



Nature-Watch Activity Kit

Pocket Sundial

Pocket Sundial Kit Contents

Item:	Kit Size		
	1	25	100
Wood Dowels	1	25	100
Sundial Cards	1	25	100
Screw Eyes	2	50	200
Necklace Cords	1	25	100
Instructor Manual	1	1	1

This page includes the Next Generation Science Standards (NGSS) mapping for this kit and a Science, Technology, Engineering, and Math (STEM) chart (on back) to use in adapting and extending this activity to other subject areas. The NGSS mapping and STEM chart are brought to you by Resource Area For Teaching (RAFT) in partnership with Nature-Watch.

Nature-Watch and Resource Area For Teaching (RAFT) are both dedicated to providing the best in hands-on experiential teaching resources for educators and their students.

For more information visit
www.nature-watch.com and
www.raft.net

Next Generation Science Standards Alignment

1-PS4-3:

Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.

1-ESS1-1:

Use observations of the sun, moon, and stars to describe patterns that can be predicted.

1-ESS1-2:

Make observations at different times of year to relate the amount of daylight to the time of year.

5-ESS1-2:

Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearances of some stars in the night sky.

MS-ESS1-1:

Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar eclipses of the sun and moon, and seasons.

See Back for STEM Chart

Science

- Use the device to predict the time at specific parts of the day. Compare the results to an actual clock and determine the error in the device
- Describe the times measured on the device with the position of the sun in the sky

Technology

- Visit <http://learn.fi.edu/time/Journey/Sundials/interactsd.htm> for various interactive sundial activities
- Create a short video on how to properly use the sundial. Upload the video to the web and share it with peers

Pocket Sundial

Engineering

- Compare different pocket sundial designs and research the accuracy of each design
- Use a model of the Earth and sun to make and defend a claim regarding the device's ability to tell time

Math

- Explain the sundial designs in terms of its shape and attributes such as volume and surface area
- Measure and record the area of shadows cast on the device. Create a graph of shadow area vs. time of day.

