SPACE awareness

BUILD YOUR OWN MOON CALENDAR

Discover how lunar phases can be used to measure time

, Haus der Astronomie

Temat z programu nauczania
Solar System

Ważna koncepcja nauki

Słowa kluczowe
Islamic Heritage

Wiek
6 - 14

Poziom kształcenia
Primary School, Middle School

Czas trwania
1h30

Rozmiar grupy
Group

Nadzór ze względów bezpieczeństwa
Supervised

Koszt
Low (< ~5 EUR)

Lokalizacja
Indoors (small, e.g. classroom)

Umiejętności kluczowe
Planning and carrying out investigations

Rodzaj zajęć edukacyjnych
Partial enquiry

KRÓTKI OPIS

In this activity children will build and use a Moon calendar. A template is provided which contains the full cycle of lunar phases. The children compare the Moon phases with the real Moon as they observe it in the sky and count the days within a month.

CELE OGÓLNE

The children become acquainted with a lunar calendar and learn that there is more than one way to measure time throughout the year than to use Earth's orbit around the Sun. By using the lunar calendar, the children reinforce their knowledge about lunar phases and learn to observe them on a daily basis. In doing so, they also develop a sense for the pace of how the phases change and the duration of the full lunar cycle.

CELE OPERACYJNE

After this activity the children will be able to:

- explain the difference between a lunar and a solar calendar.
- name the number of days that are in a lunar month.
- explain why a lunar calendar does not follow the seasons.

EWALUACJA

- Ask the children how a common year is defined (one full orbit of the Earth around the Sun).
- Ask the children on which celestial object a lunar calendar is based. Ask them how we know when a lunar month has passed (lunar month = one full cycle of lunar phases).
- When working with the lunar calendar, ask the children how many days are in a lunar month, i.e. the duration between two identical phases (between 29 and 30, 29.5 to be exact).

- Let the children calculate the number of days that are in a lunar year of 12 lunar months (6*29+6*30=354). Ask them by how many days that differs from our common calendar (approx. 11). Are the seasons connected to the solar year or the moon phases (solar year)? What does that mean for the seasons when using a moon calendar (they shift)?

MATERIAŁ

- A Moon calendar set consisting of two discs (provided)
- Scissors
- A round split pin

PODSTAWOWE INFORMACJE

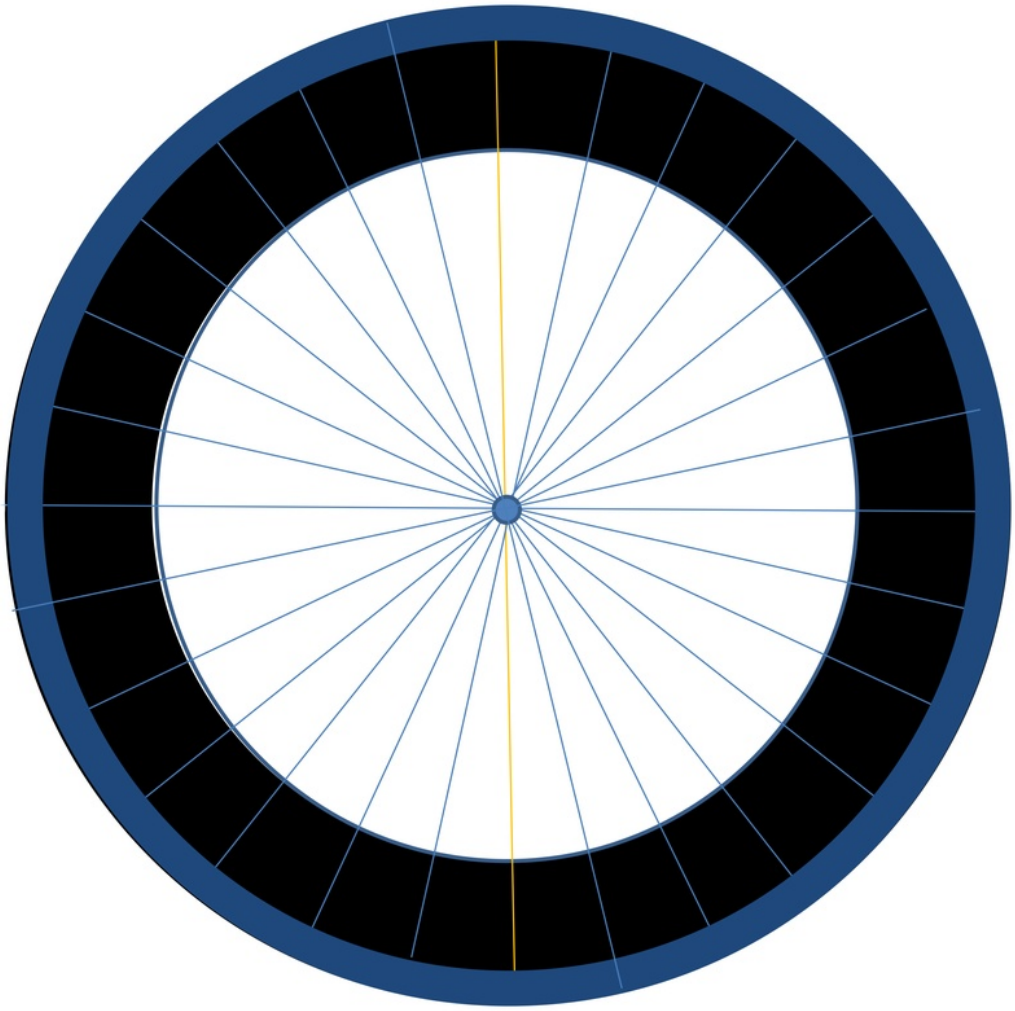
A lunar calendar is a calendar that is based on the cycle of the Moon phases. As there are slightly more than twelve lunations in a solar year, the period of 12 lunar months (354 days) is shorter than a solar year (365 days). Many cultures use Moon calendars, among them the Muslims. Since the Islamic calendar has a year that always consists of 12 lunar months, the Islamic calendar is not linked with the seasons! This is different for e.g. the Jewish calendar which adds a thirteenth lunar month every two or three years to correct for the divergence between the lunar and solar calendars.

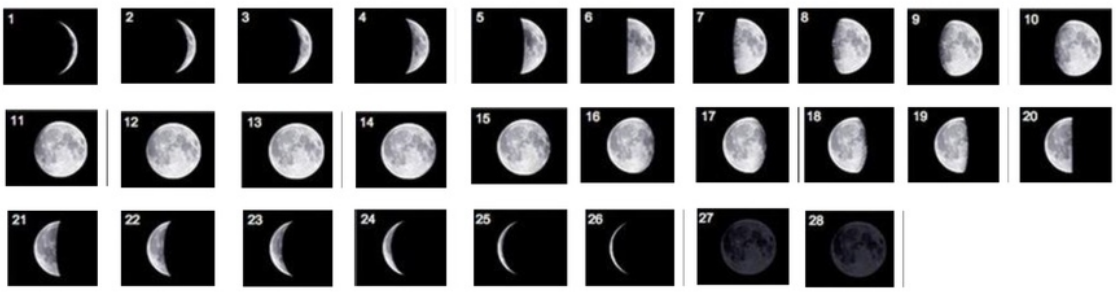
PEŁNY OPIS ZAJĘĆ

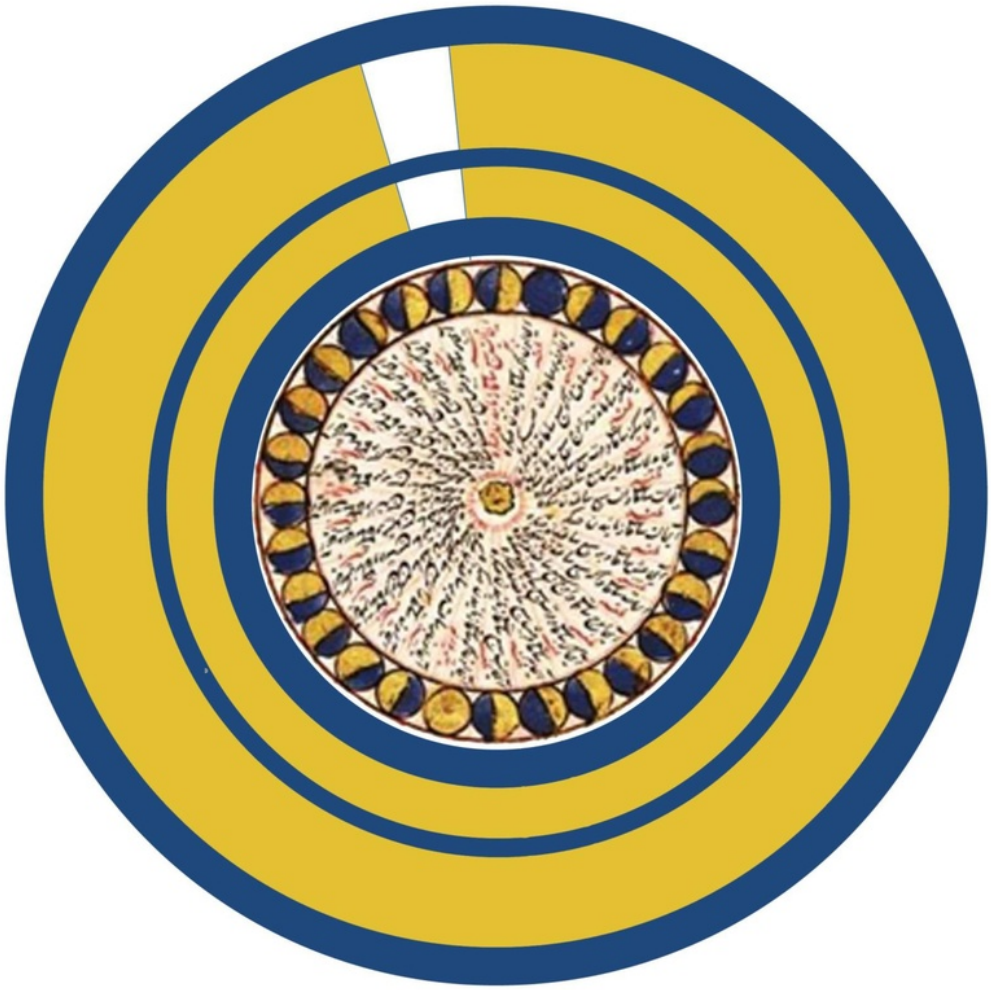
Cut out the two discs, carefully maintaining their round shape. On Disc 2 carefully cut out the two small white windows, so that you can see through them. Now make a small hole in the centre of both discs and fix them together with a split pin. You can now see the Moon images through the opened window. Look for the image with the yellow dot and write below the number 1. Turn the upper disc in a counter-clockwise to the left. Complete the numbers below all images of the waxing Moon, from 1 to 28. On a clear night take the calendar outside and look for the Moon. Compare its shape with the images of the calendar and follow the Moon phases throughout the following days!



The Moon calendar viewer. (Credits: Scorza)




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The Moon calendar viewer. (Credits: Scorza)

PROGRAM NAUCZANIA

Space Awareness curricula topics (EU and South Africa)

The journey of ideas, Solar System

ZAKOŃCZENIE

This activity introduces the lunar calendar. It uses the lunar phases to showcase the fundamental natural cycle it is based on. The children apply their knowledge of lunar phases and, by using the tool provided for this activity, they compare the inherent periods with the solar calendar. In order to reach conclusions, they have to conduct their own observations of the lunar phases during a month.

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