

MEASURING THE SUN'S DIAMETER

Lesson Summary:

Students build a pinhole camera to produce an image of the sun. Students measure the diameter of the sun's image and the length of the pinhole camera to calculate the diameter of the sun.

Objectives:

The student will:

- build a pinhole camera;
- measure using a metric ruler; and
- calculate the diameter of the sun using the image produced by a pinhole camera.

GLEs Addressed:

Science

- [5-8] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [8] SD4.1 The student demonstrates an understanding of the theories regarding the origin and evolution of the universe by creating models of the solar system illustrating size, location/position, composition, moons/rings, and conditions.

Math

- [6] MEA-2 The student demonstrates understanding of measurable attributes by identifying equivalent measures within systems.

English

- length (inches, feet, yards, miles)
- weight (ounces, pounds, [tons L])
- volume (fluid ounces, cups, pints, quarts, gallons)

Metric

- length (millimeters, centimeters, meters, kilometers)
- volume (milliliters, liters) (M2.2.2)

- [6] MEA-7 The student demonstrates ability to use measurement techniques by measuring length to the nearest 1/8 of an inch or nearest millimeter (M2.2.1).
- [8] MEA-1 The student demonstrates understanding of measurable attributes by converting measurements within the same system (English or metric) (M2.3.2).
- [7] PS-5 The student demonstrates the ability to apply mathematical skills and processes across the content strands by using real-world contexts such as science, humanities, peers, and community (M10.3.1 & M10.3.2).
- [8] PS-5 The student demonstrates the ability to apply mathematical skills and processes across the content strands by using real-world contexts such as science, humanities, peers, community, and careers (M10.3.1 & M10.4.2).

Search Terms:

- sun
- pinhole camera
- diameter
- mathematics

