

“SKYWATCHERS OF AFRICA”

Objectives:

Students/visitors should be able to:

- Express an interest in observing many of the same phenomena that were observed by different African people.
- Recognize that different African groups used celestial objects and cycles as one of the many ways to organize, and to ensure the survival of, their cultures.
- Identify some celestial objects or groupings of stars important to different African cultures (e.g. Sun, Moon, stars, & constellations).
- Identify aspects of celestial observations that can be applied to the student's own lives (e.g. dark sky, changing rise/set positions of the Sun, marking the sunset, etc)
- Articulate an appreciation for the sky knowledge of African cultures.

This program is aligned with the following Illinois Education Standards: 12.F.2a, 12.F.2b, 12.F.2c, 12.F.4a, 13.B.3b, 13.B.3c, 13.B.5e, 18.C.4a. Next Generation Science Standards: 1.ESS1.1, 1.ESS1.2, 5.ESS1.2

Brief Summary:

“Skywatchers of Africa” is a unique program that celebrates the many diverse African cultures (including the Egyptians) and their observations and explanations of the yearly cycles of the heavens. The program discusses the seasons and the changing sunrise/sunset positions and how Africans marked these positions to form a makeshift calendar. Africa has many vibrant cultures thriving today as well as countless past civilizations that continue to speak to us through their sky lore. The program is intended for students in grade 5 or older. This show is made possible by a generous grant from the Staples Foundation.

Pre-visit Questions/Activities:

- Using a shadow of a stick, telephone pole or electrical tape stuck to a classroom window, mark the path of the Sun each hour over the course of the day near either March or September (the equinoxes). Do the same near December. Note how the Sun does not follow the same path. Explain how the tilt of the Earth's axis and the Earth's revolution around the Sun ensures the Sun does not always rise in the same spot. How can marking the position of the Sunrise and/or Sunset help us develop a calendar?
- Chart the phases of the Moon over the course of a month's time.
- Look at a current map of Africa. Many students assume that Africa is one large country! Note the many countries and therefore cultures, dialects and geographic landmarks. Look for the following areas: South Africa, Swaziland, Mali, Egypt and Kenya and be able to locate the Nile River and Sahara Desert. Explore what misconceptions and/or preconceptions exist in your class regarding the African people.
- Discuss what sorts of rituals, traditions or habits we have today. Which holidays do we celebrate and how do we celebrate? How is the calendar configured? Do these rituals differ from place to place? Ask relatives about how holidays/traditions have changed over time.
- How would life be different in Africa with the continent straddling the Earth's equator? Is the Sun higher or lower in the sky at noon compared to Illinois?

Post-visit Questions/Activities:

- Try to locate some of the objects discussed in the show in the real sky, such as the Pleiades star cluster, the Big Dipper, Polaris, and Orion. The planetarium can provide a seasonal star chart plus public libraries have books that contain star charts.
- Most of the sky lore we hear about is of Greek or Roman origin. Compare African sky stories to those of the Greeks & Romans, or even the Chinese. What do they have in common?
- African masks are still associated with religious ceremonies or are concerned with spirits of the dead, fertility rites or curing sickness. Other masks portray mythological events or teach a lesson or represent ancestors. Other masks are intended to act as intermediaries for talking with the gods. Have students construct a mask and discuss the reason behind their mask. The masks can be held in front of the face on popsicle sticks. Do we use masks in our society today?
- Search the internet for some of the cultures discussed in the show, such as the Dogon, the Tuareg of western Africa, the Egyptians, and the Yoruba tribe.
- Be sure to visit the African Gallery of the Spurlock Museum (<http://www.spurlock.illinois.edu/exhibits/highlights/africa.html>) on the University of Illinois campus.

Internet & Print Resources:

"Beyond the Blue Horizon" by E.C. Krupp (Harper-Collins, 1991)

"Great Ideas for Teaching About Africa" by Misty Bastian & Jane Parpart (Lynn Rienner Pub, 1999)

"The Lost Cities of Africa" by Basil Davidson (Little, Brown, & Co., 1972)

"African Short Stories" by Chinua Achebe & C.L. Innes (Heinemann, 1985)

Astronomical Society of South Africa: <http://www.saa0.ac.za>

African online science magazine: <https://www.sciencemag.org/category/africa>

Minorities in Science: <https://www.asbmb.org/minorityaffairs/resources/>

Dogon sites: <http://www.sacredsites.com/africa/mali/dogon.html>

Yoruba tribe: http://www.rebirth.co.za/yoruba_mask_history_meaning.htm

Tuareg people: <https://www.naturalnavigator.com/the-library/navigating-with-the-tuareg/>

Egyptian skywatching: <http://www.starteachastronomy.com/egyptian.html>

Namoratunga: <http://www.bluegecko.org/kenya/tribes/turkana/articles-namoratunga.htm>

Mancala, a game they play in Africa and believed to be the oldest game in the world: <https://www.mathplayground.com/mancala.html> and the rules are here:

http://boardgames.about.com/cs/mancala/ht/play_mancala.htm