

Moon Mania Resources

Resources:

Our goal is to make all of our activities and resource information freely available. We have included our powerpoints from our workshops so that you may access them for yourselves, to download and share with other educators. The powerpoints are not intended to be used directly in K-12 classrooms. You may edit them to use as appropriate.

The activities, resources and powerpoints are located at:

Lunar Phases: http://www.lpi.usra.edu/education/step2012/participant/lunar_phases/

Tides: <http://www.lpi.usra.edu/education/step2012/participant/tides/>

Websites and Activities - Phases of the Moon

Astronomy Simulations and Animations <http://astro.unl.edu/animationsLinks.html>

A compilation of various online programs on astronomical topics. This site includes links to several lunar phases simulators, an eclipse simulator, and more.

University of Wisconsin's CIMSS Moon Phase Applet

<http://cimss.ssec.wisc.edu/wxfest/MoonPhases/moonphases.html>

This program allows students to explore how much of the Moon is in darkness, and compare the view of the Earth-Moon system. May help to some extent with visualizing the Moon's illumination from the Sun.

National Schools' Observatory Phases of the Moon

<http://www.schoolsobservatory.org.uk/astro/esm/moonphase>

Students can observe the changing phases of the Moon from different perspectives by date, and can also compare them to current phases using the Moon Phase Calculator.

Zoom Astronomy: The Moon <http://www.enchantedlearning.com/subjects/astronomy/moon/Phases.shtml>

The changing faces of the Moon's surface are presented in a clear and detailed illustration for younger and older children along with the explanations for different Moon "names" and a brief narrative of Moon phases. This site offers a blank Moon-phases diagram for labeling, a Moon coloring page and quiz, and links to several other Web sites.

A Private Universe <http://www.learner.org/teacherslab/pup>

Offers an in-depth Moon-phasing lesson using a light bulb and Styrofoam balls. A thorough explanation of phases is also presented along with an inquiry-based exercise in which students choose graphic illustrations to demonstrate both the correct and incorrect assumptions often made.

Windows to the Universe <http://www.windows2universe.org/>

Currently supported by the National Earth Science Teachers Association, this site shares a brief explanation of Moon phases for beginner, intermediate, and advanced learners enhanced by a link to special names given to particular phases, a graphic of lunar eclipses, and Galileo's drawings of the phases of our Moon.

The Moon Project <http://worldmoonproject.org/>

Put together by several science teacher-educators to teach their pre-service students about science in general. The site offers Moon Phase calendars and additional Moon web links. Suitable for adults.

The Astronomical Applications Department of the U.S. Naval Observatory <http://aa.usno.navy.mil/data>

Presents easily accessible data pertaining to Moon phases, including tables, images, illustrations, Moon phases by date, and "what the Moon looks like today." Information and images are useful for all ages. Text is appropriate for

young adults and up.

Lawrence Molnar of Calvin College's Department of Physics and Astronomy

<http://www.calvin.edu/~lmolnar/moon/index.html>

Offers an interactive Java tool designed to enable older children to develop an understanding of the geometrical reasons behind the phases exhibited by our Moon. Students view and manipulate animations and “quiz” themselves on their knowledge.

StarChild http://starchild.gsfc.nasa.gov/docs/StarChild/solar_system_level2/moonlight.html

Produced for NASA by the Goddard Space Flight Center, offers an educational and entertaining site that allows viewers of all ages to have fun with Moon phasing.

The “Project Astro” site http://www.noao.edu/education/phases/phases_demo.html

A collaborative effort between The National Optical Astronomy Observatory and the Astronomical Society of the Pacific, includes video clips demonstrating Moon phasing from both space and Earth perspectives, along with an explanatory narrative suited for older children and young adult audiences.

Some Basic Astronomy Demonstrations for Early Elementary Ages from William P. Blair

<http://fuse.pha.jhu.edu/~wpb/globe.html>

A description of several classroom activities for investigating lunar phases, Earth-Moon distances, and lunar eclipses.

Oreo Moon Phases <http://analyzer.depaul.edu/paperplate/Oreo%20Moon%20Phases.htm>

Paper Plate Education presents “Oreo Moon Phases”, an activity that will give children ages 5 to 12 a real “hunger” for knowledge.

Inconstant Moon <http://www.inconstantmoon.com/>

Offers pictures, calendars, and music that can be enjoyed by all ages.

Websites and Activities - Tides

Video Bay of Fundy: http://www.lpi.usra.edu/education/step2012/participant/Hook_Tides.wmv

This video shows a tidal cycle at the Bay of Fundy, and makes an excellent introductory hook to this topic.

Tide Activity: <http://www.mbgnet.net/salt/sandy/activity.htm>

Students are asked to graph 5 days of tide data from two different locations, and compare the height of the tides, in this section of pages by the Missouri Botanical Garden.

NOAA What are Tides Video: http://oceanservice.noaa.gov/education/tutorial_tides/tides01_intro.html

This simple animation shows tides rising and falling; it can be used for multiple grade levels.

SERC Tides: <http://serc.carleton.edu/NAGTWorkshops/ocean/visualizations/tides.html>

This site includes a variety of visualizations about tides and how they work; some are more appropriate for middle school through college.

Tides by StudyJams: <http://studyjams.scholastic.com/studyjams/jams/science/weather-and-climate/tides.htm>

Learn more about tides with this cartoon animation from StudyJams. The beginning is appropriate for elementary students, but some of the details are at a middle school level.

US Tides Data: <http://tidesonline.nos.noaa.gov/geographic.html>

Data is available in the form of a graph for stations along US coasts, selection by maps.

What are tides? NDBC Science Education: <http://www.ndbc.noaa.gov/educate/tides.shtml>

This section from the National Data Buoy Center describes tides and shows a plot of tides; the level is more

appropriate for middle school.

NOAA Tides and Currents: <http://co-ops.nos.noaa.gov/education.html>

This section has a variety of information, appropriate for the high school level.