

MOON MOBILE

Day or night, what phase of the Moon is in sight?



Curriculum topics

- Earth and the Solar System
- Patterns in the Sky
- Moon Phases
- Engineering/Design

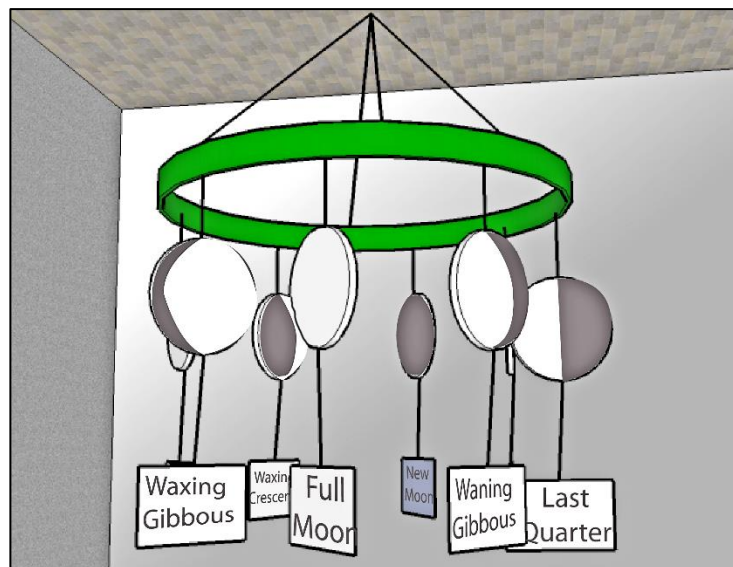
Subjects

- Earth & Space Science

Grade range: K – 2

Who we are: Resource Area for Teaching (RAFT) helps transform the learning experience by inspiring joy through hands-on learning.

Create a mobile out of cardboard, paper, lids, and printed cutouts to visually show the phases of the Moon! Mobiles have been used for thousands of years all over the world both as soothing wind chimes and as a form of art (kinetic sculptures). This project blends the classic idea of a mobile with the cyclic (moving in a circle or cycle) nature of the Moon's phases.



Share Your feedback!

<http://bit.ly/RAFTkitsurvey>

Materials

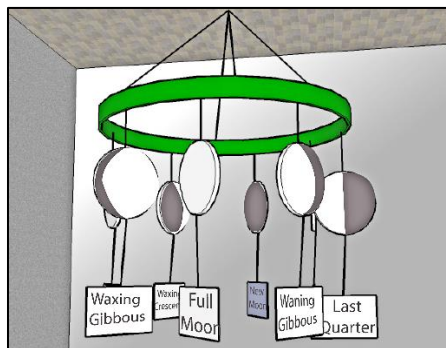
Materials in the kit may vary but generally, this kit contains the following:

- Beverage lids, plastic, 3" – 4" diameter (8)
- Cardboard strip, 2 ft. long (1)
- Yarn or string, approx. 8 ft. (1)
- Paper, 8.5" x 11" (2)
- Moon phase Image set, 8 images (1)

- Note:** Extra moon phase copies downloadable at <https://bit.ly/3tSHETO>
- Not included: Hole punch, scissors, tape, or glue

To Do and Notice

- 1** Cut out the 8 moon phase images from the "Phases of the Moon" sheet. Be sure **not** to remove the word "top" printed above each moon image. Cut 8 rectangular labels from a sheet of paper about 1" x 3" in size. Use the image on page 4 to write the name of each phase on the paper labels.
- 2** Cut 12 lengths of yarn/string, each 8" long. Punch a hole near the top of each label to provide a place to attach yarn/string. Punch 2 holes near the opposite edges of 8 drink lids.
- 3** Insert one length of yarn/string through the punched holes of one lid. Move the lid so that it is centered on the inserted string/yarn (see below). Repeat for the remaining 7 lids.
- 4** Tie the 8 labels made in step 2 to an end of each yarn/string with a lid. Tape each moon image onto the flattest side of a lid. Make sure the top of each image is on the loose end of the yarn/string, opposite the labels.
- 5** Bent the cardboard strip to form a circular hoop. Overlap the ends slightly and secure them together using tape. Punch 8 holes in the hoop at each of the moon phase positions indicated in the image on page 4.
- 6** Tie the moon phase lids to the hoop at each hole, starting with Day 0 and continuing to move counter-clockwise, as seen from the top of the hoop. The label for each phase should match its corresponding image.
- 7** Use the remaining yarn/string to hang the moon mobile to the ceiling or other elevated location.
- 8** **Share** your experience with RAFT! Submit photos/video via email at education@raft.net or on social media ([Facebook](#), [Twitter](#), [Instagram](#)).



Core Content Skills:

Science & Engineering (NGSS)

Developing and Using Models, Analyzing and Interpreting Data, Patterns, Earth and the Solar System, The Universe and its Stars

Social Emotional Learning

- Self-awareness
- Self-management
- Responsible decision-making

The Content Behind the Activity

Half of the Moon's surface is always illuminated by the Sun except on the rare occasions when the Moon enters the Earth's shadow (Lunar eclipse). When seen from the Earth the Moon seems to cycle from being in total darkness (a new moon) to being fully illuminated (full moon) and back again. The changing area of illumination is the result of our seeing varying parts of the constantly illuminated half of the Moon as it circles the Earth. The cycle of varying illumination is divided into 4 exact points (**new moon**, **first quarter**, **full moon**, and **third quarter**) and the 4 intervals between the exact points (**waxing crescent**, **waxing gibbous**, **waning gibbous** and **waning crescent**), collectively called the phases of the Moon.



Reuse

This kit uses 100% reusable materials designed for other uses. To continue making a positive impact in reducing waste, reuse these materials in other projects. Additionally, any unused materials can be collected and delivered back to RAFT.

Feedback

Please comment on this kit by taking this short survey: <http://bit.ly/RAFTkitsurvey>. Let us know of any material concerns (missing, broken, or poorly fitting parts) as well as any suggestions for improvement.

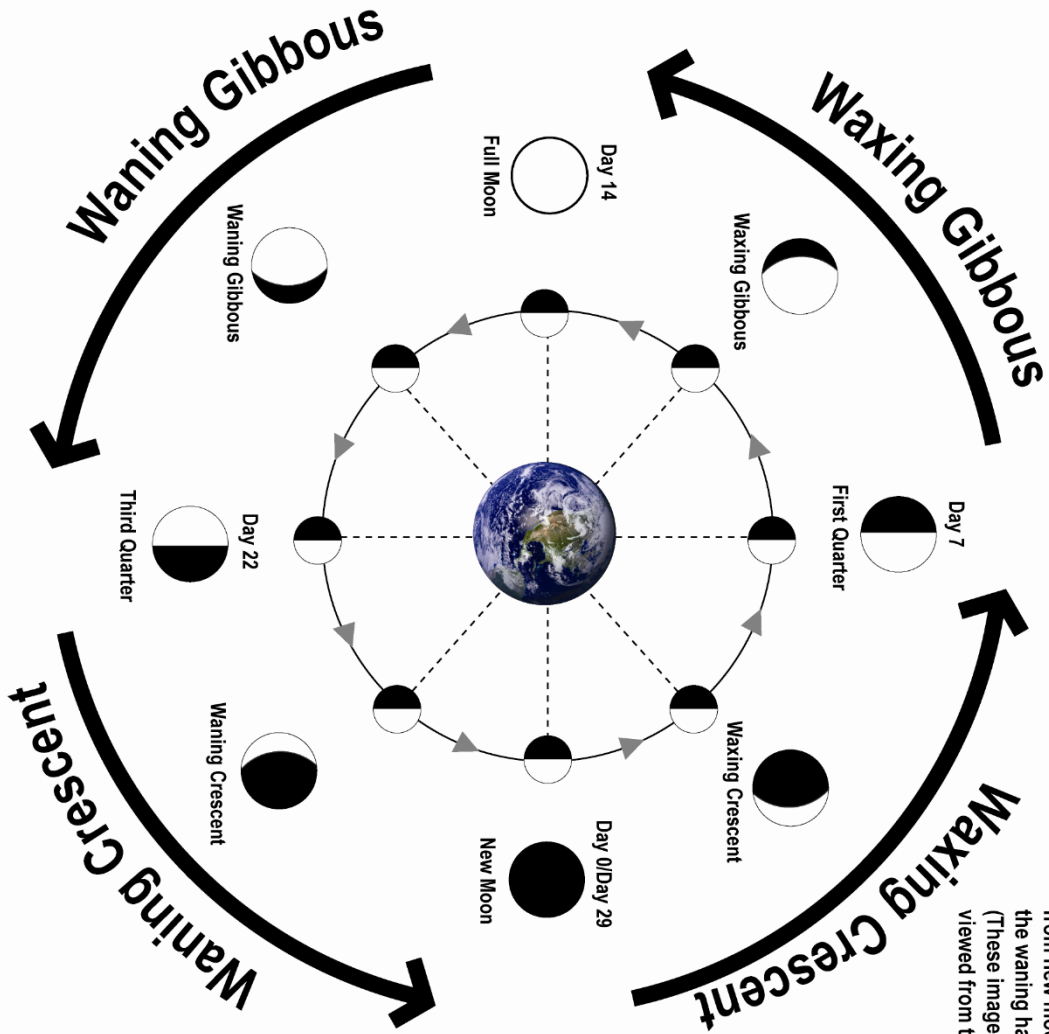
Visit <https://raft.net> to view related activities!

A Reason for the Seasons
Solar System in the Round
Space Stuff to Scale
Sun Measurer

Resources

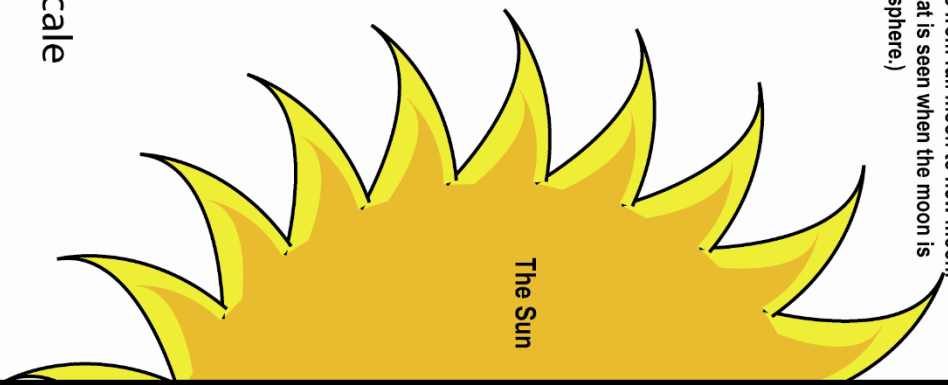
- Moon phase video - <https://bit.ly/3Fw4fvg>
- Wonders of the moon, articles - <https://bit.ly/30INz58>

PHASES OF EARTH'S MOON



The moon has a phase cycle of 29.5 days. The cycle starts at the "New Moon" and each subsequent point in the cycle is described by counting the number of days that have passed from that point. The first half of the cycle is known as the waxing half which runs from new moon up to full moon. The second half of the cycle is the waning half which continues from full moon to new moon. (These images are based on what is seen when the moon is viewed from the Northern Hemisphere.)

Not to Scale



The Sun

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