

THE ANCIENT HOBBYIST

HORIZONTAL SUNDIAL

The sun dial is one of the oldest time keepers in known history. Quick and easy to make, the skill came with calibrating the device. The only thing it required was the sun.... Something that ancient Greece and Rome had plenty of.

MATERIALS

- CARD OR PLYWOOD OR MDF OR METAL
- PROTRACTOR
- COMPASS
- CRAFT KNIFE
- SAW
- TAPE
- GLUE

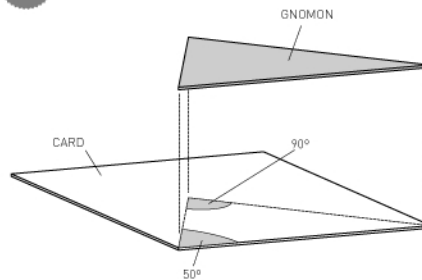
INSTRUCTIONS

1



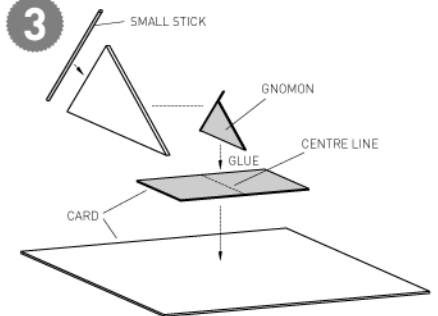
DETERMINE LOCAL LATITUDE (FROM MAPS/ATLAS/INTERNET).

2



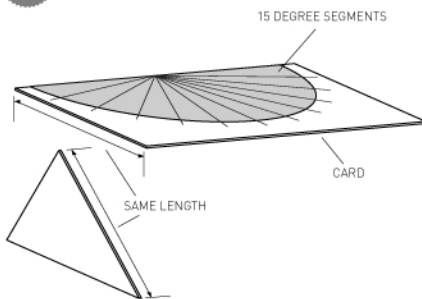
MARK OUT TRIANGLE ON A PIECE OF CARD ABOUT 6 INCHES SQUARE. THIS WILL BE THE 'STYLE' OR 'GNOMON' - THE POINTER. IF FOR EXAMPLE THE LATITUDE IN YOUR LOCATION IS 50DEGREES30N THEN MARK THIS USING A PROTRACTOR AND CUT IT OUT.

3



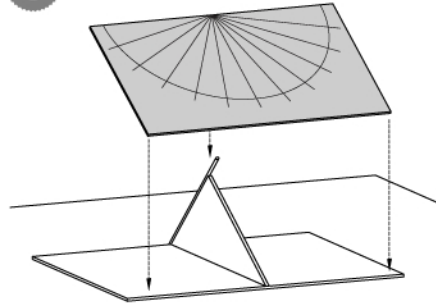
GLUE SMALL STICK TO BACK OF GNOMON, THEN PLACE ON THE CENTRE-LINE OF A PIECE OF CARD ROUGHLY THE SAME DEPTH AS THE GNOMON, WHICH WILL BECOME BASE OF THE SUNDIAL. TACK IT TEMPORARILY WITH GLUE OR TAPE, THEN PLACE THIS ON A LARGER PIECE OF PAPER OR CARD.

4



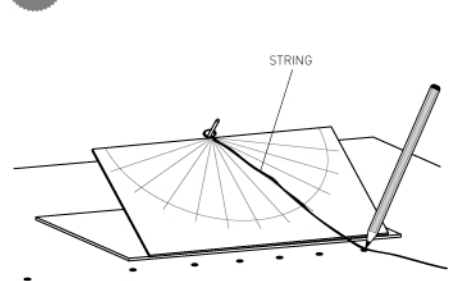
CUT OUT A RECTANGLE OF CARD THE SAME WIDTH AS THE HEIGHT OF THE GNOMON, DRAW ON A SEMI-CIRCLE WITH COMPASS AND DIVIDE THIS INTO 12X15 DEGREE SEGMENTS USING A PROTRACTOR.

5



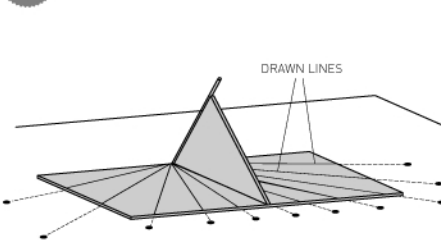
ATTACH THIS TO THE FRONT OF THE GNOMON WITH TAPE AS BELOW.

6



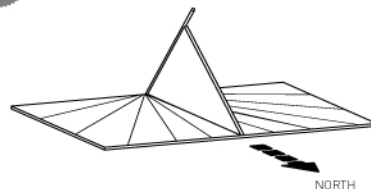
THEN WITH A PIECE OF STRING, EXTEND THE SEGMENT LINES UNTIL THEY MEET THE PAPER.

7



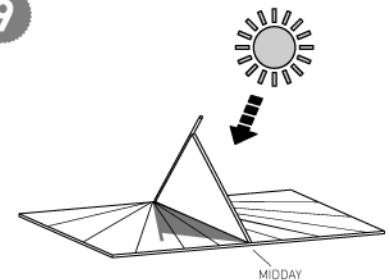
REMOVE FRONT CARD AND DRAW-IN LINES FROM THE DOTS TO THE POINT OF GNOMON. NB IT MAY NOT BE POSSIBLE TO PROJECT ALL THE LINES. SOME MAY HAVE TO BE DRAWN BY EXPERIMENT WHEN DIAL IS SITED.

8



THE GNOMON MAY NOW BE GLUED ON PERMANENTLY AND THE ONLY REMAINING TASK IS TO ORIENT THE DIAL ACCURATELY WITH THE GNOMON POINT FACING TRUE NORTH. THIS CAN BE DONE WITH A MAGNETIC COMPASS BUT AS MAGNETIC NORTH IS NOT THE SAME AS TRUE NORTH A MORE ACCURATE METHOD IS TO USE A SIGHTING OF THE 'POLE' STAR AT NIGHT OR THE SHADOW METHOD AS BELOW.

9



PLACE IN STRONG SUNLIGHT AND MARK THE TIP OF THE SHADOW EVERY QUARTER OF AN HOUR FOR 2 HOURS EITHER SIDE OF NOON. JOIN THESE DOTS TO FORM A SMOOTH CURVE AND NORTH WILL BE THE POSITION OF THE STICK AND SOUTH THE NEAREST POINT ON THE CURVE. THIS METHOD IS QUITE ACCURATE.