Deep Space Tic-Tac-Toe

Postvisit Activity for Deep Space

Grades 9-12

CDE Standards

Science: 1,4.4,5,6

Language Arts: 1,2,4,5,6

Math: 1,2,5,6

Preparation and Materials
Estimated Preparation Time: 30 minutes
Estimated Activity Time: Three or more time periods of 30 minutes each

Materials
Paper
Pencils
Colored pencils, crayons, or markers
Poster board (for game boards)
Miscellaneous materials for building models
Computer with Internet access

Learning Goals/Objectives
Students will analyze and synthesize information learned in a unit on deep space to complete three activities.

Connection to *Space Odyssey*
A visit to *Space Odyssey* is a cosmic journey, one that can't be taken without exploring the contents of our universe. Whether exploring planets at the Candor Chasma exhibit or studying stars at the Stellar Evolution interactive, visitors will undeniably learn about the many different objects in the universe. Be sure to check the Space Screen for the most incredible views you'll ever see!

Advanced Preparation
Make a copy of the tic-tac-toe activity sheet for each student in your class.

Classroom Activity
1. This activity is designed to differentiate for the needs and learning styles of the students in your classroom.
2. After completing a unit on space exploration, hand out a copy of the tic-tac-toe sheet to each of your students.
3. Briefly discuss each activity on the tic-tac-toe grid to give students any information they might need to complete their three activities.
4. Tell students they will choose three activities from the grid to complete a row. Students are allowed to choose any of the activities from the grid, as long as they lie in a straight line. (This is a preference only. You may opt to have students choose any of the activities from the playing board.)

5. Give the students the time they'll need to complete the three activities.

Variations/Extensions

1. Have a "Universe Day" to allow student to share their projects with classmates.
2. Host a "Space Night" open house for parents and families to come see student projects. You may choose to host this night in conjunction with a Museum Star Party for extra space exploration opportunities.

Resources

Web sites

http://chandra.harvard.edu/photo/2003/1154/

http://www.hubblesite.org/

http://apod.gsfc.nasa.gov/apod/lib/aptree.html

http://www.astro.uni-bonn.de/~pbrosche/hist_astr/ha_pers.html

Name: _____

Instructions: Choose a path on the tic-tac-toe board and complete three activities to make a tic-tac-toe. Your activities must lie in a straight line on the board.

1. Write a children's picture book illustrating the life cycle of a star. Be sure to include important stellar evolution vocabulary in an easy-to-read format for young children.	2. Build a model of our local group of galaxies. Include some kind of reference to the location of our solar system in your model. Also include some the irregular galaxies and dwarf elliptical galaxies, along with some of the globular clusters.	3. Write a song, poem, or rap to teach younger students an important deep space concept. Once composed, teach the song to a group of students, complete with movements.
4. Make a Venn diagram or another comparison chart and compare yourself to any object in the universe. List at least five ways you are similar to and different from that object, based on scientific fact. Keep your findings in a reflection journal.	5. Create a scrapbook of deep space images. Include factual captions and journal entries in your scrapbook.	6. Chart a section of the night sky and create three new constellations from the star patterns you see there. Draw the pattern of the stars in your constellations. Write a legend to tell how one of those constellations came to be.
7. Design a game to teach concepts about the universe. Use deep space images to help in your game board design. Teach a group of students how to play the game.	8. Write a script to portray the life of an early astronomer. Use factual information to show how this astronomer used the night sky to perform his/her research. Perform your skit in front of an audience.	9. Think about cosmic distances from a different perspective. Locate the distances, measured in light-years, of at least 10 objects in the universe. Calculate the distances if light-years were measured at the speed of sound instead of light.

Activities chosen: _____