An Edible Schoolyard

Grade Cluster - 3-5

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

Quick Look:

The students transform a piece of unused school property into a garden. Students work with local community members throughout the process. They find a garden-partner classroom in Global Gardens, where they document the growing process together on their *wiki,* comparing and contrasting how different climates grow different plants.

Scenario:

In the early spring, the students have started a unit on native plants, when two students notice a small, unused plot of ground off to the side of their play area. Native weeds and yard clutter have taken the plot over. The students noted that, while it seems to be a great spot for weeds, perhaps there could be better use for this piece of land. Back in the classroom, they bring up this question with their teacher. Together, using their class *wiki,* they brainstorm different uses for this piece of land. (4a, 6b) Ideas float around the room. Should they turn it into a sandbox for the younger students, attract wildlife with feeders, or clean it up to make more room for their playground? After a long discussion, students vote using a *student-response system* and decide the best use of this land would be to create a class garden. (4b

After *emailing* the principal, students get the okay to transform the land into a garden. Each student uses a *Mobi*, a collaboration tablet that communicates with an *interactive whiteboard,* to generate a list, saved in a *wiki*, of the plants and vegetables they would like to grow in the garden. (4b, 6a) The children then *email* the local university's horticultural research center and set up a *Skype* call with a master gardener. (6a, 6b) Recording their call, the students ask questions about the kinds of local vegetables and plants that would be good for their garden. They also ask what other things they should consider when planning their garden, like soil type, physical space, sunlight needs and water sources. The information is recorded in the *wiki*. (4b, 6b) When the *Skype* call ends, the students realize that they must revisit their *wiki* to look at which of the plants and vegetables would be most productive, based on what they had just learned. The question then arises, “How come some plants cannot grow in our garden?” Excited the students are interested in local plants, the teacher then decides to join **Journey North's Global Garden** and set up a *wiki*, partnering with a classroom in Arizona, who is also planting a garden. The two classrooms can communicate with each other as their gardens grow, track weather and temperature, and watch what happens to their gardens in the different climates.

Since they have now learned that there are many different factors that will affect the productivity of their garden plot, the class invites the local master gardener to come to school and work with them on determining soil type and condition. Students learn how to use a *soil electromagnetic (EM) sensor* to determine soil quality, (4c, 6a, 6d) and they use a *digital tape measure* to find the area of the plot. They record their findings in their *netbooks*, in the class *wiki*. (4c, 6a, 6d)

Back in the classroom, using the data collected on their plot of land, students use the *student response-system* to collectively decide which vegetables and plants they would like to plant. Students then use *Google Sketch* up create a virtual garden of the plants they plan on growing (6b) and set up another *Skype* call with the master gardener to share their *Sketch-Up*, asking for input. They learn which plants should be started in the classroom and which ones they can plant directly into the ground from seed. All this information is saved in the *wiki*. (4b) The master gardener gives the students local seeds to start the process and the students set up a green house in their classroom to germinate the seeds.

While the seeds are sprouting in the classroom, the students realize they need to prepare the soil. They use the data in their *wiki* to determine what they need in order to create the optimum growing environment. They soon learn that they will need composted manure, which is very expensive. Students *email* a local organic farmer, and they are delighted to learn that he is willing to donate composted manure for this project. Based on their calculations of the area of the land, students determine how much composted manure should be delivered and send that information to the farmer. (4c)

The delivery is soon made and the soil is prepared for planting. Soon the seeds germinate and the class plants the garden. On the *wiki*, students create a *spreadsheet* to track the growing process. Additionally, two students collect daily information on weather, temperature, and growth of the plants. (4c) Students are able to view the same information as it is gathered from their partner school in Arizona. Using Google Calendar students organize a schedule for watering the garden. Students take digital pictures of the plants as they grow and create a short *Photo Story* to document the process. (4c, 6b)

As the plants start to grow tall and strong in each classroom's garden, the students look at the differences in their collected data. They see how environment affects the type of plants that can be grown, and how the weather also plays an important role in the growing process. They share their findings with the school by inviting them to participate in a Harvest Soup Party. They make a short "How to Create a Garden From An Empty Plot" video, using all their collected data and pictures. (4c, 6b) Their partner classroom *Skypes* in on their celebration, giving the school a "taste" of what they also grew in their Arizona garden.

Each day on the playground, the students smile at the garden they grew from a little piece of forgotten land. They now have learned how a little effort and care can result in wonderful things. The garden is replanted the following year.

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, C, D

Teacher Standards- Teachers who teach this unit addresses 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, D
3. Model Digital-Age Work and Learning-A, B, C
4. Promote and Model Digital Citizenship and Responsibility- B, C, D
5. Engage in Professional Growth and Leadership- A, 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&SS3-4:7 Inquiry - Student communicate their findings by...

- Giving an oral, written, or visual presentation that summarizes their findings

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.

S3-4:35 Life Science - Students demonstrate their understanding of Food Webs in an Ecosystem by…

- Researching and designing a habitat and explaining how it meets the needs of the organisms that live there.

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.