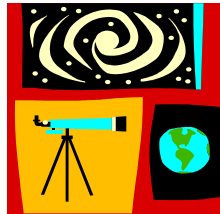




Demo Space Freeze III: Cryogenics

Post-Visit Activities

Grades 6-12



Developed 12/06

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These activities are intended for use after your visit to the Virginia Air and Space Center. All of the activities can be tailored to your specific classroom needs, and the procedures listed are suggestions for teaching.

Activity 1: Experiment Findings

For this activity your student will analyze and record data. You will need poster board and markers for this activity. You can do this together as a class or break up into groups. Have your students' recall each of the experiments that they participated in at the center. Have them analyze each experiment and make graphs of the contrasted or compared data. Have them answer the following questions:

1. What was the experiment testing?
2. What was the question?
3. What here the variables?
4. What safety precautions were taken?
5. What was the hypothesis?
6. What conditions might have altered the conclusion?
7. What was the overall conclusion to the question asked at the beginning of the experiment?

8. What was the temperature of the liquid nitrogen when it was boiling off into a gas?
9. What temperature does water boil off into a gas?
10. Has liquid nitrogen helped astronauts and scientists choose the right materials for use in space?

Activity 2: Engineer Frontier

For this activity students will have to use their imaginations and knowledge gained to engineer their own space tools. This may be best as a weekend project they can do at home. Make a list of materials they are allowed to use while creating their invention. Remind them to think back to the activity where they simulated work in space with the oversized gloves. What invention could you make that would make things easier to operate in space? You will be amazed at how creative your students can get with their inventions.

Extension: Have your students present their invention to the class. What does it do? How did they come up with the idea? If they were to really take them into space what materials would they need to be made out of? What kind of experiments would they need to run to test its durability and safety?

Resources

WEBSITES

- http://www.sciencemadesimple.com/lab_safety.html This website has a list of general lab safety procedures.
- <http://teacher.scholastic.com/space/tguide.htm>
- <http://www.astronautix.com>
- <http://depts.washington.edu/rural/RURAL/design/scimethod.html>
- <http://www.isd77.k12.mn.us/resources/cf/SciProjInter.html>

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