

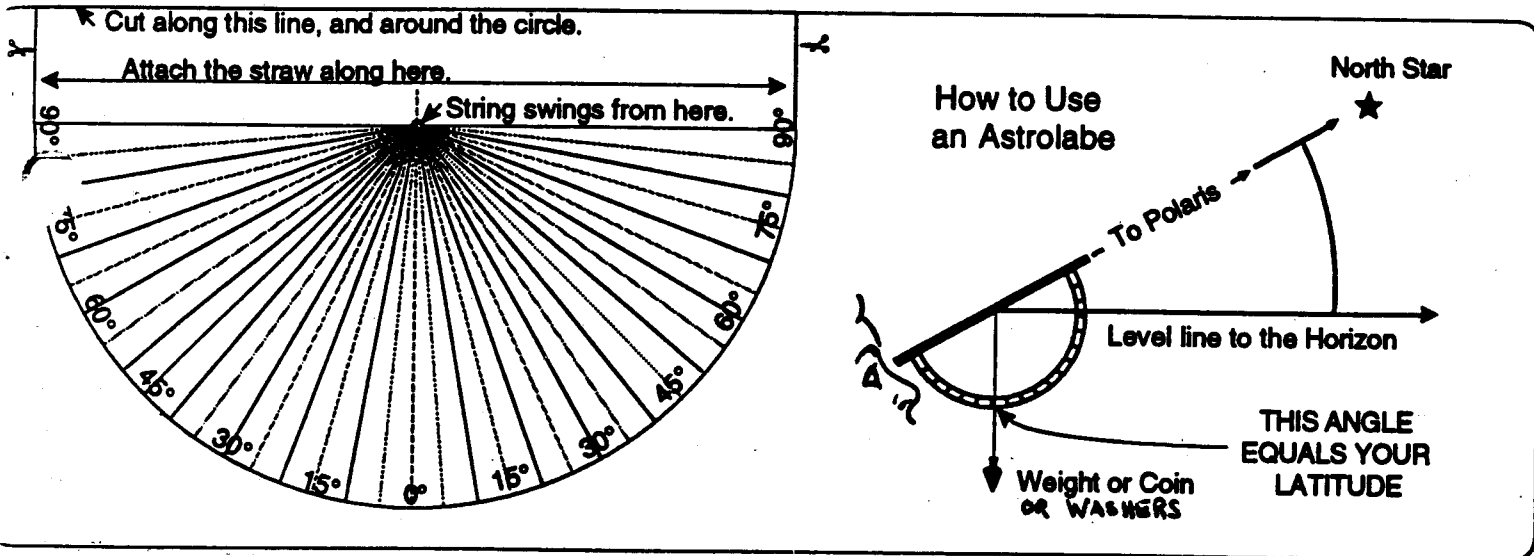
Materials: Soda Straw Cardboard or File folder
Coin or Small Weight Masking Tape and/or Glue String Scissors

Objective: To show your parent or guardian how to determine your latitude, without the use of any communication devices or printed materials (maps, reference books, etc.).

Procedure:

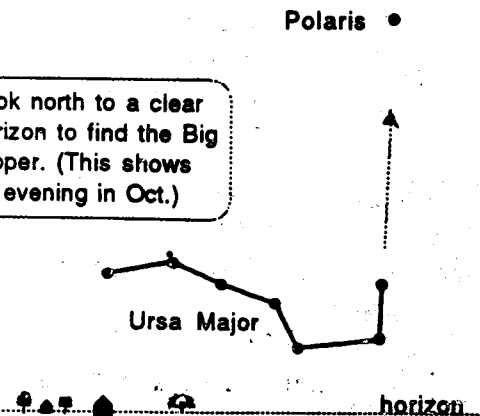
The diagrams below show you how to construct and use an astrolabe. An astrolabe is a device to measure the angular altitude of any point in the sky. You may either make this device following the steps below, or you may just explain to the adult how it is made and used.

- A. Cut out the protractor below and paste it to a sheet of thin cardboard.
- B. Attach a coin or weight to a piece of string and hang it so that it pivots from the place labeled "String swings from here" at the center of the paper protractor.
- C. Attach a drinking straw along the flat side with tape.
- D. Outside at night, use the "pointer stars" at the end of the Big Dipper to find Polaris.
- E. Look through or along the straw pointed to Polaris as shown in the right diagram.
- F. Have the adult or a second person find the latitude by reading the angle along the string.



The diagram to the left shows you how to use the Big Dipper to find the North Star. (It will be low in the northern sky.)

Look north to a clear horizon to find the Big Dipper. (This shows an evening in Oct.)



Extensions (Optional):

1. Explain to the adult how to determine your longitude with a comparable procedure.
2. Use this device to measure the altitude of the noon sun.
WARNING: Do not look directly at the sun!
Find another way to point it at the sun.

My student, _____ has shown me how to determine our latitude. (Signed) _____