

Where Does All That Paper Go?

Grade Cluster - 3-5

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

Quick Look:

Students look at the issue of paper consumption in their classroom and in their school. After collecting and analyzing the data they realize that the issue of paper usage is a school wide problem and they start a paper-recycling program in the school.

Scenario:

"We need more paper for the printer and there isn't any more paper." said one of the students. "We filled the printer paper tray three days ago and put the extra paper beneath the printer." replied the teacher.

"Well, there isn't any paper. What are we going to do" answered the student.

"Good question! One I would like the answer to myself", replied the teacher.

At morning meeting the topic of paper usage is discussed. Working in small groups, students brainstorm a list of ways paper is used, recording their ideas in their netbooks. Using the electronic white board, groups report out and quickly realize that it is a bigger problem than just the amount of printer paper they are using. The students concluded that they used many types of paper in school (drawing, math, writing, printer, constructions, etc.). Using a [Google spreadsheet](#) the students conducted an inventory of all the paper they had in their room and how much of it they had left in their storage closet. After analyzing the results the conclusion was made that they would not have enough paper to last the year. (4a, 4c)

Next, students sorted and weighed the paper (construction, printer, drawing, white lined, & math) in the recycling bins. They entered the type and weight of each pile into a [Google spreadsheet](#). Using the [Internet](#) they researched the cost of the different kinds of paper they used and added this information to the [spreadsheet](#). They used the data to create charts for a report on the cost of the paper they had used this year.

From the data collected the students hypothesized that not all the paper needed to be recycled and most could be reused. The students defined the criteria to use when deciding which paper was reusable or recyclable. Again, the paper was weighed and entered in the [spreadsheet](#) as either usable or not usable. Over the next two weeks students sorted and recorded the paper in their recycling bins. Using the [spreadsheet](#), students analyzed the data and realized that they were wasting a lot of paper that could be reused and that they needed to develop a plan for recycling paper.

The students create a [wiki](#) where all their information is located and accessible for the parents and community to view. (4b)

Students work in small groups to research solutions to their paper problem. One group uses the *Internet* to find information about the local recycling center and arrange for a class fieldtrip. Students document the fieldtrip using [digital and video cameras](#) and create a digital presentation for the class wiki on what they had learned about recycling paper. (4c, 6a)

After reviewing effective *Internet* search techniques, students use the *Internet* to research facts about paper, why it should be recycled, and how it can be reused to make other products.

They use [Google presentation](#) to create an informational report on paper recycling and create a list of websites that highlight different ways paper can be reused in the classroom. This is shared on the class *wiki*. (4d)

Students design an [online survey](#) to create a paper waste audit for the school that focuses on classroom paper usage. Students [email](#) the faculty to let them know about the paper audit. The data is analyzed and the conclusion is made that there is a great deal of paper wasted in school. This group meets with the school business manager to find out how much money is spent on paper each year. They analyzed the data over the last five years and conclude that purchasing paper is a large money item in the school budget and that the school's consumption of paper increases each year. The students conclude that this is not just a classroom issue, but also a school wide issue that needs to be addressed. (4a) Students meet with the principal and head custodian to discuss their plan to implement a school-wide paper-recycling program.

Students use the *Internet* to find information about school recycling programs. They begin the project by creating a *shared spreadsheet* that is used to track the amount of paper that is recycled by each classroom. Using a publishing program, they create a booklet of suggested ways a class can reuse their paper. In order to save paper, they publish their booklet using "[issuu](#)" and link it to their [wiki](#). They contact the local recycling company and request two blue, recycling bins (one for reusable and one for recyclable paper) for each classroom in the school. Students use a Google shared calendar to develop a schedule of paper pick up times from the other classrooms and share the calendar with all the teachers in school. They create another *shared calendar* that lists the students who will be responsible for collecting the paper each week. Students record the amount of paper collected from each classroom in a [shared spreadsheet](#). (4b, 4d)

Students use the paper from their recycling bins to make new products (ex. note paper, math scratch paper and re-cut construction paper), which are displayed in the front lobby for people to see how the paper can be reused. . Students use the video camera to produce short, public service announcements on paper recycling topics. These are located on the class wiki. (6a, 6b)

Students meet with the principal to review their plan and arrange a date for a school wide assembly. Through a *digital presentation* the class shares the results of their work and their plan for implementing a school wide paper-recycling program. (6b)

Students create charts to hang on the school walls where they can record the amount of paper that is recycled each week. The information is shared with the parents, school board and community via *email*, the school and local newspaper, and links to the class *wiki*. (4b,)

At the end of the school year the students meet again with the business manager and principal to share the data they collected. This information is shared with the school and community. Plans are made to start the project the following September with everyone in school educated and trained on the why's and how's of cutting down the paper usage in school. The goal is to have paper recycling become part of the school culture. (4c, 4d)

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

4. Critical Thinking, Problem Solving, and Decision Making- A, B, C, D
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
2. Design and Develop Digital-Age Learning Experiences and Assessments- A
3. Model Digital-Age Work and Learning- A, C
4. Promote and Model Digital Citizenship and Responsibility- C
5. Engage in Professional Growth and Leadership- A

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.

Standard 7.9: Data, Statistics, and Probability Concepts

M4: 23 Interprets a given representation (line plots, tables, bar graphs, pictographs, or circle graphs) to answer questions related to the data, to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.

Visual Arts, Grades 3, 4, 5

A3-4:11 Students demonstrate **PERFORM/COMMUNICATE** skills in visual arts by...

- Participating in group art activities.
- Experimenting with media and materials to convey feelings or ideas

Theater Skill Development

A3-4:8 Students **PERFORM/ COMMUNICATE** through theater by...

- Presenting a classroom or public announcement.

H&SS 3-4:14 Civics, Government and Society =Students act as citizens by...

- Demonstrating positive interaction with group members
- Identifying problems, planning and implementing solutions in the classroom, school or community.