

CONSTELLATION PRESENTATION Teaching Guidelines

Summary: Students create and deliver presentations in which they explain an aspect of NASA's Constellation Program. As they do so they will become more familiar with the goals of the program and with the range of engineering careers related to space science.

Subject: The Nature of Science and Technology

Topics: Engineering and Space Science

Grades: 7-12

Concepts

- Specific science concepts vary according to the topic students select for their presentations. In all cases, though, students will arrive at a better understanding of the nature of engineering as a discipline and type of career.

Knowledge and Skills:

- Can create and deliver an effective slide show presentation about a scientific or engineering topic

Procedure

Present the Futures Channel movie, *The Ares Projects: Telling the Story*. Tell students that they are going to be working in teams on a project in which they take on the roles of NASA engineers who must explain an aspect of their work to a public audience.

Distribute the Performance Task description and review it with students to be sure it is understood. As a class, generate a rubric for assessing the quality of presentations.

Arrange students into teams, and give them the schedule and due date for their work on the Performance Task.

Constellation Presentation

Performance Task

Summary: Your team will create a slide show that can be used in presentation to a public audience about the launch vehicles of the Constellation program, and then make that presentation and measure its results.

Scenario: Imagine that you and the other members of your team are working on a project related to the design and manufacture of the Ares launch vehicles, and you have been asked to make a presentation about your work to a public audience. Your goal in this presentation is to ensure that your audience understands some of the problems that your team has to solve in order to be successful.

Your presentation is to be 5-6 minutes in length, and must include a slide show with images that help your audience to understand your explanation.

Topics: Your presentation should explain one of the following topics:

- Why are there two different Ares Launch vehicles in the Constellation program?
- Why are the Ares launch vehicles built in stages that can come apart as the vehicle ascends?
- Why is it necessary to have such a large rocket to lift the crew vehicle into space?
- How does NASA ensure that all of the separate pieces of the vehicles, which are bring designed and built by different organizations all around the country, fit together and work together correctly?
- How can we be sure that the Areas launch vehicles will actually work?
- You may choose another topic if you wish, with your teacher's approval, but you will have to show your teacher where you will find the information and images needed for your presentation.

Steps:

1. Choose a topic question. If you need more information to make your choice, the topics are all addressed by the Futures Channel Movies about the Ares rockets, which you will find on this page:

http://www.thefutureschannel.com/movies/space_science_movies.php

2. Do research on your topic so that you fully understand the answer to the main topic question, above. Again, you can learn a lot about these topics and the answers to these questions from the Futures Channel Movies referred to above. You can also find out more about the Constellation program and Ares rockets on this NASA web page:

http://www.nasa.gov/mission_pages/constellation/main/index.html

3. Write out your answer to the topic question in essay form, as a way to be sure that you understand it well enough to explain it to someone else.
4. Select some images that support your explanation.

You can choose from those that are provided on this Futures Channel page for the movie, *The Ares Projects: Telling the Story*:

http://www.thefutureschannel.com/dockets/space/ares_telling_story/

There are also images available on the NASA site:

http://www.nasa.gov/mission_pages/constellation/multimedia/index.html

5. Create your slide show. Remember that each slide should have only about 10-20 words.
6. Practice making your presentation until you are confident that you can explain your topic question well.
7. Deliver your presentation to an audience. When you are finished, ask them to answer these questions to measure your results:
 - a. What did you learn from this presentation?
 - b. What questions do you still have about this topic?