



Recycling Matters

Student Objective

I understand the energy and water savings that takes place when I recycle the correct materials. I know how to take steps to find the resources I need to know what is recyclable in my community.

Materials

- 1 One week's worth of recycling collected from each student's house
- 2 A scale
- 3 An empty recycling bin
- 4 WIFI and a computer to access local recycling information, the It's All You page and the EPA WARM model

Introduction: Recycling

Introduce students to the concept of recycling by explaining that items that go in the recycling can live on to become something new, unlike items that go in the garbage.

Explain that recyclable items are made come from resources in nature:

- Aluminum = aluminum ore that is mined
- Glass = Sand and minerals that are heated
- Plastic = Oil that is extracted from wells
- Paper = Trees that are processed

Recyclable materials are made from resources in nature, when you recycle, you save those resources from being extracted and the energy and water that goes into that process.

Introduction: Home collection

Ask all of the students to collect their recycling at home for one week to bring back to class in order to calculate how much energy and water they save by recycling.

Before sending students home with their mission, visit your local community's recycling webpage to make sure they are collecting the correct items.

Let's look up what we can recycle at home, to make sure we collect the correct items because recycling the wrong items can do more harm than good.

Activity: Weight Assessment

Refresh students of the discussion from last week about the resource and energy savings that occurs when the correct materials are recycled.

Weigh the recycling bin to get an assessment of the tare weight (this weight will need to be subtracted from the material weight).

Place each students recycling contribution in the container and weigh it. If the students brings in materials that are not recyclable, take those out and explain that they are not recyclable.

Use the scale to weigh each of the students recycling materials, subtracting the weight of the container.

Total weight - Tare weight = Material weight



Recycling Matters

Activity: Water Calculation

Add each student's material weight together to come up with the total weight for the class.

Visit the It's All You page (<https://recyclingpartnership.org/itsallyou/>) to determine how much water the class saves each month by using the water savings calculator.

You can also calculate the water savings using the following equation:

$$1.5 \text{ lbs. of recycling} = 3.8 \text{ gallons of water savings}$$

As a class we can save (insert) gallons of water by each recycling the materials we collected at home. Water is important because we have to drink it to stay alive and it is home to many aquatic animals.

Activity: Material Sort

Now that all of the material has been weighed, it can be sorted. Designate specific areas to collect the following recycling materials with other like materials:

- Aluminum cans
- Glass bottles
- Plastic bottles

Once all of the materials are sorted, count the number of items in each category:

Number of aluminum cans = _____

Number of glass bottles = _____

Number of plastic bottles = _____

Activity: Energy Calculation

Visit the EPA's energy savings calculator page (<https://www.epa.gov/sites/production/files/widgets/iwarm-skinny.html>) to find your equivalent energy savings for the number of aluminum cans, glass bottles and plastic bottles collected.

Aluminum can energy savings = _____/hrs. of AC
_____/hrs. of computer
_____/hrs. of light

Glass bottles energy savings = _____/hrs. of AC
_____/hrs. of computer
_____/hrs. of light

Plastic bottles energy savings = _____/hrs. of AC
_____/hrs. of computer
_____/hrs. of light

Discussion: Recycling Matters

Reiterate to the class, using the numbers found with the calculator, that recycling saves both water and energy, along with other natural resources.

When recyclable items are placed in the garbage, or garbage in the recycling, that energy and water is wasted and cannot be recovered.

You can see from this activity, when you recycle, energy and water are saved, rather than wasted. Energy and water help us sustain life on Earth and are essential to our future and the future of all living things on this planet.