something again. Reusing can also lead to reducing (e.g., if you use a bag again [reuse] then you eliminate the need to use a new bag [reduce]). Recycle means to take something old and make it into something new. See example on page 5.

2. What items that your interviewee/guest speaker reduced/reused/recycled surprised you the most?

3. What items that your interviewee/guest speaker reduced/reused/recycled do you think would be the most difficult to reduce/reuse/recycle today, in our society? Why?

4. Are there things they did that you think could become the norm in our society now? Why or why not?

5. Are there things they did that you, realistically, could or would do in your life that are different from things we typically do?

6. What do the concepts of supply, demand, and scarcity mean? How do they relate to your project(s)? See definitions under “Vocabulary,” page 3.

7. What does the concept of natural resource conservation mean? How does it relate to your project(s)? See definition under “Vocabulary,” page 3.

8. How do the attitudes of your interviewee, who was likely reducing, reusing, and recycling due to scarcity and demand issues, differ from those who are doing these actions to conserve natural resources?

Assessment/Follow-Up Suggestions:

- Discuss recycling in more depth. If your school has a recycling program, visit its recycling bins or get a bin for your class. Identify the recycling symbol and discuss what it means. Discuss what recycling is and how it works. Discuss purchasing recycled products and how to tell if they are recycled.
- Arrange to have your class watch the garbage and/or recycling being picked up from your school. If possible, arrange for the trash/recycling collector to stay a few minutes for the students to ask him/her questions.
- Start a recycling program at your school. If one already exists, find ways to enhance the program (increase the number of commodities that are recycled, help publicize the program/remind students/staff to recycle, etc.).
- Research recycling opportunities in your community. Does your community have a recycling program? What products will it accept? (Not all things that can be recycled are accepted in all communities.) Does your community provide curbside recycling? Check out DEQ's online recycling directory to learn more about recycling options at http://www.deq.idaho.gov/waste/recycling/recycle_home.cfm.
- Have students bring in products from home or look at products in the classroom. What could be reused? What can be recycled? Look at labels to see which products were made with recycled content.
- Take a field trip to your local sanitary landfill or to a recycling center. Or, invite a guest speaker from your local sanitary landfill or recycling center to visit your class.
- Play "P2 Bingo" (download from http://www.deq.idaho.gov/waste/educ_tools/bingo_lp.pdf).
- Visit a nearby composting area (possibly at a community garden, private residence, or landfill).
- Start a composting program at your school or at home.
- If your students worked with residents of a particular retirement community, nursing home, or immigrant community, work with that community to develop its own recycling or composting program. Check first to ensure they are interested.
- Initiate a campaign to encourage students and staff at your school to reduce the amount of waste they generate (e.g., copy and print double-sided, use the back of used paper for homework, initiate a "waste-free lunch" day or program [see www.epa.gov/epaoswer/education/lunch.htm], etc.).
- Check into local charities that accept used goods for resale. Collect used goods from students to donate.
- Bring in old Christmas or birthday cards and have students use them to create new gift tags.
- Buy inexpensive tote bags and have students decorate them to give to Mom or Dad for use as reusable grocery bags, or buy reusable lunch bags and have them decorate for themselves. These can be found at craft shops or online at sites such as <http://www.orientaltrading.com>. (*DEQ does not endorse Oriental Trading Company or any other vendor. This Web site is given as an example only.*)
- Have your students make art projects from reused materials. Many ideas are available on the Web from sites such as <http://www.kinderart.com/recycle>. (*DEQ does not endorse KinderArt or any other vendor. This Web site is given for as an example only.*)

Additional Resources:

DEQ Kids: Let's Talk Trash: What to do With the Garbage in Your Home (DEQ activity booklet)
http://www.deq.idaho.gov/waste/educ_tools.cfm, Student Resources

Encyclopedia of Earth: Recycling and Environmental History
<http://www.eoearth.org/article/Recycling>

EPA Environmental Kids Club: Garbage and Recycling (U.S. EPA Web site)
<http://www.epa.gov/kids/garbage.htm>

Online Recycling Directory (DEQ Web site)
http://www.deq.idaho.gov/waste/recycling/recycle_home.cfm

Pollution Prevention (DEQ Web site)
http://www.deq.idaho.gov/multimedia_assistance/p2/overview.cfm

Recycling in Idaho (DEQ Web site)
<http://www.deq.idaho.gov/waste/recycling/recycling.cfm>

Travel and History: Wars and Battles, World War II Rationing, The Home Front
<http://www.u-s-history.com/pages/h1674.html>

Waste-Free Lunches
www.epa.gov/epaoswer/education/lunch.htm

Waste Management Educational Tools (DEQ Web site)
http://www.deq.idaho.gov/waste/educ_tools.cfm

Waste Management and Remediation: Programs and Issues (DEQ Web site)
http://www.deq.idaho.gov/waste/prog_issues.cfm

Memory:
Feed and flour sacks were made of cotton material of various colors and prints. These were used for making dresses, shirts, etc. Remembers her mother going to the feed store with her dad so that she could pick out the feed sacks she wanted for clothes.
Example of “reuse.”

Memory:
Gasoline was rationed to make sure there was enough for the war. Ration stamps were issued; each family was given a certain amount per month. Remembers her mother saving stamps to buy gas to go to visit family in Kansas.
Example of “reduce.”

Memory:
Younger brother straightened bent nails with a hammer so they could be used again.
Example of “reuse.”

Memory:
Cars were not manufactured during most of the war. (Factories were used for making things such as tanks.)
Example of “reduce.”

Memory:
Paper and steel were recycled. Took part in paper and metal drives, where they would go around with wagons collecting newspapers or scrap metal. The steel was used for war equipment.
Example of “recycle.”

1928

1929

1941

1945

Betty Campbell born to a farm family in Oklahoma.

Great Depression starts.
Betty is 1 year old.

Great Depression ends.
U.S. enters WW II.
Betty is 13 years old.

WW II ends.
Betty is 17 years old.

Sample Timeline