SUMMARY:

This OER explores the basic operations of a Sundial. It contains both an activity as well as resources for further exploration. It is a product of the OU Academy of the Lynx, developed in conjunction with the Galileo's World Exhibition at the University of Oklahoma.

LEARNING GOALS:

• Provide a basic 5 minute activity with a Sundial, as well as digital resources for further exploration.

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Introduction Sundial Activity

** The only supplies necessary for this activity is a sundial **

1. Fold up the **gnomon** so that it is perpendicular to the dial.
2. Fold up the curved **latitude scale** so that it is perpendicular to the dial.
3. Tilt the dial so that it indicates the **current latitude** (35°N) on the latitude scale. When moved into this position, the angle between the horizontal platform and the gnomon itself should be equal to one’s latitude on Earth. The latitude of Norman is 35°N.
4. Slide the mechanism to release the **compass** so that it moves freely.
5. Position the dial so that the **gnomon points due south**. “West London” will be on the south side; the mark on the dial for “XII” (noon) will be on the north side.
6. Read the **time** on the dial by the shadow of the top edge of the gnomon.
7. From April to October add 1 hour to obtain Daylight Savings Time (DST) for Oklahoma and other areas that adopt DST. Remember that DST is one hour later than the Standard time the sundial indicates.

Download: Activity Handout

Historical Background for the Sundial
A sundial is a device used to determine the time by using a light spot or shadow cast in relation to a scale. It is one of the oldest known instruments used to tell time. During the 15th and 16th centuries, the Printing Revolution transformed every field of science in part because of a more widespread use of images. But images were not the only visual components of books. As early as 1476, books became instruments, combining paper and metal in “volveles,” circular calculating wheels, and even in portable sundials.

This *Calendarium* by Regiomontanus, published in Venice by Erhard Ratdolt, is the earliest work to contain a date on the first page. See high-quality images here, [https://galileo.ou.edu/exhibits/astronomical-calendar-1476](https://galileo.ou.edu/exhibits/astronomical-calendar-1476).

Bernardino Baldi, a celebrated Italian mathematician, studied during the 1570s with Federico Commandino, and later with Guidobaldo del Monte, one of Galileo’s teachers. Baldi produced a never-published treatise on sundials in 1592. It was rediscovered in the 19th century, and contains innovative depictions of sundials. See high-quality representations here, [https://galileo.ou.edu/exhibits/innovative-sundials](https://galileo.ou.edu/exhibits/innovative-sundials).

**Further OER's on Sundials**

Use the following OER's to further explore the *Galileo's World* exhibition.

- Galileo's World website, [galileo.ou.edu](http://galileo.ou.edu).