

Garbage to Gardens

Grade Cluster - K-2

NETS-S - 4 - Critical Thinking, Problem Solving, and Decision Making

Quick Look:

Students develop a plan to dispose of the cafeteria and classroom waste.

Scenario:

The bell rings for students to clean up their lunch trays and get ready for recess. This is the first year the school has separated the food waste from all other trash. Charlie loves to hold his chocolate milk container from a distance and watch the remains of his milk splash into the barrel. "Yuck!" shouts his buddy standing next to him. "That's disgusting!"

The two boys carry on with a conversation about where this massive bin of slop goes when lunchtime is over. The students have recently learned that there is a local pig farmer down the road who feeds the waste to his pigs. The class is planning a trip to visit the pigs later in the year.

The next day Charlie's first grade class cleans up after snack time. Charlie realizes that there is only one trashcan for all waste, and the food is not separated from the other waste like in the cafeteria. He shares this problem with his teacher who decides that this may be a perfect introduction to the upcoming science unit on recycling.

After hearing Charlie's concerns, Mrs. F. gathers the children for a class meeting. Students all agree that if the cafeteria food is composted, so should the classroom food scraps. Students are curious to find out what other classrooms do with their scraps after snack time. Mrs. F. encourages her class to talk with fellow students out at recess that day to hear what they have to say. Using video cameras, groups of students travel about the playground posing questions regarding the disposal of other classrooms' snack time scraps.

After recess, students report out what they learned from the other first graders by sharing the projected video clips. As expected, none of the other classrooms compost either. In response to this new information, the class develops a brief questionnaire for teachers using a word processor, such as [Microsoft Word](#), [Google Docs](#) or [Zoho](#), in order to find out how food waste is disposed of in each classroom. The questionnaire asks, "Do you separate food waste from garbage in your classroom? If you separate the food waste, what do you do with the scraps?" A database is created using [InspireData](#), and its link is sent out to the teachers in the school. Their responses are collected and used to form a graph. The students analyze and discuss the data.

The results show that only two of the fourteen classrooms in the school compost (4a,c). The other twelve classrooms toss their food into the garbage with the rest of the trash.

Students then invite a representative from the local composting center to come into the classroom to share how the center actually works. They learn that they can bring their food scraps to the center and purchase compost, too. A field trip is scheduled to visit the center later that month. Next, students collect plastic containers for each classroom. They decorate and distribute the containers to classrooms. Students also share with other classrooms and teachers the importance of composting and how everyone can help in school. The scraps from the containers are collected biweekly and added to a larger bin outside the school.

Students decide that they can promote the idea of composting to help with the environment. They are excited to share what they have learned from the employees at the composting center. They create and display posters using [KidPix](#), or another paint program (6b), throughout the school highlighting the idea that compost adds nutrients, organic matter and helpful micro-organisms to lawns, gardens, and potted plants (4b). They decide to raise money for the school by designing and painting clay pots, to be accompanied by seed selections, to sell later to families and community members. Order forms are created using [Google spreadsheet](#) and shared with parents. These forms specify the types of seeds parents can purchase. The seed choices are voted on by the students using a [clicker-response system](#) (6a). The students tally the orders daily to determine how many pots to paint, how many seeds to purchase, and how much compost to order.

On the day of the trip to the composting center, the class drops off the collected food scraps, takes a tour of the site, and purchases a variety of seeds and compost for their project, as well as a number of vegetable seeds to plant for the classroom. They return to school and immediately plant the seeds in their beautiful pots using the compost. Most of the seeds are designated for orders placed by the parents, while a variety of vegetable seeds have been planted separately for the class. They are excited to notice the daily changes in the quickly sprouting plants. Students document changes in the plants as they grow using digital photographs (6a). The students will later upload the images into Shutterfly and create a published photo book to share with parents and other classrooms. When the plants are ready to harvest, students prepare a class salad using the organic vegetables set aside for the class. Parents pick up their orders and celebrate with students in a class salad party made from the delicious classroom-grown organic vegetables.

Student Standards – The following NETS-S are noted in the Scenario:

4. Critical Thinking, Problem Solving & Decision Making – A, B, C
6. Technology Operations and Concepts – A, B

Teacher Standards – Teachers who teach this unit address the following NETS-T:

1. Facilitate and Inspire Student Learning and Creativity - A, B, C, D
2. Design and Develop Digital-Age Learning Experiences and Assessments – A, B, C
3. Model Digital-Age Work and Learning – A, B, C, D
4. Promote and Model Digital Citizenship and Responsibility – B, C
5. Engage in Professional Growth and Leadership – B, C

Content Grade Expectations

The scenario writer has identified the following content grade expectations that s/he felt might be assessed in this scenario. In most of these scenarios, there may well be opportunities to assess other or additional content grade expectations across a variety of disciplines. If you are interested in developing a unit or lessons based on the following scenario, and you don't see any grade expectations in your content area, we encourage you to capture the ideas presented in the scenario and make it your own by adding components that address the grade expectations you are most interested in assessing.

H&SS1-2:1 Students initiate an inquiry by...

- Asking questions based on what they have seen, what they have read, what they have listened to, and/or what they have researched as a class.

H&SS1-2:3 Students design research by...

- Identifying resources for finding answers to their questions.
- Explaining what their jobs will be during an inquiry investigation.
- Planning how to organize information so it can be shared.

H&SS1-2:5 Students develop reasonable explanations that support the research statement by...

- Organizing and displaying information (e.g., table, chart, graph.)
- Classifying information and justifying groupings based on observations, prior knowledge, or experience.