Praxis "Making Science Fun"

Astrolabe, Part 1

How do you measure the location of things in the night sky; aka making an astrolabe? An astrolabe (pronounced AS'-tro-layb) is a device used for measuring altitude, including the height of objects in the sky. This activity covers the construction of the astrolabe.

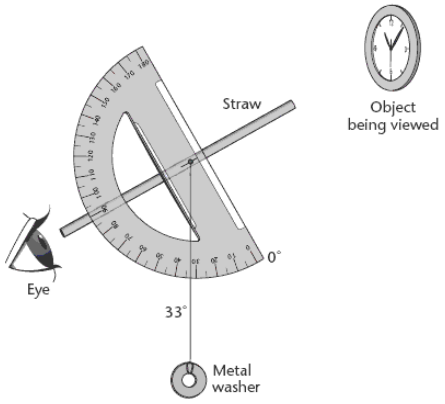

FIGURE 16.3. Sighting with an Astrolabe

Materials:

- protractor
- 30 cm string
- washer
- straw
- tape

Procedure: (Remember to be sure to have your parent's permission and they have the time to watch and help you.)

- Tape the straw to the protractor so that it is at right angles to the flat edge of the protractor and goes over the 90 degree mark on the protractor.
- Tie the string to the middle of the protractor where the protractor and straw meet.Tape it in place.
- Tie the washer to the other end of the string. You've built an astrolabe.
- You use the astrolabe to determine the height of things by measuring the angle from the ground to the top object being measured. Hold the astrolabe so that the string moves freely.
- Look through the straw at the top of buildings or trees.
- Holding the astrolabe as still as possible have someone read the measurement of the angle where the string crosses the rounded edge of the astrolabe. You have just taken your first angular height measurement.
- Try measuring the heights of various objects.
- We'll do more activities with this astrolabe next week.

History:
The astrolabe was invented in Greece either by Hipparchus, a 2nd century B.C. astronomer, or Apollonius of Perga, a 3rd century B.C. mathematician. For many centuries it was used by both astronomers and navigators, and especially by the 15th century explorers who used it to determine latitude, longitude, and time of day as they sailed to the new worlds and "discovered" Canada.

This experiment is based on our "Astronomy and Sky Science" Learning Kit. Our teaching kits are loaned out FREE to provide classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering to speak to a class about any one of our Science learning kits described on our website.

On January 30th, Praxis will be hosting Operation Minerva, a conference for grade 9 girls, that promotes Science, Technology, Engineering and Mathematical (STEM) based careers where students job shadow and attend workshops. Please see our website for more details. If you are a business or organization who wishes to support this conference, please contact us.

Lorne Cooper, Regional Executive Director

PRAXIS, "Making Science Fun". Contact Praxis at praxis@praxismh.ca, www.praxismh.ca, Tweet or follow us @PraxisMedHat, or friend us on Facebook. Address: c/o 200 7th Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.