



Sun-Earth Day

Celebrate the Connection!

www.sunearthday.nasa.gov

Public Outreach: Make and Take Activities

What You'll Need

- copies of "Ancient Observatories, Timeless Knowledge" poster: original, changed version, original with text, and answer key (see next pages)
- crayons or markers
- (optional) lamination or sheet protectors
- (optional) transparency pens
- (optional) wet-erase board cleaner or other hard surface cleaner

Find the Differences

About this Activity

Read a poster about how different ancient cultures observed the Sun, and then use your own observational power to find the differences between the original poster and a version with ten small changes.

Left: The original "Ancient Observatories, Timeless Knowledge" poster.

Teachers can do this activity in the classroom with their students in teams of two.

Preparation

Print out enough copies of the original poster, the changed version, and the original with text for your participants, and one copy of the answer key for the volunteer.

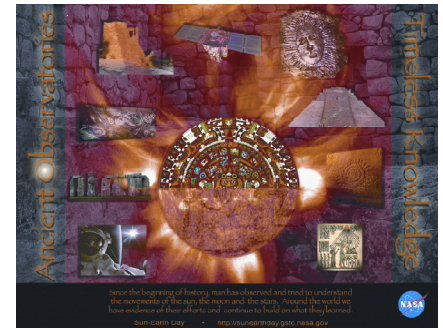
Optional: Print out only a few copies of the original poster, the changed version, and the original poster with text and laminate them or place them in sheet protectors to make them reusable and sturdier. Participants can circle the differences in transparency pens, and the volunteer can wipe them clean when the participant is done.

To Do and Notice

- 1) Have the participants read the poster with text.
- 2) When they are ready for the challenge, hand them the original poster (without text) and the changed version and ask them to circle the differences between the two. You can offer a prize to the fastest, or time them on how long they take to find all ten differences.
- 3) Verify their circled differences with the answer key.

Activity Notes

This activity is adapted from Solar and Heliospheric Observatory (SOHO) Classroom "Find the Differences" Activity. See link below for the classroom activity.



Related Websites

SOHO Classroom: Our Star the Sun Information and Activities.

<http://soho.nascom.nasa.gov/classroom/>

Ancient Observatories, Timeless Knowledge: Original Poster with Text

Ancient Observatories

This structure called Hovenweep Castle was built over 800 years ago in the remote American Southwest by the Anasazi tribe. Some of its windows suggest that it was partly used for observing the Sun and the seasons.

This American Indian rock drawing by the Chumach tribe of California as well as other artwork discovered suggests some astronomical and solar understandings.

The huge, famous stones of Stonehenge were arranged in a circle and expanded upon over 1,500 years in England, beginning back at about 3000 BC. It seems to have been aligned with the position of the rising Sun at the beginning of summer. Much is not understood of its purpose.

Astronauts are vulnerable to radiation from solar storms. NASA is working to gain a better understanding of the Sun and how to predict these storms.

A drawing of the SOHO spacecraft that studies the Sun from space. Launched in 1995, it orbits the Sun from a position one million miles (1.6 million km) towards the Sun from Earth and sends back data and hundreds of images every day.

This is part of the famed Mexican calendar stone, many hundreds of years old. It featured the Sun in its center and the Sun played a large part in Mexican culture.

This pyramid-like structure is called Chichen Itza in the Yucatan peninsula in Central America. Built almost 1,000 years ago, its orientation shows us its Mayan builders clearly had a solid understanding of the Sun and the seasonal changes of its position.

This is a Sun carved into rock found near Chaco Canyon, New Mexico. Many of the rock buildings there were aligned with the positions of the Sun. The structures seem to have served some ceremonial purposes.

The Sun, called Ra, was worshipped by the Egyptians and central to their culture. The drawing here shows the Sun's rays

Timeless Knowledge

Since the beginning of history, man has observed and tried to understand the movements of the sun, the moon and the stars. Around the world we have evidence of their efforts and continue to build on what they learned.

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Ancient Observatories, Timeless Knowledge: Original Poster with Text Removed



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Answer Key with Ten Differences Circled



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(Changed version)