Speak-Up to Space

Grade Cluster - 3-5

NETS-S- 5 - Digital Citizenship

Quick Look:

Students learn that, as citizens of their world, they have an opportunity to collaborate with a class in Japan to participate in a NASA classroom experience, and to communicate with astronauts in space from their classroom. They share their experience with their fellow schoolmates and local community.

Scenario:

"Ms. Ammon, did you know that a Japanese and American astronaut will be meeting up on the space station in a couple of weeks? My *ePal* Natsumi just told me this when we were *Skyping* last night at home." (5b) Proud that her students have really taken off on their communication with their Japanese ePals, the teacher decides to involve her students in *ARISS, the Amateur Radio on the International Space Station* program. The class *Skypes* to their *ePal* class in Japan to see if they would also like to be involved with the project. This collaboration will give the project a slight twist that will set them apart from all the other applicants; namely, they would create a united Japanese American classroom to communicate from Earth to space. (5d, 6a, 6b)

Excited by the project, students set-up a *VoiceThread* so they can converse with their *ePals* in Japan and brainstorm discussion topics for their live transmission with the astronauts. (6a, 6b) After generating a couple of ideas, the two classes decide they would like to learn more about growing sprouts in space. The two classes discuss the kinds of sprouts that are grown in their respective locations, and wonder if being in space would make this growing process different. They submit their idea on the *NASA wiki.* (5b, 6b) They soon hear back that the idea is accepted and that the NASA scientists want to know which sprouts the students want grown for this experiment, given the variety of seeds already available on the space station. The two classes look back at the data they have collected in their collective *Google spreadsheet* and decide on sprouts that are fast growing and have high nutritional value. They *email* their suggestions to the NASA scientists.

Feeling proud about their impending conversation with actual NASA astronauts, the students in Ms. Ammon's class decide that it would be wonderful if other classes could also be involved. A "Space Talk" *blog* is set up, and through *email* the students set up mini-lessons on blogging with other classrooms, so that those students can have a place to ask potential questions. (5a, 5d, 6b) The questions are gathered and using a *student response system* the class votes on their favorite questions.

The class then decides they should also let the public know about their upcoming space conversation and decide to contact the local media. Using Internet resources, students locate the names and email addresses of the local media. Using the *interactive white*

board, the class collectively writes an official email to the school and local newspapers, radio stations, and the town's official homepage. Students are reminded never to give out private information in cyberspace without the permission of their parents or teachers. (5a) They use the teacher's name and email address to represent the class, so the students do not have to submit their own personally identifiable information.

The local radio station is now very interested in their project, and so radio station representatives come to the class to teach them about shortwave radio mechanics, broadcasting policies, content regulation, and acceptable use practices. These guidelines are recorded and added to the class space blog. (5a) The radio station personnel then helps students set up a 2-meter satellite ground station in their classroom. Students are also allowed to borrow a *shortwave receiver* so they might hear Amateur Radio transmissions. (6d)

When the day arrives for transmission, the classes has set up both a live *podcast*, in order to broadcast their conversation to the public, as well as a *Skype* call with their Japanese ePals, so the two classes will be able to communicate. (5b, 5d, 6a, 6b) The astronauts make contact with both classes. The classes see their sprouts growing in space and the astronauts answer the many questions that had been generated prior to the transmission. The students then create a *podcast* of their "space conversation". It is shared on the *NASA wiki* and added to their space *blog*. (5b, 6a, 6b) Now when the students look to the sky, it does not feel so far away.

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

5. Digital Citizenship- 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
3. Model Digital-Age Work and Learning- A, B, C
4. Promote and Model Digital Citizenship and Responsibility- A, B, C
5. Engage in Professional Growth and Leadership- A, D

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&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.

H&SS3-4:11 Students interpret geography and solve geographic problems by...

- Locating countries and major cities in North America.
- Locating major global physical divisions, such as continents, oceans, cardinal directions, poles, equator, tropics, Arctic and Antarctic Circles, tropical, mid-latitude and polar regions.
- Identifying and using basic elements of the map (e.g., cardinal directions and key).

H&SS3-4:3 Students design research by

- Identifying resources for finding answers to their questions
- Planning how to organize information so it can be shared.

S3-4:1 Science Inquiry - Students demonstrate their understanding of SCIENTIFIC QUESTIONING by…

- Identifying at least one variable that affects a system and using that variable to generate an experimental question that includes a cause and effect relationship