

Sun & Shadows

Board Construction

The three **Shadow Boards** are made from a single 4' x 8' sheet of 5/8" AC plywood, cut into equal thirds (4' x 2'-8"). After cutting, sand the cut edges lightly and coat both sides and all the edges with any brand of satin finish urethane or clear seal. I chose to use different surface decorations as a ploy to get the students interested in the project (we initially worked with 10th grade Earth Science students who thought they didn't want to learn any more about sun and shadow). The grid, the rays, and the compass rose all have the north arrow and blocking object located at the same point (centered east to west, with the locations 70 cm apart and the hole about 11 cm north of the edge). The apparent differences between the boards provide a rationale for asking students to do multiple sets of measurements, so I think it's worth the extra time to make the boards different looking and interesting. The lines give a way to correctly locate the taped paper back on the boards on other occasions, so they do have a function. I marked all my lines with a pencil before using a permanent marker. It would perhaps add some longevity to add another coat of urethane on top-- the first coat was necessary so the marker would not run.

The 3 **Blocking Objects** on the *ACASE* boards are made from a single piece of nominal 2" x 2" stake with a pencil point end. You might experiment with a variety of heights, thicknesses, and top conditions-- certainly you may need shorter Blocking Objects if you are doing the measurements at the very beginning or end of the day in winter, just to keep the shadows on the boards. I drilled a 1/4" hole through the board for the Tee-nut and up 1-1/2" into each blocking object for the 2" long 1/4- 20 threaded stud. This enables the blocking objects to be exchanged, and makes storage easier.

Rebekah Rice