Blizzard Bag Lesson Plan 2

Grade Level:	4-6
Lesson:	I.A.2—What is Waste? The Solid Waste Stream Lunch Bags
Source:	*3Rs of the Common Core*
Activity/Craft:	Nature Scavenger Hunt PDF
Video Link:	The Dirt on Decomposers (https://www.youtube.com/watch?v=uB61rfeeAsM)
Game Link:	Recycle Roundup by National Geographic (https://kids.nationalgeographic.com/games/action-and-adventure/recycle-roundup-new/)

Lesson Matrix Grades 4-6

3R's of the Common Core

Lesson	Leading Question	Objective	Common Core Alignments		Skills
4-6 **Litter Search** **I.A.1**	What kind of trash is found around the school?	Develop awareness of variety, sources and amount of litter Classify litter elements	**Grade 4** CC.L.4.6 CC.SL.4.1 CC.4.MD.4	**Grade 5** CC.L.5.6 CC.SL.5.1 CC.5.MD.2	Communicating results Gathering information Graphing data Investigating
			Grade 6 CC.L.6.6 CC.SL.6.1 CC.6.SP.4		
4-6 **Lunch Bags** **I.A.2**	How much of your lunch do you eat and how much do you throw away?	Measure lunch waste Categorize content of lunch waste Identify ways to reduce solid waste	**Grade 4** CC.SL.4.1 CC.SL.4.4 CC.4.OA.3	**Grade 5** CC.SL.5.2 CC.SL.5.5 CC.5.NBT.7	Analyzing Applying mathematical concepts Collaborating Collecting data
			Grade 6 CC.SL.6.2 CC.SL.6.5 CC.6.NS.3		
4-6 **The Story of…** **I.A.3**	What kind of container is best for the environment?	Understand resources that make up packaging Determine ways to reuse or recycle packaging	**Grade 4** CC.SL.4.2 CC.SL.4.4 CC.W.4.8	**Grade 5** CC.SL.5.2 CC.SL.5.5 CC.W.5.8	Communicating information Designing Evaluating Gathering information
			Grade 6 CC.SL.6.2 CC.SL.6.5 CC.W.6.8		
4-6 **What Kind of Waste Am I?** **I.B.1**	Name one thing we throw away that didn't come from the earth.	Understand the characteristics of waste	**Grade 4** CC.L.4.3a CC.L.4.6 CC.SL.4.1c	**Grade 5** CC.L.5.3a CC.L.5.6 CC.SL.5.1c	Designing Developing models Identifying Questioning
			Grade 6 CC.L.6.3a CC.L.6.6 CC.SL.6.1c		

Lesson	Leading Question	Objective	Common Core Alignments		Skills
4-6 **The Lorax** **I.B.2**	What are some of the consequences of our throw-away habits?	Explore the impact of humans on natural systems Draw conclusions about the environmental impact of human behaviors	**Grade 4** CC.RI.4.3 CC.SL.4.2 CC.SL.4.6 CC.W.4.4 **Grade 6** CC.RI.6.3 CC.SL.6.3 CC.SL.6.4 CC.W.6.4	**Grade 5** CC.RI.5.3 CC.SL.5.3 CC.W.5.3 CC.W.5.4	Communicating solutions Interpreting Problem solving Researching
4-6 **Then and Now** **I.C.1**	How have our lifestyles changed in the past one hundred years? How have these changes affected our waste stream?	Describe ways in which changing domestic habits have intensified human impact on the environment	**Grade 4** CC.SL.4.1 CC.SL.4.3 CC.W.4.4 CC.W.4.7 **Grade 6** CC.SL.6.3 CC.W.6.4 CC.W.6.8	**Grade 5** CC.SL.5.2 CC.SL.5.3 CC.W.5.4 CC.W.5.8	Interviewing Inventing Investigating Synthesizing
4-6 **Hauling it Away** **II.A.1**	How much does waste disposal cost?	Understand that trash must be disposed of, that disposal options are limited, that managing trash can be problematic	**Grade 4** CC.SL.4.3 CC.SL.4.4 CC.W.4.2 CC.4.OA.3 **Grade 6** CC.SL.6.3 CC.SL.6.5 CC.W.6.2 CC.6.NS.3	**Grade 5** CC.SL.5.3 CC.SL.5.4 CC.W.5.2 CC.5.NBT.5	Applying mathematical concepts Communicating information Interviewing Questioning

Lesson Matrix Grade 4-6

3R's of the Common Core

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4-6 **Plastic Litter** **II.A.2**	Is plastic litter a problem?	Recognize the environmental hazards of plastic litter	**Grade 4** CC.L.4.6 CC.RI.4.2 CC.SL.4.2 CC.W.4.3	**Grade 5** CC.L.5.6 CC.RI.5.8 CC.SL.5.3 CC.W.5.3	Analyzing Carrying out investigations Explaining Observing
			Grade 6 CC.L.6.6 CC.RST.6-8.3 CC.RST.6-8.9 CC.W.6.3		
4-6 **Landfills** **II.B.1**	Do we take our trash to a sanitary landfill or an open dump?	Understand how sanitary landfills are made and are operated Understand the pollution problems associated with sanitary landfills	**Grade 4** CC.RI.4.7 CC.SL.4.1c CC.W.4.4	**Grade 5** CC.RI.5.7 CC.SL.5.1c CC.W.5.4	Designing Gathering information Observing Questioning
			Grade 6 CC.RI.6.7 CC.SL.6.1 CC.W.6.4		
4-6 **Investigating Incineration** **II.B.2**	Is burning a good way to get rid of trash?	Consider advantages and disadvantages of incineration	**Grade 4** CC. RI.4.5 CC.SL.4.1c CC.SL.4.3 CC.W.4.4	**Grade 5** CC.RI.5.5 CC.SL.5.1c CC.SL.5.3 CC.W.5.4	Analyzing Defining problems Evaluating Questioning
			Grade 6 CC.RI.6.6 CC.SL.6.1d CC.SL.6.3 CC.W.6.4		
4-6 **Solid Waste Bulletin Board** **II.C.1**	What can I do with this piece of solid waste?	Categorize solid waste items into reusable, recyclable, recoverable or able to be revised	**Grade 4** CC.L.4.6 CC.SL.4.4 CC.W.4.4	**Grade 5** CC.L.5.6 CC.SL.5.4 CC.W.5.4	Applying ideas to solve problems Designing Developing models Evaluating
			Grade 6 CC.L.6.6 CC.SL.6.4 CC.W.6.4		

Lesson	Leading Question	Objective	Common Core Alignments		Skills
4-6 **Pondering Packaging** **III.A.1**	What problems does packaging pose?	Examine examples of over or conglomerate packaging Assess the negative impact of overpackaging Brainstorm alternatives to overpackaging	**Grade 4** CC.L.4.6 CC.RI.4.8 CC.SL.4.1c CC.W.4.4	**Grade 5** CC.L.5.6 CC.RI.5.8 CC.SL.5.1c CC.W.5.4	Designing Developing models Interpreting Problem solving
			Grade 6 CC.L.6.6 CC.RI.6.8 CC.SL.6.1c CC.SL.6.6 CC.W.6.4		
4-6 **Wise Use of Paper** **III.A.2**	How much paper do you think you use? Do you need to use all of it?	Understand how much paper is wasted Know how to conserve paper	**Grade 4** CC.SL.4.1 CC.W.4.4 CC.4.MD.4	**Grade 5** CC.SL.5.1 CC.W.5.7 CC.5.MD.2	Collaborating Collecting data investigating Researching
			Grade 6 CC.SL.6.1 CC.W.6.7 CC.6.SP.2		
4-6 **New Things From Old** **III.A.3**	Why did our grandparents make patchwork quilts?	Understand that materials can be reused to make useful objects	**Grade 4** CC.SL.4.4 CC.RI.4.7 CC.RL.4.2	**Grade 5** CC.RI.5.7 CC.RL.5.2 CC.SL.5.5 CC.W.5.7	Collaborating Designing Interviewing Sharing research and writing
			Grade 6 CC.SL.6.6 CC.RI.6.7 CC.RL.6.2 CC.W.6.7		

Lesson Matrix Grade 4-6

3R's of the Common Core

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Lesson	Leading Question	Objective	Common Core Alignments		Skills
4-6 **Where From, Where To?** **III.B.1**	Where do things we use come from and where do they go to?	Trace lifecycle of objects from source, to consumer, and back again	**Grade 4** CC.SL.4.1c CC.SL.4.5 CC.W.4.4	**Grade 5** CC.SL.5.1c CC.SL.5.5 CC.W.5.4	Analyzing Applying ideas to solve problems Communicating information Researching
			Grade 6 CC.SL.6.1d CC.SL.6.5 CC.W.6.4		
4-6 **Papermaking** **III.B.2**	Why should we recycle paper?	Learn how paper is recycled Make recycled paper	**Grade 4** CC.L.4.6 CC.RI.4.3 CC.SL.4.2 CC.W.4.4 CC.4.MD.4	**Grade 5** CC.L.5.6 CC.RI.5.3 CC.SL.5.2 CC.5.MD.2 CC.5.NBT.7	Applying mathematical concepts Collecting data Designing Researching
			Grade 6 CC.RI.6.4 CC.RST.6-8.3 CC.SL.6.2 CC.6.RP.3c CC.6.SP.2		
4-6 **Where to Recycle** **III.B.3**	What is recyclable and where can we take our recyclables?	Gather information about where materials can be recycled	**Grade 4** CC.SL.4.1 CC.W.4.1b CC.W.4.6	**Grade 5** CC.SL.5.1 CC.W.5.1b CC.W.5.6	Collaborating Communicating information Gathering information Sharing research and writing
			Grade 6 CC.SL.6.1 CC.W.6.1b CC.W.6.6		
4-6 **Mini-Compost** **III.C.1**	What do you do with your food scraps?	Learn about recycling organic matter	**Grade 4** CC.RI.4.1 CC.W.4.4 CC.4.NBT.3	**Grade 5** CC.RI.5.2 CC.W.5.4 CC.5.OA.1	Graphing data Investigating Observing Predicting
			Grade 6 CC.RI.6.2 CC.W.6.4 CC.6.SP.2		

How Much Waste Do We Produce?

Concept
Each of us is responsible for the size and composition of the stream. Reusing can help reduce waste.

Objective
Students will measure how much lunch waste they produce as individuals and as a class, will categorize the content of their lunch waste and identify reusing as a way to reduce solid waste.

Method
Students will examine, classify and record the content of their lunches before and after eating.

Materials
Lunches and lunch remains, workshop sheets, scales, chart

Subjects
Mathematics, Health, Social Studies, Science

Skills
Analyzing, applying mathematical concepts, collaborating, collecting data

Time
Two class periods (before and after lunch)

Vocabulary
Organic, renewable, nonrenewable, waste generation

Resources
Betty Miles, *Save the Earth;* Lawrence Pringle, *Throwing Things Away;* Sabbithry Persad, *Where do Recyclable Materials Go?*

3R's of the Common Core
Parallel Activities
7-8, Throwing It All Away
7-8, School Trash Analysis
Information
Components of the Waste Stream
Resources
General

Background
Dr. Rathje was an archeologist with the University of Arizona who studied solid waste from the 1970s until the early 2000s. "His study reveals that Tucson's residents throw away 15% of their edible food at an annual cost of $11 to $13 million. Most of this is not in tiny bits but in large, usable amounts, such as whole steaks and half-used packages of soup. Comparing different neighborhoods, the study showed that middle-income people waste more food (and usable tools and appliances) than the poor or rich. Interviews with people in their homes, compared with actual evidence from garbage collected from their neighborhoods, revealed that people throw away much more edible food than they like to admit..."
– Lawrence Pringle, *Throwing Things Away*

Leading Question
How much of your lunch do you eat and how much do you throw away?

Procedure
1. Before lunch, have students examine their lunches and complete the attached worksheet. Each student should record the weight of the lunch on class chart. Compare the different packaging (e.g.: plastic bags, plastic or foil wrap, waxed paper, paper bags) and discuss how much came from non-renewable and how much from renewable resources. Ask students to bring everything they do not eat and all the wrapping back with them after lunch. Make sure they do not change their eating habits just for this experiment.
2. After lunch, have each student weigh the packaging and food remaining from lunch. Working singly or in groups of four or five, add this information to the class chart. Calculate the percentage of lunch actually consumed and the percentage of organic waste. If working in groups, have each summarize their findings and report to the class using a graph, interactive diagram, picture, etc.

Common Core Alignments

GRADE 4

CC.SL.4.1
Speaking & Listening:
Comprehension & Collaboration

CC.SL.4.4
Speaking & Listening:
Presentation of Knowledge & Ideas

CC.4.OA.3
Mathematics:
Operations & Algebraic Thinking

GRADE 5

CC.SL.5.2
Speaking & Listening:
Comprehension & Collaboration

CC.SL.5.5
Speaking & Listening:
Presentation of Knowledge & Ideas

CC.5.NBT.7
Mathematics:
Numbers & Operations Base Ten

GRADE 6

CC.SL.6.2
Speaking & Listening:
Comprehension & Collaboration

CC.SL.6.5
Speaking & Listening:
Presentation of Knowledge & Ideas

CC.6.NS.3
Mathematics:
The Number System

3. Find a class total and calculate the waste generated by the class in a week, a month, the school year. Multiply times the number of classes in the school to get an approximate number for the school lunch waste. There are about 55 million students in public and private schools across the United States. Using an individual average from the class total, have the students figure out how much school lunch waste is generated in the United States each year.
4. Discuss the types of waste produced. What are similarities between individuals in the groups? Which category had the most waste? Discuss ways to reduce the amount of waste produced. How might some of the waste be reused or recycled?

Evaluation

Each student should be able to correctly measure, categorize and chart his or her lunch waste and identify potentials for reduction in waste through recycling or reuse.

Classroom Activities

A. Discuss the pros and cons of using plastic vs. paper grocery bags. Paper bags are made from a recycled renewable resource and can be reused and recycled again. A paper bag is biodegradable. Plastic bags are made from a non-renewable resource, can be reused, but are not recyclable. Most plastics are not biodegradable and when burned, can emit toxic fumes. Which bags are better to use? Encourage students to act in response to their opinions by making conscious choices and requesting the bag they think least harmful to the environment at checkout counters.

B. Discuss alternatives to requesting either bag at the check-out counter. For example, for small purchases choose not to use a bag at all, bring back and reuse the bag you got from your last grocery trip, make a permanent grocery bag from durable fabric which can be refilled and reused every trip to the grocery store.

C. Begin a class or school composting program to recycle organic lunch wastes.

D. Discuss the use of reusable lunch boxes, sandwich containers, thermos bottles, etc., to help reduce the amount of solid waste produced by carrying lunch to school or work.

Name:_____ **Date:** _____

School Lunch Waste

ITEM	FOOD	NON-FOOD		
Sample:		*Made of*	Renewable	Non-Renewable

1. Which category had the most waste?

2. Which had the least?

3. Which types of waste were reusable?

4. Which types of waste were recyclable?

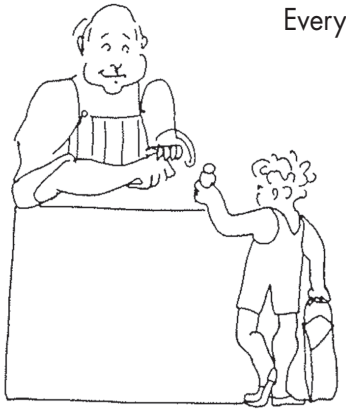
5. What can we change to reduce our lunch waste?

Name:_____ **Date:** _____

"No Bag, Please"

a one-hour project

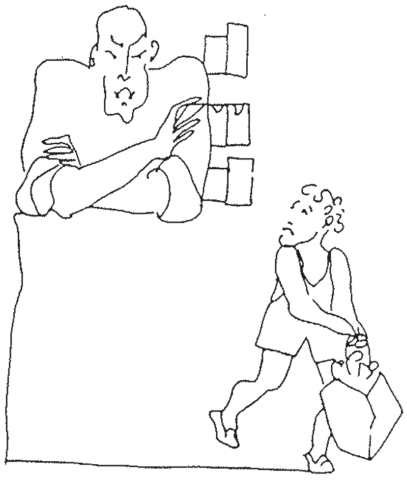
Everyone knows that when you save paper, you save some trees that would have to be cut down to make new paper.



Everyone knows this. But you can find out how hard it is for people to get used to saving paper.

Try this project when you are going shopping. Take a big shopping bag with you to put things in. When you pay for something watch carefully. Does the person at the counter start to put it in a bag for you?

If this happens, say "I don't need a bag, thanks." Then see how the store person acts. Surprised? Pleased? A little bit angry? Confused?



Then see how you feel. Ordinary? Embarrassed? Good?

It is sometimes easier to try new ways if you can get other people to try them with you. Maybe a friend or two from school would try the "no bag, please" experiment with you.

Nature Scavenger Hunt

trishsutton.com

- ☐ Pine cone
- ☐ Green leaf
- ☐ Brown leaf
- ☐ Wildflower
- ☐ Spider web
- ☐ Feather
- ☐ Bug
- ☐ Seed
- ☐ Grass
- ☐ Pine needles

- ☐ Bird
- ☐ Water
- ☐ Cloud
- ☐ Flying insect
- ☐ Round rock
- ☐ Colorful rock
- ☐ Rough object
- ☐ Smooth object
- ☐ Fallen branch
- ☐ Treasure (to you)

https://trishsutton.com/nature-scavenger-hunt-free-printable-for-kids/