Unit 1 Overview: Mission Briefing and Application Process

Lesson 1: Mission Briefing
Lesson 2: Application Day 1
Lesson 3: Application Day 2

Materials

Readings

Mission Briefing:
- "The Mission"
- "We Need You"
- "Space Station Alpha"

Special Thanks
- "Verizon"

How to Apply:
- "Apply Today"
- "Personal Essay"
- "Class Activity: Space Station Systems" (PDF)
- "Mission Patch"

Unit One Overview

- This program has a storyline students must understand.
- Students apply to be a part of the program.
- Students are introduced to some key skills: cooperation, creativity, organization, working under pressure, and problem solving.

Storyline

- e-Mission: Space Station Alpha is a simulation. Simulations help people prepare for emergencies. Simulations allow us to make mistakes and then learn from them in a safe environment.
- Understanding the scenario, or storyline, of this simulation is an important to the success of this program. The sun is the "bad guy," the astronauts and the space station are the good guys. The sun can affect the health of the astronauts directly through radiation or indirectly by affecting the space station's electrical systems or atmospheric conditions.
- Students "apply" to be a part of the program. Once accepted (they are all accepted) they are appointed as provisional Mission Specialists. The next Unit begins their training.
- Mission Specialist training involves teamwork.
- Completing assignments on time is a key to success during Mission Specialist training.
- Trying to uncover the main idea(s) during each homework and class segment of Mission Specialist's training is important.

Materials Preparation

1. Print all reading materials (articles, experiments, and Mission Specialist Log pages) for Lessons 1, 2, and 3. Some readings are provided in what is calld a PDF format, which will require you to have Adobe Acrobat Reader software installed in order to open the file and print it. See http://www.adobe.com/products/acrobat/.
2. Begin to collect all materials for Sheer Magnetism (Lesson 4) and Electricity (Lesson 10) experiments. This may require a trip to an electrical supply and hardware store.

Vocabulary

- simulation (term introduced by Teacher)
- scenario (term introduced by Teacher)
- astronauts
- system
- Mission Control
- mission specialist
- telecommunications

National Aeronautics and Space Administration (NASA)

International Space Station (ISS)
- Space Station Alpha
- Zarya
- Zvezda
- Unity
- Z-1 Truss
- Solar arrays
- Photovoltaic arrays (PV arrays)
- Destiny

Solar (Sun) Phenomena
- coronal mass ejection
- radiation
- solar storm
- solar weather
- proton
- ionizing radiation

Earth Phenomena
- aurora borealis

Unit Overview: Mission Briefing and Application Process 2

Teaching Approaches

Because this is the first day of this "science unit," the students are unfamiliar with the new subject matter. The first lesson can follow a read-then-discuss format. The second and third lessons should be conducted with the students assigned to small work groups or teams.

Connections to Other Units

This unit establishes the tone of the entire e-Mission experience. Students "apply" to be a part of the program. Once accepted they are appointed as provisional Mission Specialists. (All students are accepted.) The next Unit begins their training. As the on-site representative of Mission Control, please emphasize the importance of hard work and the need for training in preparation for the mission.

Internet Resources:

Recommended search engines:
http://vivisimo.com
http://www.google.com
http://www.kartoo.com

Valuable Search Terms and Phrases:
"International Space Station," "solar weather," "space weather," "coronal mass ejection," "magnetosphere," "ionosphere." (Quotes have been used here to delineate search terms. Do not use quotes when typing in a search term or phrase.)

Looking Ahead:

e-Mission Space Station Alpha has been designed to stimulate a spirit of adventure and challenge. The introductory segment may elicit enthusiasm, curiosity, and leadership skills from students who have not demonstrated such behaviors in the past.

Throughout Mission Specialist training, a variety of activities are suggested that will help the teacher motivate the students. In several instances we suggest that small groups be used during class to report on the main ideas of assigned readings.

Small groups may also be used to conduct and demonstrate hands-on experiments. The rotation of leadership responsibilities within groups can be a strong inducement towards participation. Re-grouping students, in search of good team chemistry, may also lead naturally to assignments on e-Mission day.