School Recycling Club SHIP

(Supporting Home Instruction Program)

Lesson Plan 3

Grade Level:	K-3
Lesson:	I.A.3—How Does Packaging Contribute to Waste? Too Much Packaging?
Source:	*3Rs of the Common Core*
Activity/Craft:	Science Activities About Recycling by Erica Miller PDF Plastic Bottle Bowling PDF
Video Link:	Recycling for Kids-Kids Academy (https://www.youtube.com/watch?v=6jQ7y_qQYUA)
Game Link:	EPA Activity Book PDF (https://www.epa.gov/sites/production/files/2017-10/documents/epa_general_coloring_book_final.pdf)

Lesson Matrix Grade K-3

3R's of the Common Core

Lesson	Leading Question	Objective	Common Core Alignments		Skills
K-3 Garbage Bag Recipe I.A.I	What things do we throw away?	Define solid waste Identify components of waste stream Question personal rubbish habits	**Kindergarten** CC.RI.K.10 CC.SL.K.1 CC.W.K.2 CC.K.MD.3	**Grade 1** CC.RI.1.1 CC.SL.1.2 CC.W.1.2 CC.1.MD.4	Collaborating Communicating Conducting investigations Gathering information Using mathematics and computational skills
			Grade 2 CC.RI.2.1 CC.SL.2.3 CC.W.2.8 CC.2.MD.10	**Grade 3** CC.RI.3.1 CC.SL.3.1.c CC.W.3.4 CC.3.MD.3	
K-3 Litter Walk I.A.2	What's the difference between human-made and natural litter?	Identify human-made and natural objects Classify	**Kindergarten** CC.L.K.5a CC.SL.K.2 CC.W.K.2	**Grade 1** CC.L.1.5a CC.SL.1.2 CC.W.1.8	Collaborating Communicating solutions Investigating Problem solving
			Grade 2 CC.L.2.5a CC.SL.2.2 CC.W.2.8	**Grade 3** CC.L.3.5b CC.SL.3.3 CC.W.3.2a	
K-3 Too Much Packaging I.A.3	Will eating one piece of gum affect the size of our trash pile?	Examination of over-packaging	**Kindergarten** CC.RI.K.1 CC.SL.K.1 CC.K.CC.5	**Grade 1** CC.RI.1.1 CC.SL.1.2 CC.1.MD.4	Collaborating Collecting data Communicating Problem solving Applying mathematical concepts
			Grade 2 CC.RI.2.6 CC.SL.2.1 CC.2.MD.10	**Grade 3** CC.RI.3.1 CC.SL.3.3 CC.3.MD.3	
K-3 What's Hazardous? I.A.4	What does "toxic" mean?	Understand the meanings of: poison, toxic and hazardous waste Identify examples of poison,toxic and hazardous wastes and where they are found in the home	**Kindergarten** CC.RI.K.4 CC.SL.K.1 CC.W.K.2	**Grade 1** CC.RI.1.4 CC.SL.1.1 CC.W.1.2	Communicating Defining problems Gathering information Sharing research and writing
			Grade 2 CC.RI.2.4 CC.SL.2.1 CC.W.2.2	**Grade 3** CC.RI.3.4 CC.SL.3.3 CC.W.3.2	

Lesson	Leading Question	Objective	Common Core Alignments		Skills
K-3 **Machine** **I.B.1**	Where do the things we use come from ?	Develop awareness of the natural origin of products we use Understand limited availability of some natural resources	**Kindergarten** CC.L.K.1.d CC.RI.K.3 CC.SL.K.2	**Grade 1** CC.L.1.6 CC.RI.1.3 CC.SL.1.2	Analyzing Asking questions Communicating Problem solving
			Grade 2 CC.L.2.5a CC.RI.2.1 CC.SL.2.3	**Grade 3** CC.L.3.5b CC.RI.3.7 CC.SL.3.3	
K-3 **Grandparents' Toys** **I.C.1**	What kinds of toys are better for our environment?	Develop understanding of the amount of material consumed to make things Develop understanding of types of materials needed to make things Develop awareness of the impact of the things we make and the impact on solid waste	**Kindergarten** CC.SL.K.1 CC.SL.K.4 CC.W.K.8	**Grade 1** CC.SL.1.1 CC.SL.1.4 CC.W.1.8	Communicating Comparing multiple solutions Interviewing Sharing research and writing
			Grade 2 CC.SL.2.1 CC.SL.2.4 CC.W.2.8	**Grade 3** CC.SL.3.1 CC.SL.3.4 CC.W.3.4	
K-3 **Impressions with E.B. White** **I.C.2**	What does "garbage " mean to you?	Define garbage and evaluate their first understanding of it Develop reasoning skills by looking for more productive alternative uses for garbage	**Kindergarten** CC.RL.K.1 CC.SL.K.1 CC.W.K.3	**Grade 1** CC.RL.1.1 CC.SL.1.1 CC.W.1.3	Analyzing Applying ideas to solve problems Communicating Predicting
			Grade 2 CC.RL.2.1 CC.SL.2.1 CC.W.2.3	**Grade 3** CC.RL.3.1 CC.SL.3.3 CC.W.3.3	
K-3 **Taking Trash Away** **II.A.1**	Why do we take trash away? Where does it go? How does it get there ?	Understand the importance of trash removal Learn where trash is taken to and what happens to it	**Kindergarten** CC.RL.K.1 CC.SL.K.1 CC.W.K.8 CC.K.CC.5	**Grade 1** CC.RL.1.1 CC.SL.1.1 CC.W.1.8 CC.1.MD.3	Collaborating Collecting data Interviewing Sharing research and writing Applying mathematical concepts
			Grade 2 CC.RL.2.1 CC.SL.2.1 CC.W.2.8 CC.2.MD.10	**Grade 3** CC.RL.3.3 CC.SL.3.3 CC.W.3.4 CC.3.MD.3	

Lesson Matrix Grade K-3

3R's of the Common Core

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Lesson	Leading Question	Objective	Common Core Alignments		Skills
K-3 **Come Back to Me** **II.A.2**	When we throw things away, where do they go?	Understand the problem society is having with proper placement of solid waste Understand that we need to find new solutions to solid waste that won't harm the environment	**Kindergarten** CC.RI.K.1 CC.RL.K.5 CC.SL.K.2 CC.W.K.2	**Grade 1** CC.RI.1.1 CC.RL.1.10 CC.SL.1.2 CC.W.1.2	Collaborating Communicating solutions Defining problems Problem solving
			Grade 2 CC.RI.2.1 CC.RL.2.1 CC.SL.2.2 CC.W.2.8	**Grade 3** CC.RI.3.1 CC.RL.3.1 CC.SL.3.2 CC.W.3.4	
K-3 **Litter Garden** **II.A.3**	What happens to our trash after we throw it out?	Compare decomposition rates of different objects Develop an understanding of how littering impacts the environment	**Kindergarten** CC.RI.K.4 CC.SL.K.1 CC.W.K.8	**Grade 1** CC.RI.1.4 CC.SL.1.1 CC.W.1.8	Analyzing Developing models Investigating Sharing research and writing
			Grade 2 CC.RI.2.4 CC.SL.2.3 CC.W.2.8	**Grade 3** CC.RI.3.4 CC.SL.3.4 CC.W.3.7	
K-3 **Egg Cartons** **III.A.1**	Is some packaging better than others?	Recognize that some products entering the waste stream are more harmful to the environment than others Develop an understanding that one can make a difference by carefully choosing what they use	**Kindergarten** CC.RI.K.4 CC.SL.K.1 CC.W.K.2	**Grade 1** CC.RI.1.4 CC.SL.1.1 CC.W.1.8	Collaborating Communicating solutions Inventing Researching
			Grade 2 CC.RI.2.4 CC.SL.2.3 CC.W.2.8	**Grade 3** CC.RI.3.1 CC.SL.3.3 CC.W.3.7	
K-3 **Yesterday's Paper** **III.A.2**	What can we make with this box?	Recognize other uses for items we normally throw away Create a new purpose for something being thrown away	**Kindergarten** CC.RL.K.5 CC.SL.K.4 CC.W.K.2	**Grade 1** CC.RL.1.1 CC.SL.1.5 CC.W.1.2	Applying ideas to solve problems Collaborating Designing Sharing research and writing
			Grade 2 CC.RL.2.4 CC.SL.2.2 CC.W.2.1	**Grade 3** CC.RL.3.5 CC.SL.3.3 CC.W.3.2	

How Does Packaging Contribute to Waste?

Concept
Packaging is a major component of the waste stream.

Objective
Students will examine over-packaging.

Method
Students will unwrap and count gum wrappers and make posters.

Materials
Enough packages of gum or candy for each student to have one piece, construction paper, glue, examples of consumer products with lots of packaging (e.g. vegetables wrapped in cellophane on a Styrofoam tray; individual packages of crackers or chips; snack-sized applesauce cups, etc.), examples of items sold in bulk (e.g. family-size container of crackers; economy-sized jar of applesauce, etc.)

Subjects
Mathematics, Art, Social Studies, Language Arts

Skills
Applying mathematical concepts, collaborating, collecting data, communicating, problem solving

Time
One class period

Vocabulary
Packaging, composite, layers, natural resources, trash

Resources
Jan Berenstain, *The Berenstain Bears Go Green;* IKids, *Little Pirate: Why Do We Recycle;* Jen Green, *Why Should I Recycle?*; Anne Shanks, *All About Garbage;* Ellie Bethel, *Michael Recycle*

3R's of the Common Core
Parallel Activities
4-6, The Story of…
7-8, Potato Cakes
9-12, Packaging Preferences
Information
Components of the Waste Stream
Packaging
Resources
Green Consumption, Consumerism and Sustainable Development
Solid Waste and Recycling

Background

In 2012, packaging accounted for approximately 30% of the total solid waste generated in the United States. Packaging of some kind is necessary in many cases to protect food and keep it clean and free from contaminants, but composite and duplicate layers of packaging often add unnecessarily to the waste stream and are not recyclable. For instance, paper packaging coated with plastic or aluminum prevents it from ever being recycled. We are rarely aware of how much waste we produce, especially when we throw out one candy wrapper at a time, but lots of little pieces add up quickly to a surprisingly large amount. We can each help reduce the volume of solid waste plaguing our society by choosing products that produce less packaging and by choosing products with less composite packaging.

Leading Question

Do you think eating one piece of gum will have much effect on the size of our trash pile?

Procedure

1. Read and discuss the poem: *"How The Trash Pile Grows."* Do you think this is what we should do? Why? What does "Oh, no - where is 'away'" mean?

2. Divide students into groups with the same number of students as there are pieces of gum/candy per package. Pass out one package of different gum/candy to each group and ask them to carefully unwrap the gum/candy without tearing the wrappers.

3. Have each group create a poster by gluing all the wrappers and the packaging on a piece of construction paper. Glue wrappers in patterns, grouping them in fives or tens so they can be easily counted.

4. When the posters are finished, ask the students to guess how many wrappers there are and then to count them. As a class, figure out: if you chewed one pack of gum and/or candy a week, how many separate wrappers would you be adding to the waste stream each week? Each year? Make a picture and/or bar graph to show the data collected. Example: How many wrappers for one person, two people, etc. in a week, month, year. Use the graphs to answer questions such as "How many more wrappers are in the waste stream when you have additional people each week, month and year generating waste?"

Common Core Alignments

KINDERGARTEN

CC.RI.K.1
Reading Informational Text:
Key Ideas & Details

CC.SL.K.1
Speaking & Listening:
Comprehension & Collaboration

CC.K.CC.5
Mathematics:
Counting & Cardinality

GRADE 1

CC.RI.1.1
Reading Informational Text:
Key Ideas & Details

CC.SL.1.2
Speaking & Listening:
Comprehension & Collaboration

CC.1.MD.4
Mathematics:
Measurement & Data

GRADE 2

CC.RI.2.6
Reading Informational Text:
Craft & Structure

CC.SL.2.1
Speaking & Listening:
Comprehension & Collaboration

CC.2.MD.10
Mathematics:
Measurement & Data

GRADE 3

CC.RI.3.1
Reading Informational Text:
Key Ideas & Details

CC.SL.3.3
Speaking & Listening:
Comprehension & Collaboration

CC.3.MD.3
Mathematics:
Measurement & Data

5. Discuss the reasons why there are so many wrappers. Identify the possible purposes of each layer. Ask the students how they would package the gum. What are the reasons for their design choices?
6. Ask the students to identify the source of raw materials for packaging, such as the plastic, the aluminum foil, the paper. Discuss depletion of natural resources and possible ways to conserve these resources (e.g.: recycling, reusing, using less).
7. Ask the students to think of other items that their families buy that come in packages. What items have the most number of separate packaging pieces per package? (Consider individually wrapped sliced cheese, candy, crackers, single serving instant foods and beverages, etc.) If we reduce the amount of packaging, will we reduce the amount of trash? Brainstorm ways to reduce packaging. Once children have shared their ideas, show them examples of products with a lot of packaging versus the same object in bulk packaging. Encourage them to be aware of purchases and to help the adults they shop with to make good choices. How can you take applesauce to school if it is in a bulk jar? (Show a reusable container and a metal spoon.)

Evaluation

Students should be able to define recycling. Name two types of packaging which are difficult to recycle and two which are easy to recycle. How can you reduce the amount of packaging in your trash can?

Classroom Activities

A. Have students think of one thing they enjoy eating that uses a lot of packaging. And then, one thing that uses very little packaging. Can they choose to eat the kind that uses less? Does the same product come in different types of packaging so they can choose the least amount of packaging and still have their favorite food?
B. How long will the wrappers take to decompose? Bury a sample of each of the different wrappers in the ground. Check after one week, one month and six months. Also see: K-3, II.A.3, Litter Garden.
C. Try the attached Wrapping and Unwrapping Activity.
D. Compare and make displays of nature's packaging (orange rind, nutshell, banana, etc.) and people packaging (plastic wrap, aluminum foil, bubble wrap, etc.). Why is nature's packaging useful to the earth?
E. Visit a co-op and a grocery store and compare packaging.
F. Look for food products made from recycled materials. Write letters/emails to companies thanking them for using recycled materials or asking them to use recycled packaging.

How Does Packaging Contribute to Waste?

"How the Trash Pile Grows"

Buy it,
try it,
throw the trash away!

Take it, break it,
throw the trash away!

Get it,
use it,
finish it, lose it.
Wear it, tear it,
throw the trash away!

Soda pop, box top,
once you start you can't stop.
Buy it,
show it,
nothing left but throw it:
Throw the trash away!

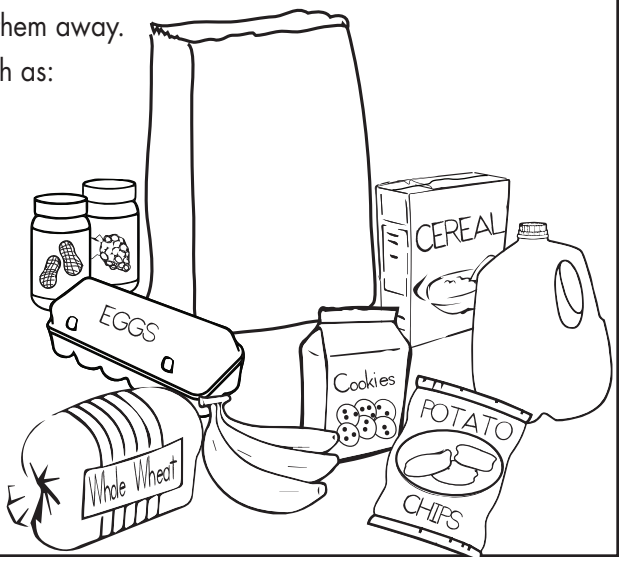
(Oh, no, where is "away"?)

Unwrapping and Unwrapping

(A 15 minute project)

Try this when someone in your family has come home from the store with lots of groceries.

1. Put an empty wastebasket near the table.
2. Now start unwrapping the groceries before you put them away.
3. Put every piece of wrapping in the waste basket, such as:
   - Cardboard boxes
   - Ice cream bags
   - Plastic bags
   - Paper bags
   - Cardboard cartons
4. Did you collect a wastebasket full of wrappings?
5. Do you think all those wrappings were really necessary?



Science Activities to Learn about Recycling - Erica Miller

- **Planting-** It's not just for spring and summer! Bring planting indoors all year long! Teach your class the importance of plants and the impact they have on our fresh air.
- **Worms-** Learn about worms! How do worms help us? Put worms in your sensory table and let the children explore how they move and work!
- **Become an Inventor-** What is the coolest thing you can make out of recycled items? Provide children with a box filled with materials that would have gone in the trash and let them create something new!
- **Sensory Bottles-** Create sensory bottles using recycled materials.

Plastic Bottle Bowling

From our Friends at PBS Kids for Parents

https://www.pbs.org/parents/crafts-and-experiments/go-bowling-with-plastic-bottles

Go Bowling With Plastic Bottles

This fun craft takes very little time and supplies kids love playing with this set. These recycled water bottles are painted from the inside so they are totally safe to play with — you won't have to worry about your kids licking or scratching the paint off. Enjoy playing inside or outside!

Club Note: No need to paint – your can use tape to decorate!