I, COLUMBUS MY JOURNAL
1492-1493
Edited by
Peter and Connie Roop

Try reading this book aloud to your students every day from the beginning of school until Columbus Day. At the same time, plant a sweet potato and a regular potato in two jars of water and watch their root systems develop. Potatoes, native to South America, and corn, native to North America, were both introduced to Europe during the time of Columbus.

How did Columbus find his way? He sailed west and used the position of the North Star as a guide (see p. 26 of the journal). He probably also used an astrolabe and a compass.

An astrolabe could be the oldest scientific instrument because it is believed to have been made by the Greek Hipparchus around 150 B.C., and it is still used today. Seamen used it until the middle of the 18th century to determine latitude.

A compass tells us where the direction north is because it contains a magnetized needle whose north-seeking pole is affected by the earth's magnetic field and points in the direction of the north magnetic pole. It will always point to the north unless it is brought near magnetic materials or a magnet; both of these will affect the magnet's position.

MATERIALS: compass, astrolabe pattern, thread, straw, 3 pennies, cardboard, steel sewing needle, slice of cork, strong magnet, glass, china, or aluminum dish filled with water, teaspoon of detergent

ACTIVITIES: Make astrolabe (see attached sheet). Make floating compass by magnetizing a steel sewing needle by stroking it 20 times in one direction only with one pole of a strong magnet. Cut a groove across the top of a round 1/2 inch piece of cork. Put needle in cork and place it in dish of water containing detergent. The needle will assume a north-south position.

TEACHER NOTES: My good friend Dan O'Hara carried one of these astrolabes with him as he crossed the Atlantic from the Canary Islands to the Caribbean. He reported that it worked just as Columbus described in his journal!

STANDARDS:
BSL: 1.1, 1.3, 1.7, 9.5, 9.7, 11.2, 12.5
NCTM: 4d
SCS: A1, B1, D2, E3, H2, H3, H4

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Directions for Astrolabe

1. Paste pattern on a piece of cardboard. Cut out!
2. Tie piece of heavy thread(30 cm) around center of straight edge.
3. Tape straw evenly to straight edge. Tie small weight (suggestion - tape 3 pennies together) to loose end of string.
4. To use as an instrument, find Polaris, the North Star. Point the straw at Polaris and locate the star through the end of the straw. Have someone "read" the degree that the string falls on. This is the latitude of your position on land or water.