

Lesson 1: Mission Briefing

Preparatory Readings

LP #	Unit 1: Mission Bfg/ App Process	LP #	Unit 2: Space Weather	LP #	Unit 3: Radiation Health	LP #	Unit 4: Power Systems	LP #	Unit 5: Life Support	LP #	Unit 6: Pre-Mission Prep
	Mission Briefing	4	Specialist Orientation		Chapter 2		Chapter 3		Chapter 4	13	Overview of Teams
1	The Mission		Chapter 1	7	New Frontiers & New Dangers	9	The Energy Supply Problem	12	How I Discovered Air	13	Mission Directives
1	We Need You	4	Here Comes the Sun	8	Electromag Rad: Taming the Wild Energies	9	Rechargeable Batteries	12	A Weighty Discovery	13	Classroom Setup
1	Space Station Alpha	4	Inside the Atom	7	Do You Want the Recipe?	10	All About Power	12	Living in a Bubble	Team Preparation Introductions	
opt	Verizon	5	Sheer Magnetism (Hands On)	7	In the Kitchen with Poly	10	Emergency Procedures	12	Breathing on the Space Station		
	How to Apply	5	Dr. Z: Inside the Sun	7	Measuring Exposure to Radiation	10	Practice Ex: Power on the SS (Hands On)			13	STORM Team Overview
2	Apply Today				Enrichment Activities		Enrichment Activities			13	Radiation Team Overview
2,3	Personal Essay			7	Ready, Aim, Mutatel (Hands On)	10	Electrical Current Mag Field (Hands On)			13	Power Team Overview
2,3	Class Activity: Station Systems			7	Sweet Dreams are Made of These (Hands On)	10	Electrical Circuit: Quick Guide (Hands On)			13	Life Support Team Overview
opt	Mission Patch			7	Are You Too Hot? (Hands On)	10	Nailing Down Energy (Hands On)			13	Communications Team Overview
						10	A Shocking Discovery (Hands On)				
						10	Electrolysis (Hands On)				
						10	It's Electric (Hands On)				

Other Homework Due: (none)

Subject

Discuss e-Mission storyline. Introduce concept of "simulations". Motivate students to apply.

Description of Student Activities

This class is one of the most important in terms of student motivation. As the movie director, you set the scene, create the story, and help your "actors" prepare for their roles. In this class the students read and discuss three short articles.

After the students read each of the articles, you should lead them in a discussion of the main ideas and the requirements for Mission Specialist training.

Duration

20 min. Students read articles
20 min. Guided discussion

Main Topics

1. e-Mission: Space Station Alpha is a simulation. Simulations help people prepare for emergencies. Simulations give us a chance to make mistakes in a safe environment and then to learn from them.
2. This simulation has a storyline. In brief, the storyline is as follows. There was a solar storm which created problems on the space station on Jan 17, 2001. The problems involved radiation, loss of power generation, and life support malfunctions. One month later, you and your students will "fly" a mission. Another storm is expected at that time, on Feb. 14. Your students must apply to be part of the mission. They will play the role of Mission Specialists. To prepare, they must go through a training process, just like all NASA personnel.
3. The Sun is both an important source of vital electrical power and a potential threat to Space Station Alpha and the astronauts.
4. Solar weather is extremely unpredictable. Extreme solar weather has been known to disrupt electrical, telecommunications and navigation systems on earth. These same systems on board the space station are vulnerable and critical to the well being of the astronauts.
5. The space station is a complex structure consisting of interrelated technological systems designed to sustain human life and scientific research in a hostile environment.

Materials

Mission Briefing:
Here Comes the Sun
We Need You
Space Station Alpha
Verizon (optional)

Outcomes

1. Students will answer questions related to the mission storyline: *who, what, where, when, why and how*.
2. Students will decide to apply.

Special Comments

Focus is key. The students will read several articles with a lot of facts and scientific concepts. The main idea that they should get from their reading is that they are going to be part of a simulation that has a specific storyline. A discussion of the storyline will create the context for all of the facts and concepts to which they will be introduced.

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Procedure

1. Have the students read *Here Comes the Sun*, *We Need You*, *Space Station Alpha*, and *Verizon*. When they are finished, ask the following question and discuss simulations students may be familiar with:

"Who knows what a simulation is?" (Simulations help people prepare for emergencies. Simulations give us a chance to make mistakes in a safe environment and then to learn from them.)

2. Write on the board: Who, What, Where, When, Why, and How in a column. Leave room to write student responses. Discuss each story element with the students:

"Can you tell me who is involved in this mission?" (Astronauts- will be on board the space station during the mission. Mission Control and the Challenger Learning Center will be communicating directly to the astronauts any recommendations from the students. The Class will provide valuable expertise as Mission Specialists to Mission Control during the mission)

"What will we be doing?" (During the mission, students will serve as Mission Specialists, helping Mission Control. Prior to the mission, students will be in training, learning important science and math skills. Teamwork, creativity, and problem solving are important.)

"Where will the mission take place?" (You may have to answer part of this question for the students by letting them know where they will be on mission day. Mission Control is at the Challenger Learning Center. The astronauts will be orbiting 250 miles above the earth on board the station. The space shuttle will launch and join with the station)

"When will we be doing this?" (Students must apply and be accepted. Then they begin their training. After training they fly the mission.)

"How will we prepare? How will we fly the mission?" (Preparation consists of completing the activities in the Specialist Training Manual (website). After completing the training activities, students will be placed into one of four teams to complete the Pre-Mission Preparation materials. On mission day, students will download data for their teams using the computer and will communicate with Mission Control over the Internet.)

Note: You may, or may not, wish to ask your students if they would like to apply for this program. This would depend upon the level of enthusiasm and participation in a given class.

Homework for Lesson 2

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