

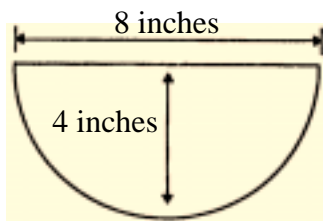
Name \_\_\_\_\_

## MAKING AN ASTROLABE

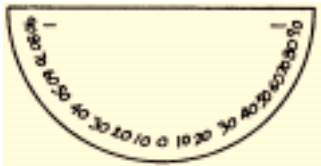
During their voyages, Spanish sailors used simple instruments and knowledge of the sun and stars to guide them. Follow these steps and you'll be able to determine latitude the same way.

### Directions

1. Cut out a cardboard semicircle with the measurements shown.



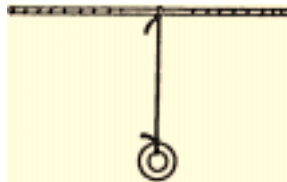
2. With a protractor as your guide, turn your semicircle into a protractor by writing the number and degree markings shown. Don't write within the top 1/2 inch of the cardboard.



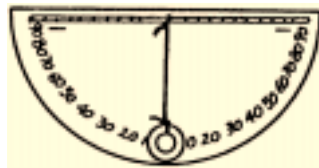
3. Tie one end of your string around the center of your straw.



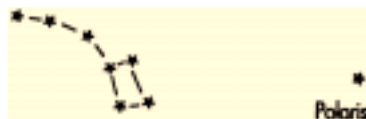
4. Tie the weight to the other end of the string.



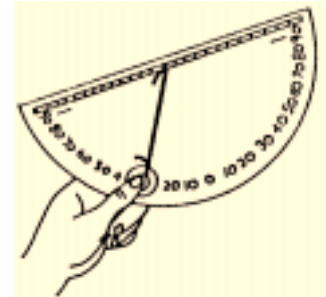
5. Glue your straw just above the 90° marks.



6. On a clear night, take your astrolabe outside. Face north (get your bearings from the western part of the sky where the sun sets). Look for the two stars in the Big Dipper farthest from the handle. They point to Polaris, the last star in the Little Dipper's handle.



7. Sight Polaris through one end of the straw. Without moving the straw, pinch the end of the string against the protractor.



8. Return to a lighted area to read the degrees indicated on your astrolabe. Use an atlas to determine the approximate latitude of your location. What do you notice about your astrolabe reading and your latitude as shown in the atlas?

**Materials:** cardboard, a soda straw, a 12-inch piece of string, a weight (heavy paper clip, or metal washer), protractor, glue, scissors, fine-point marker, atlas.