Coca-Cola Space Science Center
Columbus State University

SHOWS, EXHIBITS & ACTIVITIES FOCUSED ON GEORGIA PERFORMANCE STANDARDS

Scavenger Hunt
Discovery Based Activity
Sixth Grade Earth Science

Summary

Student teams will participate in a scavenger hunt to locate information on exhibits, displays, and the computers located in the Plaza Area of the Coca Cola Space Science Center.

Duration of Presentation: 30 minutes

Associated Web Sites

www.ccssc.org - Coca-Cola Space Science Center
http://www.universetoday.com/- Latest news about astronomy, great pictures.
http://www.nineplanets.org/- Good source for research on our Solar System.
http://hubble.stsci.edu/gallery/ - Look no further for the best that Hubble has to offer!
http://sse.jpl.nasa.gov/index.cfm - This site has lesson plans/activities related to latest missions.
http://www.jpl.nasa.gov/missions/mer/- Latest news and pictures from the Mars rovers.
http://www.badastronomy.com/bad/index.html - Cool site that debunks common misconceptions and other pseudoscientific ideas.
http://www.solarviews.com/ss.html - Source for Solar System research and icosahedrons.
http://www.kidsastronomy.com - Great site for young astronomers.
http://www.nasa.gov - This site has it all.
http://spacelink.msfc.nasa.gov/ - NASA site for educational resources.
http://spacescience.nasa.gov/education/educators/links/ - Space Science Education/Public Outreach Sites
http://www.pbs.org/wgbh/nova/mars/ - Nova website on Mars rovers.
http://www.exploratorium.edu/ronh/solar_system/ - use to make a scale model of solar system

GPS Objectives

Co-Requisite – Characteristics of Science

Habits of Mind

S6CS1.Students will explore the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

a. Understand the importance of—and keep—honest, clear, and accurate records in science.

S6CS5. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

a. Observe and explain how parts are related to other parts in systems such as weather systems, solar systems, and ocean systems including how the output from one part of a system (in the form of material, energy, or information) can become the input to other parts. (For example: El Nino's effect on weather)

The Nature of Science

S6CS9.Students will enhance reading in all curriculum areas by:

c. Building vocabulary knowledge
- Demonstrate an understanding of contextual vocabulary in various subjects.
- Use content vocabulary in writing and speaking.
- Explore understanding of new words found in subject area texts.

d. Establishing context
- Explore life experiences related to subject area content.
- Determine strategies for finding content and contextual meaning for unknown words.

Co-Requisite-Content

S6E1.Students will explore current scientific views of the universe and how those views evolved.

a. Relate the Nature of Science to the progression of basic historical scientific models (geocentric, heliocentric) as they describe our solar system, and the Big Bang as it describes the formation of the universe.
b. Describe the position of the solar system in the Milky Way galaxy and the universe.
c. Compare and contrast the planets in terms of
- Size relative to the earth
- Surface and atmospheric features
- Relative distance from the sun
- Ability to support life

d. Explain the motion of objects in the day/night sky in terms of relative position.
e. Explain that gravity is the force that governs the motion in the solar system.
f. Describe the characteristics of comets, asteroids, and meteors.

S6E2.Students will understand the effects of the relative positions of the earth, moon and sun.

a. Demonstrate the phases of the moon by showing the alignment of the earth, moon, and sun.
b. Explain the alignment of the earth, moon, and sun during solar and lunar eclipses.
c. Relate the tilt of the earth to the distribution of sunlight throughout the year and its effect on climate.

S6E3. Students will recognize the significant role of water in earth processes.

a. Explain that a large portion of the Earth's surface is water, consisting of oceans, rivers, lakes, underground water, and ice.
b. Relate various atmospheric conditions to stages of the water cycle.

c. Explain the causes of waves, currents, and tides.

S6E4.Students will understand how the distribution of land and oceans affects climate and weather.

a. Demonstrate that land and water absorb and lose heat at different rates and explain the resulting effects on weather patterns.
b. Relate unequal heating of land and water surfaces to form large global wind systems and weather events such as tornados and thunderstorms.
c. Relate how moisture evaporating from the oceans affects the weather patterns and weather events such as hurricanes.

S6E5.Students will investigate the scientific view of how the earth's surface is formed.

a. Compare and contrast the Earth's crust, mantle, and core including temperature, density, and composition.
e. Recognize that lithospheric plates constantly move and cause major geological events on the earth's surface.
f. Explain the effects of physical processes (plate tectonics, erosion, deposition, volcanic eruption, gravity) on geological features including oceans (composition, currents, and tides).

English/Language Arts

ELA6R2 The student understands and acquires new vocabulary and uses it correctly in reading and writing. The student

a. Determines the meaning of unfamiliar words by using word, sentence, and paragraph clues.
b. Uses knowledge of Greek and Latin affixes to understand unfamiliar vocabulary.
c. Identifies and interprets words with multiple meanings.

ELA6RC2 The student participates in discussions related to curricular learning in all subject areas. The student

b. Responds to a variety of texts in multiple modes of discourse.
f. Recognizes and uses the features of disciplinary texts (e.g., charts, graphs, photos, maps, highlighted vocabulary).

ELA6RC3 The student acquires new vocabulary in each content area and uses it correctly. The student

a. Demonstrates an understanding of contextual vocabulary in various subjects.
b. Uses content vocabulary in writing and speaking.
c. Explores understanding of new words found in subject area texts.

ELA6RC4 The student establishes a context for information acquired by reading across subject areas. The student

c. Determines strategies for finding content and contextual meaning for unfamiliar words or concepts.

Writing

ELA6W3 The student uses research and technology to support writing. The student

a. Uses organizational features of electronic text (e.g., bulletin boards, databases, keyword searches, e-mail addresses) to locate relevant information.

Conventions

Listening/Speaking/Viewing

ELA6LSV1 The student participates in student-to-teacher, student-to-student, and group verbal interactions. The student

b. Asks relevant questions.
c. Responds to questions with appropriate information.
f. Actively solicits another person's comments or opinions.
h. Responds appropriately to comments and questions.
i. Volunteers contributions and responds when directly solicited by teacher or discussion leader.
j. Gives reasons in support of opinions expressed.

ELA6LSV2 The student listens to and views various forms of text and media in order to gather and share information, persuade others, and express and understand ideas. The student will select and critically analyze messages using rubrics as assessment tools.

Social Studies

SS6RC1 Students will enhance reading in all curriculum areas by:

c. Building vocabulary knowledge
• Demonstrate an understanding of contextual vocabulary in various subjects.
• Use content vocabulary in writing and speaking.
d. Establishing context
• Discuss in both writing and speaking how certain words are subject area related.
• Determine strategies for finding content and contextual meaning for unknown words.

Matrices

Map and Globe Skills

4. compare and contrast the categories of natural, cultural, and political features found on maps
6. use map key/legend to acquire information from historical, physical, political, resource, product, and economic maps
8. draw conclusions and make generalizations based on information from maps
12. compare maps with data sets (charts, tables, graphs) and /or readings to draw conclusions and make generalizations

Information Processing Skills

11. draw conclusions and make generalizations
15. determine adequacy and/or relevancy of information

ASSESSMENT

Scavenger Hunt Questions

OBJECTIVE: To gain knowledge about the Solar System, Space Science and the NASA Space Program.
INSTRUCTIONS: Working with a partner, find the answers to the questions. The answers can be found throughout the Center's Lobby area. Fill in the blanks on your paper.
DO NOT talk to any person other than your partner. Sharing any answers will disqualify you from the prize at the conclusion of the activity.
Hold your completed set of questions until corrected.

1. I separate **very warm** moist air to the east from **hot dry** air from the west.

   ____ ____ ____ ____ ____ ____ ____ .
   (Weather Display

2. How many Apollo Missions **landed** astronauts on the Moon?

   ____ ____ ____.
   (Look around the Apollo Capsule)

3. I consist of **three facilities placed 120 degrees apart** around the world.

   ____ ____ ____ ____ ____ ____ ____ ____ ____
   ____ ____ ____ ____ ____ ____ ____.
   (The Mars Rovers)

4. When **trees are in motion & resistance** is felt when walking, I am this seaman's term.

   ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
   (Weather display)

5. The **visible** spectrum of light is between these measurements.

   ____ ____ ____ ____ - ____ ____ ____ ____ **ANGSTROMS**.

(Spitzer Space Telescope Display)

6. I am the total time taken for a wave to complete a full to-and-fro swing.

____ ____ ____ ____ ____ ____.
(Wave Display)

7. This is **issued** when a Tornado is possible.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____.
(Weather Display)

8. I am the **most common** form of Lightning.

____ ____ ____ ____ ____ - ____ ____ ____ ____ ____.
(The Weather Display)

9. I am the **distance** over which the **wave repeats**.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ .
(Wave Display)

10. I provide power for **8.5 minutes**, am the structural backbone of the shuttle system but I do not come home.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
(The Space Shuttle Display)

11. In a **Category 3** Hurricane, you can expect this type of damage.

____ ____ ____ ____ ____ ____ ____ ____ ____
(Weather Display)

12. The Spitzer Space Telescope travels in this **type of Orbit**.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
(Spitzer Space Telescope Display)

13. I am the ratio of **Water Vapor present** in the air compared to the **maximum amount possible** at a given temperature.

____ ____ ____ ____ ____ ____ ____ ____

____ ____ ____ ____ ____ ____ ____ ____
(Weather Display)

14. I was the **first woman** in Space.

____ ____ ____ ____ ____ ____ ____ ____ ____

____ ____ ____ ____ ____ ____ ____ ____ ____ ____.
(Milestones in Space Exploration)

15. I am the **dry air** coming from sources over land.
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____

____ ____ ____ ____ ____ ____ ____
(Weather Display)

16. The **rover, Spirit,** landed on a plain near here.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____.
(The Mars Rovers)

17. I make up **78%** of the Earths Atmosphere.

____ ____ ____ ____ ____ ____ ____ ____.
(Weather Display)

18. I was the first **American Space Station**.
____ ____ ____ ____ ____ ____.
(Milestones in Space Exploration)

19. The Atmosphere **rises this distance** above the Earth.

____ ____ ____ ____ KM
(Weather Display)

20. Waves carry energy from one place to another but not this.

____ ____ ____ ____.
(Wave Display)

21. The **delay** in Communication from the **Earth to Mars** can be as long as--.

____ ____ ____ ____ ____ ____ ____ ____ ____ .
(Mars Rovers)

22. These **Dark Clouds** contain more **moisture** than usual and have streaks of rain extending to the ground.
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____.
(Weather Display)

23. **At Touchdown**, the Orbiter **is traveling** between these speeds.

____ ____ ____ to ____ ____ ____ MPH
(The Space Shuttle Display)

24. The process of **Evaporation, Condensation and Precipitation** is called…..

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____.
(Weather Display)

25. The word **"Nimbus"** means this.

_____ ____ ____ ____ ____ ____ ____ ____ ____ ____.
(Weather Display)

26. How many **Astronauts walked** on the moon?

____ ____ ____ ____ ____ ____.
(You have to figure this out on your own) (HINT…Question 2 is part of the Answer)

27. **The SRB's** separate at this distance above the Earth.
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ Miles.
(The Space Shuttle Display)

28. I carry **energy** in the form of **electric and magnetic fields** that move along the wave.

____ ____ ____ ____ ____ ____ ____.
(Spitzer Space Telescope)

29. I am a weather pattern **localized** in a small area that is different in a **significant** way from the weather around it.
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____.
(Weather Display)

30. What are the **two types** of Waves.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ **&**

____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
(Wave Display)

31. **At Lift – Off**, the Shuttle weigh's this.
____ . ____ ____ ____ _____ ____ ____ ____ ____ ____ ____ ____ ____ ____.
(The Space Shuttle Display)

32. To be classified a **Hurricane**, it must have **sustained winds** of at least this speed.

____ ____ ____ ____ ____.
(Weather Display)

33. This is the **pressurized working, living and stowage compartment** in the forward part of the Orbiter.

____ ____ ____ ____ ____ ____ ____ ____ ____ ____.
(The Space Shuttle Display)

34. I am hotter than **"Red Hot"**.

____ ____ ____ ____ ____ ____ ____ .
(Spitzer Space Telescope)

35. We were the **first Astronauts** to fly the Shuttle. **(Last names Only)**

____ ____ ____ ____ ____ **&**

____ ____ ____ ____ ____ ____ ____.
(Milestones in Space Exploration)