



SHADOWS

Here, There and Everywhere

by Ron and Nancy Goor

We are all fascinated by shadows, even sometimes scared by them, I can remember as a child pushing my sister up the stairs ahead of me. I have often wondered when young children realize that they can't see their shadows at twelve noon and why they think this is true.

People began using sundials over 3000 years ago. A sundial is one of the oldest instruments used to measure time; It "tells time" by measuring the angle of the shadows cast by the sun.

Sundials have two parts; an upright portion called a gnomon (NO-mon) and a base. The base can be divided into twelve equal portions representing the hours in a day. When the sun hits the gnomon, it casts its shadow on the base. As the sun moves across the sky from east to west, its shadow will fall on or between the hours. Sundials will always tell local time, not daylight saving time. Before using outside, sundials must always be oriented so that the vertical edge of the gnomon points north.

MATERIALS: sundial pattern, cardboard, scissors, stapler, compass, glue

ACTIVITY: Glue sundial base on cardboard. Cut out and assemble sundial. On a sunny day, take sundial outside and using your compass place your sundial correctly on the ground in the sun. Trace the shadow of the sun on your base and record the time of day. It is probably easiest to begin this activity on the hour. For the rest of the day, go back to your sundial on the hour and draw the sun's shadow. Now, can you draw the remaining hours of the day?

SOURCE: Ralph Yulo, CSEAC 1989.

WEBSITE: www.pekin.net/sundial/index.html This website takes you to Pekin, Illinois so that you can observe the World's Greatest Sundial. It can be used to predict the point of sunrise or sunset to locate the North Star or the constellations.

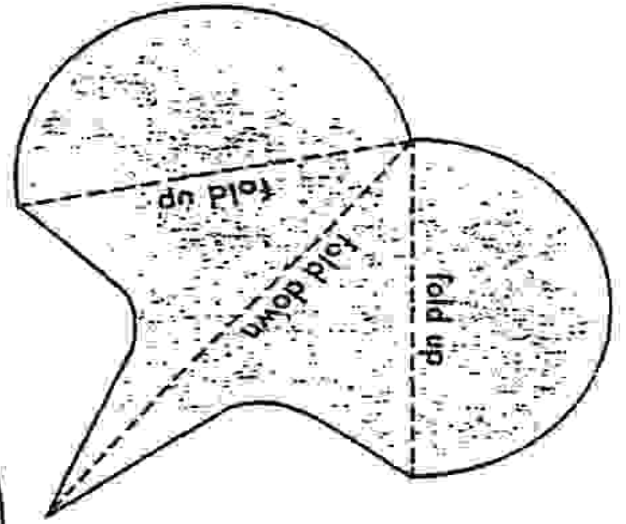
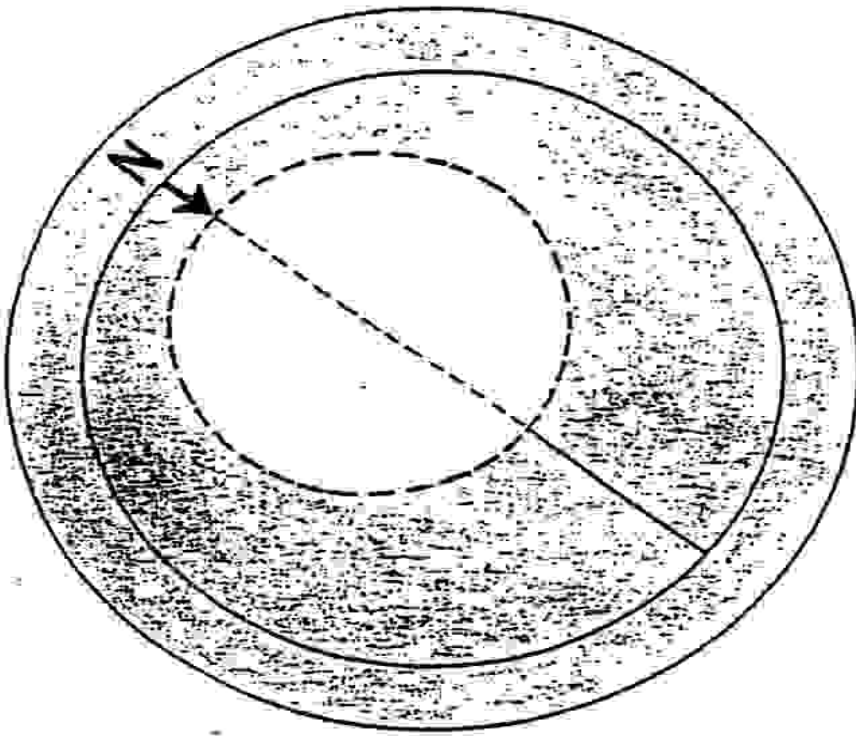
STANDARDS:

BSL: 1.1, 1.3, 1.5, 2.2, 4.9, 6.1, 8.3, 9.5, 11.2, 11.4, 12.1, 12.2, 12.3, 12.4, 12.9

NCTM: 1a, 1b, 2a, 3b, 9b

SCS: A1, B2, B3, D2, H2, H3

Goor, Nancy and Ron. Shadows, Here, There, and Everywhere. Thomas Y. Crowell, 1981. ISBN#0690014322.



sundial

