Out-of-This World Activities, Part 2

September 13, 2017

2:45 P.M. Central

If you experience audio problems, click and highlight the  button at the top of your screen. You can also run the Audio Setup Wizard under the Meeting menu, located on the upper-left corner of the Adobe Connect meeting interface

This webinar will feature video of the presenters and demonstrations as well as this powerpoint. If you cannot see the video, please say so in the chat box.

Christine Shupla and Joey Avila
(demonstrations by Yolanda Ballard, Andy Shaner, Steve Liu)
Lunar and Planetary Institute

Brooks Mitchell, *Space Science Institute*

Resources

Connect to the STARNet *Space Science* resources!

- Join the online community! Get access to resources, discussions and related opportunities.

Contact: Brooks Mitchell
bmitchell@spacescience.org

- Visit the project website at www.STARNetLibraries.org

Contact: Keliann LaConte
klaconte@spacescience.org

Explore Program

Hands-on activities

- Designed for libraries, camps, and out-of-school time
- Use inexpensive materials
- Highlight engineering and science concepts through investigations, demos, crafts, and facilitated conversations

Provides training and shares resources

www.lpi.usra.edu/education/explore/
www.facebook.com/groups/LPI.Explore/
explore@lpi.usra.edu

Funded by NASA and NSF

Out-of-This-World Activities:
Part 2

Activity 1: *A Trip to Mars*
Activity 2: *Mars Match*
Activity 3: *Searching for Life*
Activity 4: UV Kid

Social!

For families or groups of children
Ages 5-13

Poll Question:

Do you personally want to travel to Mars some day?

a. Yes, absolutely
b. Definitely not
c. I would consider it
d. I'm not sure

A Trip to Mars

Play a game that steps through a human mission to Mars, to learn about the variety of people supporting missions, and the factors that can affect a mission outcome.

http://clearinghouse.starnetlibraries.org/collections/DiscoverSpace/TripToMars-ActivityGuide-PosterPanels.pdf

A Trip to Mars

Participants move to different posters representing mission stages, and roll a die to determine which flap to lift.

- Each flap corresponds to a different mission officer.
- Participants follow the directions beneath, which dictate whether they were successful at that stage.

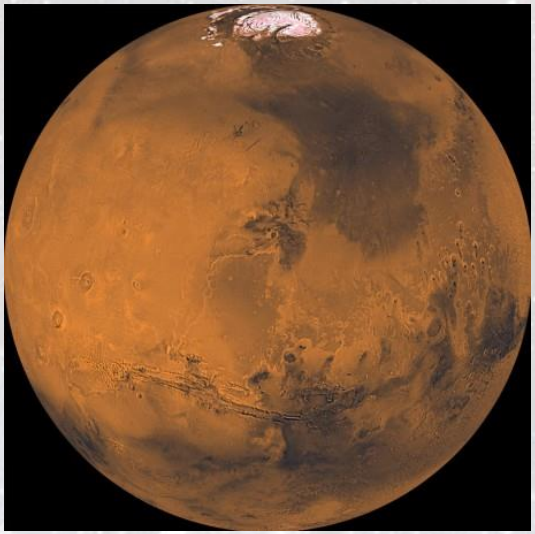
http://clearinghouse.starnetlibraries.org/collections/DiscoverSpace/TripToMars-ActivityGuide-PosterPanels.pdf

Chatbox Question:

What are some of the features we find on Mars?
For example, does Mars have mountains, lakes, streams?

Mars Match

View images of Earth and Mars to compare features, then match pairs of Earth features with Mars analogues.

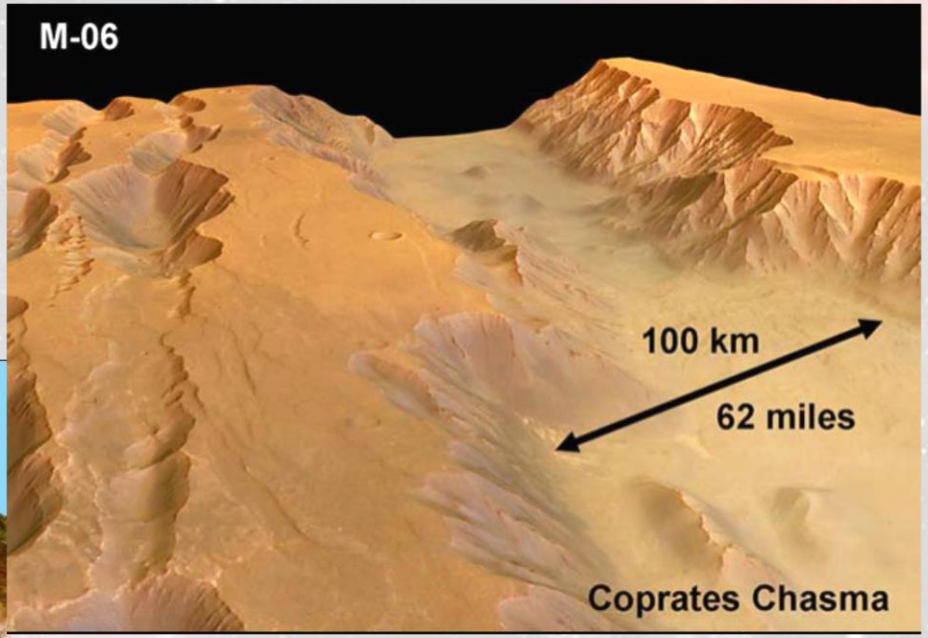


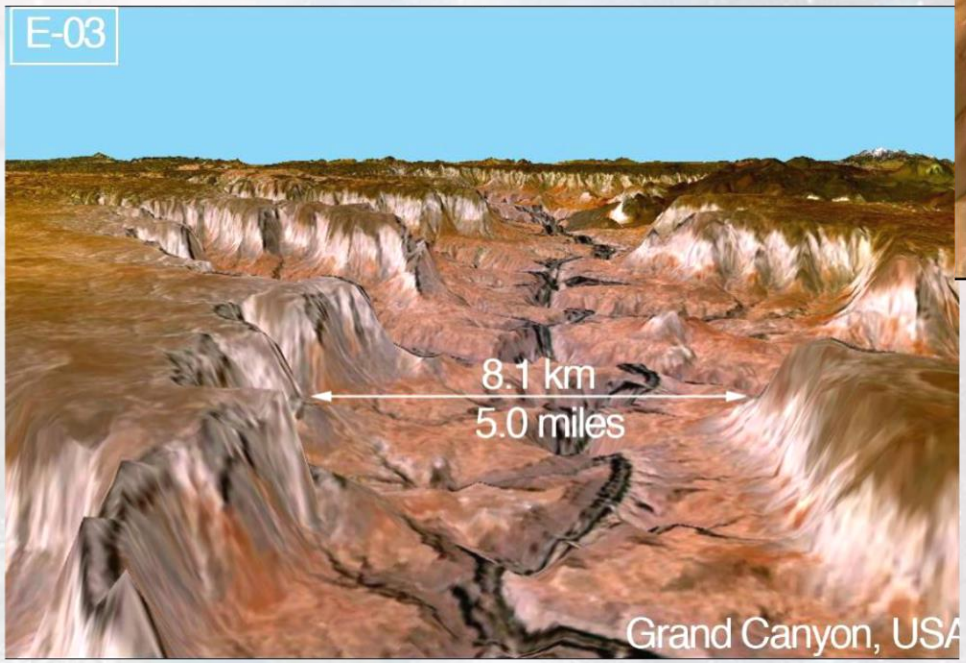
Learning Objectives: Participants will

- Engage in discussion about geologic features on another world.
- Explain logic behind pairing Mars and Earth geology together.

http://clearinghouse.starnetlibraries.org/collections/DiscoverNASA/Mars-Match-Game.pdf

Mars Match


M-06
100 km
62 miles
Coprates Chasma


E-03
8.1 km
5.0 miles
Grand Canyon, USA

Mars Match

Multiple ways to use:

- Use as an icebreaker—hand each person one or two cards and ask them to find those with the matching cards
- Participants can work in small groups to match all of the cards
- Use like the game “Memory” or “Concentration” for two players
- Each individual can do it simultaneously to see who finishes first

Searching for Life

Discuss how life is defined and conduct a simple experiment, looking for signs of life in three different "soil" samples.

Learning Objectives: Participants will

- Identify, refine, and create a set of characteristics that may be used to identify living versus nonliving things.
- Observe and share their observations of the three samples, discussing the evidence for life.

www.lpi.usra.edu/education/explore/LifeOnMars/activities/searchingForLife/

Searching for Life

- Participants work in groups
- Observe the cups before and after hot water is added
- To describe their observations, consider providing younger participants with possible words; older participants may use their own words.

1. Compare the three cups of material before adding the hot water. Observe without touching or tasting any of the samples (smelling is okay, as is touching the outside of the cup). **Circle the words you would use to describe each cup and draw each in the cup-shaped space below. Do any show any signs of life?**

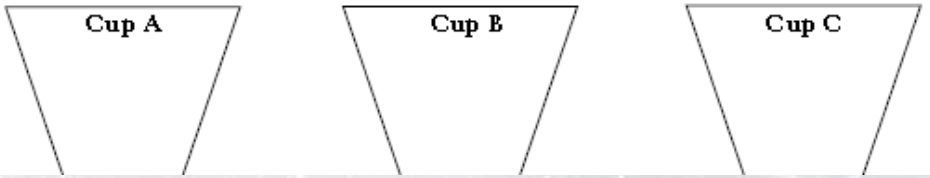
Cup A

growing slushy foamy warm cold moving
shrinking bubbly smelly (add your own description)

Cup B

growing slushy foamy warm cold moving
shrinking bubbly smelly (add your own description)

growing slushy foamy warm cold moving
shrinking bubbly smelly (add your own description)



Searching for Life: What is life?

Why do we need a definition?

Examples?

What tells us something is alive?

Poll Question:

Have you ever been sunburned?

a. Yes, absolutely, multiple times
b. Yes, at least once
c. Somewhat—but not to where my skin peeled
d. Not really

UV Kid

Use common craft materials and ultraviolet (UV)-sensitive beads to construct a person (or dog or imaginary creature), then design and test materials to protect UV Kid from too much radiation.

Learning Objectives: Participants will

- Discuss the dangers of UV radiation.
- Design, predict the effects of, and test protective covering for their UV Kid.

http://nasawavelength.org/resource/nw-000-000-004-195

UV Kid

- Provide each participant with two chenille sticks (pipecleaners), 2-4 pony beads and 2-4 UV beads (available in craft stores and online science education retailers).
- After participants make their creation, test the effects of UV light by taking their UV kid outside.
- Provide various materials for participants to then design an outfit/umbrella/protective covering for their creation.
- Before they test the design, have participants predict the effectiveness of their protective covering.

Implementation Discussion

--the interactive part!

Explore Further Resources

www.lpi.usra.edu/explore

HANDS-ON SCIENCE ACTIVITIES

Lunar exploration
The planets Earth, Jupiter, and Mars
Rockets
Health in space

STARNET Activities

clearinghouse.starnetlibraries.org/index.php

Be sure to take the final survey!

https://www.surveymonkey.com/r/STAR_Net

And print your personalized certificate of completion

And now … time for the drawing!

Thank you! Keep in Touch!

STAR_Net Project
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