

## Climate Change Lesson 6 - Recycling

### Objectives

- Students will observe the volume of garbage created in America each year
- Students will learn which items can be recycled
- Students will gain a sense of responsibility regarding the way that they dispose of their resources
- Students will understand the process that materials go through during the recycling process

### Vocabulary

- Aluminum
- Compost
- Decompose
- Incinerator
- Landfill
- Manufacturing
- Natural Resources
- Plastic
- Styrofoam
- Three R's: Reduce, Reuse, Recycle

### Materials

Examples of recyclable lunch containers, blue boxes, garbage, chart (or blackboard/smartboard) and stickers

### Warm Up: Taking a Look at the Trash Epidemic

#### *Information for Teacher:*

- The average American creates more than four pounds of trash each day. Multiply this by the number of students in the classroom, then by seven days a week and, lastly, by 52 weeks in a year to model the volume of trash the classroom creates in a year. That's more than any other country in the world- not a good contest to be winning (Japan is closely behind the U.S. in 2nd place).
- Every three months, Americans throw out enough aluminum to build a fleet of commercial airplanes. Sadly, aluminum can sit in landfills for 200 years before decomposing and it's one of the most easily recyclable materials in the world.
- Americans throw away 25,000,000,000 Styrofoam coffee cups each year. Styrofoam never breaks down in a landfill.



- Every month, we throw out enough glass bottles and jars to fill up a giant skyscraper. Glass takes thousands of years to break down and all of those jars could have been recycled.
- Nearly 250,000 plastic bottles are dumped every hour. This explains why plastics comprise approximately 50% of recyclable waste in the dumps.
- A plastic bottle can sit for 8,000 years before it decomposes in a landfill.
- A typical family consumes 182 gallons of soda, 29 gallons of juice, 104 gallons of milk, and 26 gallons of bottled water a year.
- The average household throws away 13,000 separate pieces of paper each year. Most is packaging and junk mail that could be recycled
- How recycling helps:
  - The trash in landfills not only takes up space but it poisons the air we breathe and wastes precious natural resources to create new products. Recycling is one of the best solutions to all of these problems. By simply understanding what can be recycled and placing garbage in the proper bin (recycling or trash), we can keep most items out of landfills and in the product chain for years to come. Recycled materials are sometimes used to make the same item and sometimes they are used to make an entirely different item. For instance, plastic from water bottles can be processed into tiny threads that are used to make clothes or rugs.
- Recycling Facts:
  - Recycling a single run of the Sunday New York Times would save 75,000 trees.
    - Recycling one aluminum can saves enough energy to run a TV for three hours. In spite of this, Americans throw out 1,500 aluminum cans per second!
    - When you recycle an aluminum can, it can be back on the grocery store shelf as a new product in as little as 60 days
    - The power saved by recycling one glass bottle can power a computer for 30 minutes
    - Recycling plastic saves twice as much energy as burning it in an incinerator
    - Half of the polyester carpet manufactured in the US is made from recycled soda bottles

#### *Classroom Warm Up:*

Show examples of recyclable/non-recyclable items. Which one doesn't belong? Do one example. Today, we're going to do a survey to find out how we recycle.

#### *Discussion Questions:*

- *Who can tell me what a survey is?*



- Why recycling is important? (landfill, environmental destruction, conserving resources)
- Where can you recycle? Intro blue boxes.
- When you come to school with a lunch/snack wrapper, is the wrapper recyclable or reusable?

## Lesson

Have students watch these videos:

“How recycling works”: <https://vimeo.com/51933771>

“Materials Recovery Facility”: <https://vimeo.com/51939288>

“Recycling Cans”: <https://vimeo.com/51939823>

## Assignment

Teacher introduces the activity:

*We are going to find out how our class recycles, all the students and teachers. First, everyone will answer 3 questions about recycling.*

Examples of survey questions:

### Survey questions for younger grades (Grades: 4/5):

- Does your lunch food or snack wrapping make garbage?
- Does your family use blue boxes to recycle at home?
- How many times do you see garbage on the playground?

### Survey questions for older grades (Grades: 5/6/7):

- Have the class do a school wide survey asking what materials they think are recyclable. Examples: Water bottles, Cardboard boxes, Soda Cans, Aluminum food cans (including pet food), Coffee Cups, Cereal Boxes, Styrofoam, Packaging with liquid left in the container, Batteries, Plastic wrap, Tires

Students will fill out a survey sheet. The educator shows the survey sheet and reviews the questions. Then instruct student to collect the answers together into a chart, called a pictograph. A pictograph is a picture that uses symbols to show a lot of information together. The educator should display the pictograph that the class did earlier in the week and shows the class chart.

Instructions: Students will go to their desks, answer the 3 questions by circling “Always”, “Sometimes” or “Never;” or for second survey “Yes” “Not Sure” “No”. Students will then put their answers on the class survey by putting a sticker on the chart. If some students finish early, they can survey the teacher or others and add their answers to the class chart. For the older grades, students can go around the class and to other classes to collect their data.



Finally, Students reassemble and the educator draws their attention to the pictographs. Each sticker stands for one student or teacher. Review each question and ask students to explain the information displayed. Ask students to give examples of recyclable materials. Define the purpose of using pictographs. Students are asked what they think we should do to make less garbage and how to inform the rest of the school about the importance of recycling and how to recycle properly.

### **Wrap Up**

Make a list of any student suggestions to the concluding questions on chart paper. Plan to implement with students who are interested. Refer back to this lesson when graphing is introduced for math.

### **Resources**

<http://www.recommunity.com/education/>

[http://www.recommunity.com/wp-content/themes/recommunity/pdf/ReLessonPlan\\_6-12.pdf](http://www.recommunity.com/wp-content/themes/recommunity/pdf/ReLessonPlan_6-12.pdf)

