Blizzard Bag
Lesson Plan 1

Grade Level:	7-8
Lesson:	I.A.1—What is Waste? The Solid Waste Stream How Much Solid Waste Do We Produce?
Source:	*3Rs of the Common Core*
Activity/Craft:	How to Make a Plarn Basket PDF
Video Link:	How Recycling Works (https://www.youtube.com/watch?v=VTRVPum9cp4)
Game Link:	*Nico's Quest to Recycle:* (https://www.saveonenergy.com/learning-center/kids-recycling-guide/)

Lesson Matrix Grades 7-8
3R's of the Common Core

Lesson	Leading Question	Objective	Common Core Alignments		Skills
7-8 **Throwing It All Away** **I.A.1**	What do you know about the solid waste we produce?	• Understand the sources, content and magnitude of the solid waste problem	**Grade 7** CCRI.7.1 CC.W.7.7 CC.SL.7.1 CC.7.RP.3	**Grade 8** CC.RI.8.1 CC.W.8.7 CC.SL.8.1	• Communicating • Comparing multiple solutions • Sharing research and writing • Applying mathematical concepts
7-8 **School Trash Analysis** **I.A.2**	What are all the things we throw away?	• Analyze waste producing habits in order to begin changing them	**Grade 7** CC.SL.7.4 CC.W.7.4 CC.7.SP.1	**Grade 8** CC.SL.8.4 CC.W.8.4 CC.8.SP.1	• Analyzing • Applying mathematical concepts • Investigating
7-8 **Potato Cakes** **I.A.3**	Could we save energy and other natural resources by choosing one product or packaging over another?	• Examine the complexities of food processing and packaging	**Grade 7** CC.RI.7.4 CC.SL.7.4 CC.W.7.4 CC.7.EE.3 CC.7.RP.1	**Grade 8** CC.RI.8.4 CC.SL.8.4 CC.W.8.4	• Applying ideas to solve problems • Collaborating • Researching • Using mathematical and computational thinking
7-8 **Resource Protection Game** **I.B.1**	How do our activities impact on our environment?	• Identify the ecological impacts of some of the solid waste management practices on natural resources	**Grade 7** CC.RI.7.4 CC.SL.7.1 CC.W.7.7	**Grade 8** CC.RI.8.4 CC.SL.8.1 CC.W.8.7	• Collaborating • Gathering information • Problem solving
7-8 **Trash Timeline** **I.C.1**	What can the waste we produce tell us about ourselves?	• Examine and classify various forms of evidence in the study of current trash and that of a past culture	**Grade 7** CC.RI.7.8 CC.SL.7.4 CC.W.7.6	**Grade 8** CC.RI.8.8 CC.SL.8.4 CC.W.8.6	• Analyzing • Collaborating • Sharing research and writing
7-8 **Art Reflecting the Environment** **I.C.2**	Why do people create art? What is the difference between "art" and "waste"?	• Understand the visual artist as a recorder of history and ideas • Identify society's impact on artistic expression • Identify potential ways artistic expression can impact society	**Grade 7** CC.RI.7.1 CC.SL.7.5 CC.W.7.6	**Grade 8** CC.RI.8.1 CC.SL.8.5 CC.W.8.6	• Analyzing • Applying ideas to solve problems • Questioning • Sharing research and writing
7-8 **Waste Walk** **II.A.1**	What is litter?	• Document and categorize litter in their neighborhood • Explore ways to get people to stop littering	**Grade 7** CC.RI.7.4 CC.W.7.2 CC.7.SP.1	**Grade 8** CC.RI.8.4 CC.W.8.2 CC.8.SP.1	• Applying mathematical concepts • Collecting data • Interviewing • Problem solving

Lesson	Leading Question	Objective	Common Core Alignments		Skills
7-8 Recovering Recyclables II.A.2	How can mixed trash be separated for recycling?	• Devise materials recovery systems for recovering recyclables from the waste stream	**Grade 7** CC.RI.7.1 CC.SL.7.4 CC.W.7.4	**Grade 8** CC.RI.8.1 CC.SL.8.4 CC.W.8.4	• Applying ideas to solve problems • Comparing multiple solutions • Developing models
7-8 Trash Haulers II.A.3	How much does waste disposal cost?	• Investigate the efficiency and costs of solid waste collection • Assess advantages/disadvantages of operating a recycling business and/or a curbside recycling program	**Grade 7** CC.SL.7.1 CC.W.7.4 CC.7.NS.3	**Grade 8** CC.SL.8.1 CC.W.8.4 CC.8.SP.1	• Gathering information • Interviewing • Sharing research and writing • Using mathematical and computational thinking
7-8 Mini-Landfills II.B.1	What are some of the possible hazards that might result from an improperly designed landfill?	• Learn how a sanitary landfill is made and operates • Understand some of the associated pollution problems	**Grade 7** CC.RST.6-8.3 CC.SL.7.4 CC.WHST.6-8.7 CC.7.G.6	**Grade 8** CC.RST.6-8.3 CC.SL.8.4 CC.WHST.6-8.7 CC.8.G.9	• Applying mathematical concepts • Developing models • Observing • Providing evidence
7-8 Landfill Soil II.B.2	Why is it important to test the soils of a potential landfill site?	• Determine the importance of soil studies prior to the siting of landfills	**Grade 7** CC.SL.7.1 CC.W.7.4 CC.W.7.7 CC.7.RP.3	**Grade 8** CC.SL.8.1 CC.W.8.4 CC.W.8.7 CC.8.F.5	• Carrying out investigations • Developing models • Observing • Sharing research and writing • Using mathematical and computational thinking
7-8 Burning Waste: Then and Now II.B.3	Why do we burn trash?	• Research the historical perspective of burning solid waste • Examine the reasons for these changes over the decades	**Grade 7** CC.RI.7.1 CC.SL.7.4 CC.W.7.4	**Grade 8** CC.RI.8.7 CC.SL.8.1 CC.W.8.6	• Sharing research and writing • Analyzing • Comparing multiple solutions • Collaborating
7-8 Packaging Design III.A.1	How could packaging be designed to waste less?	• Explore parameters of packaging design • Use guidelines in their own design project	**Grade 7** CC.RST.6-8.8 CC.SL.7.4 CC.WHST.6-8.7 CC.7.G.6	**Grade 8** CC.RST.6-8.8 CC.SL.8.5 CC.WHST.6-8.6 CC.8.G.9	• Applying ideas to solve problems • Designing • Researching • Using mathematics

Lesson Matrix Grade 7-8

3R's of the Common Core

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Lesson	Leading Question	Objective	Common Core Alignments		Skills
7-8 Source Separating III.B.1	What is the best way to sort and store our recyclables?	• Investigate current containers and make proposals • Design containers for the easy and efficient source separation of recyclables, as needed	**Grade 7** CC.RST.6-8.2 CC.SL.7.4 CC.WHST.6-8.4 CC.7.G.6	**Grade 8** CC.RST.6-8.2 CC.SL.8.4 CC.WHST.6-8.4 CC.8.G.9	• Applying mathematical concepts • Collaborating • Developing models • Problem solving
7-8 Graphing Recyclables III.B.2	Do recycling businesses pay us for the materials we collect?	• Examine how fluctuating markets and different offered prices affect the fate of recycling	**Grade 7** CC.SL.7.1 CC.WHST.6-8.4 CC.WHST.6-8.7 CC.7.SP.7	**Grade 8** CC.SL.8.1 CC.WHST.6-8.6 CC.WHST.6-8.7 CC.8.SP.4	• Communicating • Evaluating • Graphing data • Investigating
7-8 Destination Recycle III.B.3	When you recycle where does it all go? What does it become?	• Identify the destination and fate of their states recyclables	**Grade 7** CC.RST.6-8.2 CC.SL.7.1 CC.WHST.6-8.4	**Grade 8** CC.RST.6-8.2 CC.SL.8.4 CC.WHST.6-8.7	• Gathering information • Interviewing • Problem solving • Sharing research and writing
7-8 Making Good Compost III.C.1	What are the essential ingredients for a successful compost?	• Conduct experiments testing the effects of too little water, nutrients, air, and imbalance of material on producing successful compost • Learn the basic principles necessary to construct a good compost pile	**Grade 7** CC.RST.6-8.3 CC.SL.7.4 CC.WHST.6-8.4	**Grade 8** CC.RST.6-8.3 CC.SL.8.5 CC.WHST.6-8.6	• Collaborating • Collecting data • Communicating information • Synthesizing

How Much Solid Waste Do We Produce?

Concept
Our present consumer society produces a great amount of waste.

Objective
Students will begin to understand the sources, content and magnitude of the solid waste problem.

Method
Students (and their families) will answer a questionnaire and class will discuss results.

Materials
Attached worksheet

Subjects
Social Studies, Language Arts, Mathematics

Skills
Communicating,comparing multiple solutions,sharing research and writing, applying mathematical concepts

Time
One class period

Vocabulary
Solid waste, garbage, trash, obsolescence

Resources
Solid waste management plans, solid waste management rules, state agencies

3R's of the Common Core
Parallel Activities
4-6, Lunch Bags
Information
The Solid Waste Stream
Resources
General

Leading Question
What do you know about the solid waste we produce?

Procedure
1. As an introduction to the problems of solid waste, distribute questionnaire to students and allow time for completion. After students read them, they will write their answers and any thoughts/opinions they have about any of them.

OPTION: The students could complete the survey at home with their families, then bring it back for discussion the next day.

2. Discuss each of the questions in terms of possible solutions that people can offer as citizens, community members, members of government, business and industry. Pick one area (local business,industry, etc.) to research what has been or is being done in the area of solid waste management.

Evaluation
Do students have a better idea of how much waste is generated in our society? Do they have an idea of how much they and their families contribute to waste generation?

Classroom Activities
A. Conduct a week-long home waste study where students sort and weigh their own family's trash. Have students calculate percentages of types of trash, make future predictions, etc., by weighing the contents before sorting and then weigh each category found. Studying their calculations, find which items can be recycled. What is the total percent of their current waste that can be recycled?

B. Create a bulletin board or display using facts from the background and resource sections: make mini-garbage cans from construction paper or have kids make a piece of trash and write a fact on it. Students will compile facts based on the current year and their state information database.

Common Core Alignments

GRADE 7

CC.RI.7.1
Reading Informational Text:
Key Ideas & Details

CC.SL.7.1
Speaking & Listening:
Comprehension & Collaboration

CC.W.7.7
Writing:
Research to Build & Present Knowledge

CC.7.RP.3
Mathematics:
Ratios and Proportional Relationships

GRADE 8

CC.RI.8.1
Reading Informational Text:
Key Ideas & Details

CC.SL.8.1
Speaking & Listening:
Comprehension & Collaboration

CC.W.8.7
Writing
Research to Build & Present Knowledge

How Much Solid Waste Do We Produce?

1. In 2012, the average American generated about 4.39 pounds of trash every day! Multiplied by 365 this equals 1600 pounds each year per person. This means the average American family of four generates about 123 pounds of garbage every week. In 2012, Americans generated a total of 251 million tons of waste!

2. In the past 50 years, the amount of waste discarded per person in the United States has almost doubled. Increased packaging, increase in number of disposable items, development of industry and production technology, increase in personal wealth and purchasing power and the switch to planned obsolescence as a design strategy are all contributing factors to the increase in personal consumption and disposal.

3. In the United States 40% of all food is wasted or thrown away, in 2010 that equalled about 133 billion pounds, that's over 364 million pounds each day! According to archaeologist William Rathje of the University of Arizona, this waste consists in large part of spoiled foods never even used. In addition, what surpluses do farmers in the United States create that are never used and eventually require disposal? In stark contrast to the food waste produced in the United States are the numbers of people who are underfed and undernourished throughout the world. The United Nations estimates that 795 million people do not receive an adequate amount of the right kinds of food. The diet of these people is frequently lacking in:

   * Calories: fewer than 2200 calories per person each day is the norm throughout China, India and much of Africa. Self-reported data in the United States suggests that the average calorie consumption per person is 2,640 calories, however it was also found that many people in the United States under report their intake by up to 25%, meaning the true intake of calories per person each day in the United States could be as high as 3,300.

   * Protein: less than 60 grams per day in the above named places compared to more than 100 grams each day in the United States.

   * Needed micronutrients: malnutrition exists not because we don't produce enough food, but rather because of unequal distribution of what is grown. The most affluent third of the world's population eats well over half the food produced.

4. We send between 12 and 15 million cars to junkyards (and 290 million tires) each year.

5. In 2010, 28.5 million televisions were thrown out. Television sets last on average ten to fifteen years. The number of appliances and audio visual equipment thrown out within only a few years of purchase reflects a fast turnover in technology, the consumer desire for state-of-the-art equipment and new fashion, a planned obsolescence design strategy by producers and the fact that it is often less expensive to buy something new than to repair something old.

6. Packaging represents 30% of the solid waste stream and an increasing percentage of these materials are made of plastic, a substance noted for non-biodegradability and long life.

7. Americans used 66.62 million tons of paper in 2012. It takes 17 trees to produce one ton of paper. Newspaper is usually discarded within 24 hours of being purchased. In 2012, 64.6% of paper was recycled.

8. Americans recycled 87 million tons of waste in 2012, about 34.5% of the total waste produced.

How Much Solid Waste Do We Produce?

1. The average American family of four creates about ____ pounds of trash each week.

_____20 _____120 _____500 _____1000

2. In the past 50 years, the amount of waste discarded per person in the United States has

_____stayed the same _____doubled _____decreased _____increased 10 times

3. Each day, Americans throw away _____ million pounds of edible food.

_____30 _____300 _____364 _____643

4. We send _____ cars to the junkyard each year.

_____12,000 _____1,000,000 _____12,000,000 _____20,000,000

5. How many televisions are thrown out each year?

_____285,000 _____5.2 million _____1 million _____28.5 million

6. What percentage of what we throw away is packaging?

_____30% _____75% _____50% _____10%

7. How much paper do Americans use each year?

_____6 million tons _____6 million tons _____66 million pounds _____66 million tons

8. How many tons of solid waste did Americans produce in 2012?

_____25 _____25 million _____251 _____251 million

How to Make a Plarn (Plastic Yarn) Basket

We found this link through our friends at Pinterest

Going Green with Wrapped Baskets

March 8, 2012 By radmegan 20 Comments

I'm feeling like I need things in my personal life to be as tidy as possible so that I won't get slowed down or distracted.

Which brings me to today's project. Full disclosure: The photo below is what our laundry room shelf has looked like for almost two years. This week, I went to grab one bag and the entire shelf almost came down on me because there were SO MANY PLASTIC GROCERY BAGS stuffed into a teeny tiny space.

In a fit of rage and craftiness, I pulled the entire bundle down and decided to make SOMETHING USEFUL from the bags that had been cluttering up our hall for so long. In a wild moment of clarity, I flashed back to a small woven pot that I had made during my brief stint as a Girl Scout. I grabbed my cutting mat, a cutting blade, a ruler, some masking tape, a heavy yarn needle and crochet hook. I was going to weave a basket out of all these plastic bags.

Click HERE for all the steps and instructions!