

Waste and Consumption Audit- Food Waste Recycling Lesson Grade 2



Introduction: Sustainable Consumption and Waste

Second grade students were introduced with the topic of Recycling from a given book on Second Grade Epic! Reading Program to share with their students. (A list of Epic! Books are in a doc in this folder). Students brainstormed and completed a KWL chart which led student discussions on:

Why do we recycle?

What do we recycle?

What do we do with the leftover food we don't finish at various meals during the day?

Why is it important to have different bins to recycle items in?

What is a compost?

How do you make a compost bin?

Why is it a good idea to not waste leftover food?

From such discussion questions, students were taught the benefits of food waste and were given ideas that they can do at home.

[How we waste food video](#) (Second Grade Teacher Choice to Show their class)

How is food waste recycled?

There is no amount of food waste too small – every bit of recycled food waste reduces the release of destructive greenhouse gases. When your food waste is recycled instead of being sent to landfill, the gases are captured and converted into green energy and natural fertilisers that can be used for farming.

Can food scraps be recycled?

If you live in an area that has a local food waste recycling collection service, you can use this to dispose of anything you can't eat, or compost at home. It can be recycled into a good quality soil improver or fertiliser and even generate electricity that can be fed back into the national grid.

You can put the following food waste in your caddy:

- meat and fish - raw or cooked, including bones and skin.
- fruit and vegetables - raw or cooked.
- all non-liquid dairy products.
- eggs including shells.
- bread, cakes and pastries.
- rice, pasta and beans.
- uneaten food from your plates and dishes.
- tea bags and coffee grounds.

What NOT to Compost And Why

- Meat, fish, egg or poultry scraps (odor problems and pests)
- Dairy products (odor problems and pests)
- Fats, grease, lard or oils (odor problems and pests)
- Coal or charcoal ash (contains substances harmful to plants)
- Diseased or insect-ridden plants (diseases or insects might spread)

Top 5 ways to cut down on food waste

- Don't over buy. Keep track of what you've bought and used. ...
- Check the use-by dates of fresh food when you buy it. These are the dates to take notice of, rather than the best-before dates. ...
- Plan ahead. ...
- Get to know your grocer
- Love your freezer.

Why is food waste so bad?

Food waste that ends up in landfills produces a large amount of methane – a more powerful greenhouse gas than even CO₂. ... With agriculture accounting for 70 percent of the water used throughout the world, food waste also represents a great waste of freshwater and groundwater resources.

Tips on how to reduce food waste in the home, at school.

1. Avoid buying too much. ...
2. Think twice before throwing food away. ...
3. Always make a shopping list. ...
4. Organizing the kitchen with FIFO. ...
5. Store food correctly. ...
6. Make a weekly menu. ...
7. Keep a log of spoiled foods. ...
8. Freeze extras.

Recycling Food Waste

1. Contribute your food waste to a neighbor's compost pile. ...
2. Offer your waste to a local farmer. ...
3. Recycle your waste at the town solid waste facility. ...
4. Bring your scraps to work/school
5. Feed chickens, pigs, or goats. ...
6. Start worm composting, which can be done indoors, even in an apartment.



This lesson plan will introduce students to the principles of waste management. It will show students how they can consume and not waste food and explore why recycling is so important at home and school. They will also understand what goes in a food compost bin.

Description of Project: The George L Catrambone Second Grade students completed an audit on the importance of recycling, food and waste consumption at home and at school. Students watched various books on the effects of recycling from books in their second grade Epic! on-line reading program. Students were encouraged to read other books on their individual time on Epic! to further their knowledge. They brainstormed together in their second grade classrooms and the students decided to actually see

what recycling practices they do together at home and at school. Some classrooms completed padlets or a KWL chart ahead of time. From there teachers led discussion on what the students and their families do with leftover foods which led to an audit that students conducted at home to see what that actual answer was. Teachers shared the audit on their google classrooms so the students could fill out the Waste/Consumption Audit with their families. What better way to do that, then for students to record after each meal what they do with their leftover food (if any). Students worked together in the classroom, and at home to collect the needed information based on one day's meal and answer the recycling questions. The next day, the results were discussed in individual second grade classes. . Not only were many of our students, teachers and families involved in this audit ,but many second grade teachers went home and looked at what they practiced. We had many students working from home and school to complete the audit. These students were so happy to learn the facts and to go home and explain to their families what they can do with leftover food from their meals and how this was a sustainable project.



Goal: To create a project that would showcase practices and help reduce unnecessary waste. We want this goal to become an everyday part of living. For students to recognize that poor waste contributes to climate change and air pollution and affects many landfills. Wasting food rots in a landfill and is a potent greenhouse gas contributing to carbon dioxide. Food waste is expensive, leaves people unnecessarily hungry, and clogs up our landfills with organic matter that doesn't properly dispose.

In our landfills, food waste generates methane gas, a greenhouse gas that is much more potent than carbon dioxide. Thus, reducing food waste not only minimizes wasted resources that go into producing food but also helps limit global warming. Reducing food waste is a giant win all around for people and our planet.

Learning Activity: Before they began the project, students watched a selected recycling book on Epic! From there students brainstormed how they recycle at home and at school. Second grade students were also asked what they thought happened to the food they threw away in the garbage and why this is considered food waste. Students were taught many options they can start to practice at home with food consumption. (see beginning of the description of the lesson for suggested ideas). Students were given a KWL chart to complete about what they knew of recycling and/or what happens to food waste (teacher choice). Some teachers made a padlet to help brainstorm (attached in folder). Students were then asked to complete an at home audit of waste and food consumption at home and complete questions on how their family recycles. From there, students, teachers and families are more conscious now of how to be more mindful of food and waste. Some families even started their own kitchen compost. A handout was also made for teachers to post on their communication platform for families to share with them ideas on how and what they can do with their food leftovers and how not to waste. (See attached handout in the folder) [Parent Letter](#)



WM THINK GREEN!  

Food Waste Recycling Only

Fruits, Vegetables, Poultry, Meat, Seafood, Dairy, Bakery & Dry Goods,
Liquids & Beverages, Teabags & Coffee Grounds



WM CORE and RVSA have developed a food-waste-to-energy project that produces renewable energy right here in Union County.
Plastic liners are acceptable (except black bags) or dispose of food waste directly into toter.

NO

- Glass
- Wood
- Chemicals, paints, & other hazardous material
- Aluminum foil & trays
- Clothing & linens
- Corks
- Polystyrene foam
- Yard waste
- Dirt, rocks, stones



Small amounts of solid paper goods, fats, oils, greases, and liquids are acceptable. These items can concentrate and pollute if found in large quantities.

To learn more, visit www.westfieldnj.gov/green.

Materials: You will need:

- Waste and consumption audit
- Containers for leftover foods
- Packaging to wrap any left over food
- Recycling bin(s)
- Kitchen food compost (if available)

Closure/Assessment: Students were evaluated on the learners understanding and participation of waste and consumption and sustainable causes based on various learning levels and scoring out of 24 points. Please see attached scored rubrics.

Standards:

2.Structure and Properties of Matter

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Students who demonstrate understanding can:

- 1. **Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.** [Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.]
- 2. **Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.*** [Clarification Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency.] [Assessment Boundary: Assessment of quantitative measurements is limited to length.]
- 3. **Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.** [Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.]
- 4. **Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.** [Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]

The performance expectations above were developed using the following elements from the NRC document A Framework for K-12 Science Education:

<p>Science and Engineering Practices</p> <p>Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.</p> <p>③ Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. (2-PS1-1)</p> <p>Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <p>③ Analyze data from tests of an object or tool to determine if it works as intended. (2-PS1-2)</p> <p>Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.</p> <p>③ Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (2-PS1-3)</p> <p>Engaging in Argument from Evidence Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s).</p> <p>③ Construct an argument with evidence to support a claim. (2-PS1-4)</p> <p>-----</p> <p>Connections to Nature of Science</p> <p>-----</p> <p>Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena</p> <p>③ Scientists search for cause and effect relationships to explain natural events. (2-PS1-4)</p>	<p>Disciplinary Core Ideas</p> <p>PS1.A: Structure and Properties of Matter</p> <p>③ Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (2-PS1-1)</p> <p>③ Different properties are suited to different purposes. (2-PS1-2),(2-PS1-3)</p> <p>③ A great variety of objects can be built up from a small set of pieces. (2-PS1-3)</p> <p>PS1.B: Chemical Reactions</p> <p>③ Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. (2-PS1-4)</p>	<p>Crosscutting Concepts</p> <p>Patterns</p> <p>③ Patterns in the natural and human designed world can be observed. (2-PS1-1)</p> <p>Cause and Effect</p> <p>③ Events have causes that generate observable patterns. (2-PS1-4)</p> <p>③ Simple tests can be designed to gather evidence to support or refute student ideas about causes. (2-PS1-2)</p> <p>Energy and Matter</p> <p>③ Objects may break into smaller pieces and be put together into larger pieces, or change shapes. (2-PS1-3)</p> <p>-----</p> <p>Connections to Engineering, Technology, and Applications of Science</p> <p>-----</p> <p>Influence of Engineering, Technology, and Science on Society and the Natural World</p> <p>③ Every human-made product is designed by applying some knowledge of the natural world and is built by using natural materials. (2-PS1-2)</p>
Connections to other DCIs in second grade: N/A		
Articulation of DCIs across grade-levels: 4.ESS2.A (2-PS1-3); 5.PS1.A (2-PS1-1),(2-PS1-2),(2-PS1-3); 5.PS1.B (2-PS1-4); 5.LS2.A (2-PS1-3)		
<p>Common Core State Standards Connections:</p> <p>ELA/Literacy –</p> <p>RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (2-PS1-4) RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. (2-PS1-4) RI.2.8 Describe how reasons support specific points the author makes in a text. (2-PS1-2),(2-PS1-4)</p> <p>W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-PS1-1),(2-PS1-2),(2-PS1-3)</p> <p>Mathematics –</p> <p>MP.2 Reason abstractly and quantitatively. (2-PS1-2)</p> <p>MP.4 Model with mathematics. (2-PS1-1),(2-PS1-2)</p> <p>MP.5 Use appropriate tools strategically. (2-PS1-2)</p> <p>Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. (2-PS1-1),(2-PS1-2)</p>		