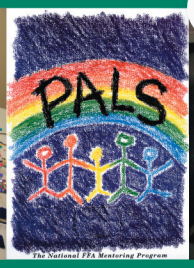
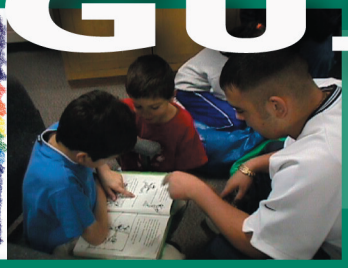
Grow Your PALS Program Guide





The National FFA Mentoring Program

Sponsored by Campbell's

Lesson 11

Recycling Adds Up!

Unit: Recycling

Precepts

A. Action
A8. Evaluate and reflect on action taken
E. Awareness
E2. Perform leadership tasks associated with citizenship

Lesson Type:
Large Group

National Standards

NT.K-12.2 Social, Ethical and Human Issues
NM-MEA.3-5.2 Apply Appropriate Techniques, Tools and Formulas to Determine Measurements
NM-ALG.3-5.3 Use Mathematical models to Represent and Understand Quantitative Relationships

Student Learning Objectives

As a result of this lesson, the student will …

1. Discover the importance of reducing, reusing and recycling.
2. Explain three benefits of recycling and how it will impact our future.

Time

Instruction time for this lesson: **60 minutes.**

Resources

http://www.hcdoes.org/sw/benefits_of_recycling.htm
http://www.cfsan.fda.gov/~dms/2lg-5.htm

Tools, Equipment and Supplies

- **PALS.11.TM.A**
- **PALS.11.AS.A –** 1 per class
- **PALS.11.AS.B –** 1 per class (Use brightly colored paper of different colors if available.)
- **6 empty food containers** (boxes, steel cans, bottles, jars etc.) with the products' net weight printed on the label
- **food scale that shows ounces** (These can be obtained from the Family and Consumer Science department or from a local grocery store.)
- **calculator**
- **sticky notes**

Key Terms

The following term is presented in this lesson and appears in ***bold italics:***

None

Interest Approach

To begin the class, write the headlines listed on PALS.11.AS.A on a piece of chart paper or colored butcher paper and post them around the room. Read each of the headlines to the class, and then have them walk to each piece of paper with a headline on it and write down at least one response per headline.

Some of you have already noticed the materials posted on the walls. What do you think they are for?

Allow students to share their responses.

Around the room, there are eight pieces of paper. At the top of each paper is a headline. The headlines are … *Read each headline aloud.*

When I say MOVE, you will have four minutes to write one response or idea that answers the headline on each of the eight pieces of paper using your pen or pencil. Once you have made it to all papers, please quietly return to your seat. There are no right or wrong answers, so put whatever comes to mind. Questions?

MOVE!

As students are making their way from paper to paper, be available to answer questions as needed. It will be extremely important that you are very encouraging and make sure that each student feels as if his or her ideas are good ideas.

Time's –up! If you are still roaming, please find your seat.

What excellent work! Let's see what we came up with!

Discuss each headline and the various responses as a class. If there are questions, be sure to ask for clarification from the students. Again, it will be very important to honor all responses and to keep reminding them that there are no wrong answers.

You all did an amazing job! I am impressed! During a previous lesson, we talked about the three R's. Who will tell us the three R's?

Allow a student to restate the three R's. If they get stuck, offer them some assistance.

That's right! The three R's are reuse, reduce and recycle. We know what each of these mean, and we've even talked about how we can practice them. Today, we will dig even deeper into the reason it's so important we practice the three R's. The information we cover today might even help change the world! Let's get started.

Summary of Content and Teaching Strategies

Objective 1. | Discover the importance of reducing, reusing and recycling.

Before you teach this lesson, locate at least six different food containers that have the products' net weight printed on them. Get a variety of containers (boxes, steel cans, bottles, jars, etc). Divide the students into six groups and give each group one of the containers. Using a scale, the students will weigh the container and write that weight down.

Next, the students will need to locate the net weight of the product. This information is typically located near the bottom of the product label. After they have located that information, the students will add the net weight of the product to the container weight. This will yield the total weight of the product and its container.

Finally, have students divide the empty container weight by the total weight. Multiply the result by 100 to determine what percent of the total weight is from packaging.

Have you ever opened a bag of potato chips and thought to yourself "where are all the chips?" Doesn't it seem like sometimes we get shortchanged on the amount of food we get in a container? Is it really necessary for us to have so much of the container if that is all the food we are getting? Let's do some investigating.

At your table, you will find a food container. Find the person at your table whose birthday is closest to today. *Give the students time to find that person.*
Would that person stand up? If you are standing, reach into the center of the table and grab that container. *Give the students time to get the container*.

Next, you will notice that on the front (usually the front bottom) that the "net weight" is listed. That represents how much the food in the container weighs. Locate the net weight of your food product.

Allow the students to locate the net weight and then have them share their net weight.
Let's hear the net weight of each food item.

As students are sharing their net weights, record the information on the writing surface for each container.

The number you just shared represents the net weight of the food inside the container. Let's find out how much the container weighs by itself.

Using a scale, assist the students as they weigh each container. You can do it individually or have one person from each group come to the front of the room and weight in front of the entire class.

Let's weigh our containers.

As each group weighs their containers, record that weight beside the net weight of the item.

Now, if we add the net weight of the contents of each container to the weight of the container, we get a total or **gross weight** for the product. Let's do that for each.

What percentage of that total or **gross weight** is from the container alone? Let's find out.

It would be important to check with the teacher to determine if the students have had any experiences with division or percentages prior to teaching the lesson. It would also be a good idea to review the concepts of percentages in order to teach it.

To find the percentage, use the following formula:

$$\text{Percentage of weight from packaging} = \frac{\text{Container Weight}}{\text{Total or Gross Product Weight}} \times 100$$

Example: The total/gross product weight is 24 oz and the container weight was 4 oz.

4 oz/ 24 oz= .167 X 100 = 16.7%

This means that almost 17 percent of the gross product weight is from the packaging alone.

As a class, compute the percentage of each item that is from packaging, and then record the answers on the board or writing surface. When all percentages have been calculated, lead the students in a discussion using the following questions:

Which packaging material offers the least percentage of packaging material by weight? The most?
What advantages do each of the packages offer?
Does some packaging seem excessive?
Are some products packaged in a variety of materials?

Take a look at your container and look for the recycling symbol. Is it there?
Consider this…would there be a way that we could not have so much packaging per unit of product? How could we do that?

Possible answers could be: not buy that product, reduce packaging, buy refillable containers, buy in bulk quantities, etc.

When we actually analyze how much excess packaging there is, it's easy to see why recycling, reusing or reducing is so important! If we do recycle, if we do reuse and if we do reduce, we can make a difference for our environment. How much of an impact you ask? Let's take a look!

OBJECTIVE 2. | Explain three benefits of recycling and how it will impact our future.

To gather the content for this objective, use the Go-Get-It e-Moment. The Go-Get-It e-Moment is a brain-based activity that allows students to seek information by kinesthetic or cognitive means. The teacher provides the information in various ways for students to seek.

The materials for the Go-Get-It e-Moment are on PALS.11.AS.B. The statements will need to be cut out individually and posted around the room prior to teaching the lesson. It might be helpful to put the statements on brightly colored paper to help the students locate the information.

It's proven that recycling does have many benefits. What are some of those benefits? Let's find out. When I say MOVE, stand up and find one of the nine benefits of recycling that are posted around the classroom. When you have found one, take it off the wall and return to your seat. If you do not find one, please return to your seat as well. Questions? This should take no longer than five seconds!

MOVE!

Once all of the strips have been located, have students share with the class what is written on each slip of paper. When all information has been shared, provide the following on a writing surface or show PALS.11.TM.A.

II. Recycling has many benefits.

A. Recycling saves energy and resources.
B. Recycling reduces pollution.
C. Recycling decreases tree-cutting.

Wow! Who would have thought that just by recycling we could have that type of impact? How does this information impact our future?

Allow students to think about and respond to the question. There is not a right or wrong answer, but challenge them to think about how the information could impact their future.

Nice work. It really sounds like you all have a great grasp of why we should recycle.

Review/Summary

Give students each a sticky note and have them write down the most important thing they learned from the lesson.

We've covered a lot of ground today. We have discovered how important recycling can be, and we also learned many benefits of recycling. On the sticky note, write down the most important piece of information you learned from today's class. Have students write it down. Who will share with us what you wrote down?
Ask for at least three or four students to share.
Nice work! You all have done an amazing job today!

Collect the sticky notes from the students when they are finished.

Application

Small Group Session: *If possible, take the students on a trip toa local thrift store, recycling center or church. If the students have old clothing, toys, shoes or other items in reusable condition, take a class trip down to the donation center so they can see how donated materials can be reused.*

One-on-One Session: *Have the student design packaging for a common food that would have an additional use following the original use of the product. The idea should have a description and a drawing of the packaging.*

Evaluation

Students will identify three ways to conserve and three ways to recycle resources. They will also include and name the specific resources being recycled or conserved.

PALS.11.AS.A

Reasons to keep the air clean.

Ways to keep the air clean.

Reasons to save trees.

Ways to save trees.

Reasons to recycle.

Ways to encourage recycling.

Reasons to clean up litter.

Ways to clean up litter.

PALS.11.AS.B

Every ton of paper made from recycled materials saves 17 trees, 6.953 gallons of water, 463 gallons of oil and 587 pounds of air pollution.

In one year, recycling allows aluminum companies to save the equivalent of more than 19 million barrels of oil–enough energy to supply electricity to about 18 million households for a year.

Recycling one glass bottle or jar saves enough electricity to light a 100-watt bulb for four hours.

Recycling one pound of steel can power a 60-watt light bulb for more than a day.

Recycling one ton of plastic saves the equivalent of 1,000–2,000 gallons of gasoline.

Making cars from recycling aluminum decreases related air pollution by 95 percent.

Making recycled paper generates 74 percent less air pollution and 35 percent less water pollution, and uses 64 percent less energy than making paper from timber.

If all morning newspapers in the US were recycled for one day, the equivalent of 41,000 trees would be saved and 6 million tons of waste would never end up in landfills.

Every person in the United States receives junk mail that represents the equivalent of 1 1/2 trees a year. If only 100,000 people stopped their junk mail, as many as 150,000 trees annually would not be cut down for paper productions.

PALS.11.TM.A

II. Recycling has many benefits.

A. Recycling saves energy and resources.
B. Recycling reduces pollution.
C. Recycling decreases tree-cutting.