Build an Anemometer

Purpose: Build a model of an instrument to measure the relative speed of wind. The model will measure wind speed in revolutions per minute (RPMs). Calibrate the RPMs for "Low", "Medium", and “High" settings of a 20" box fan, by holding the model 1.5 meters in front of the fan at each speed and record the number of RPMs for each fan speed; these data provide a baseline for comparing wind speeds recorded outdoors.

Materials:

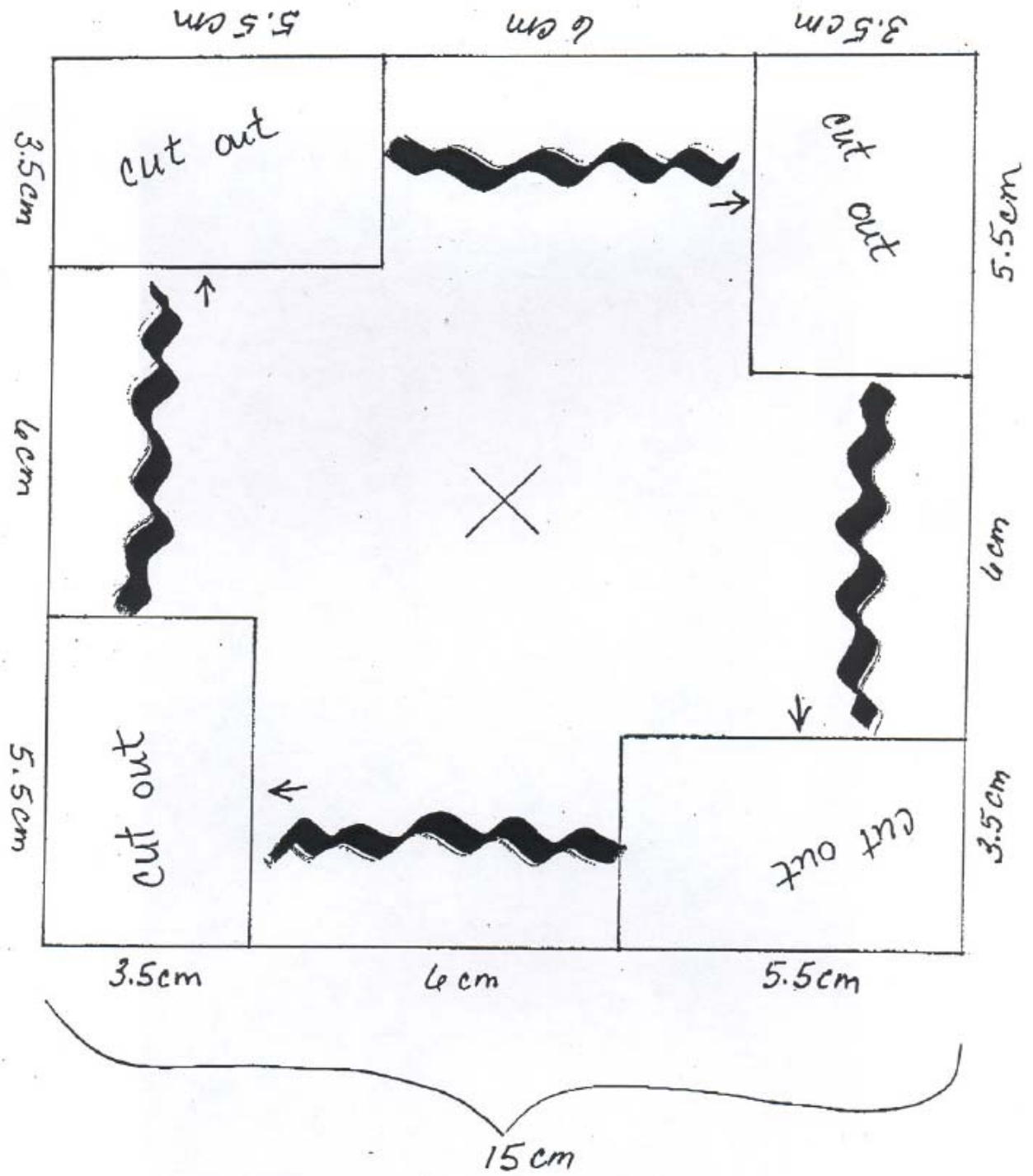
20" box fan	15cmx 15cmcardboard square (back of a tablet)
Scissors	4 identical paper cups (4 oz. or smaller)
Meter stick	Stopwatch or clock with a second hand
Duct tape	glue
Pattern	sharpened pencil

2 straws of different diameters (one wider than the other)

Procedure:

1. Cut out the l5cm x 15cm pattern and glue it onto a piece of lightweight cardboard, such as is found as the back of a writing tablet; both cardboard and paper pattern should be l5 x 15cm.
2. Cutaway the rectangles at each comer (3.Scmx 5.5cm) and discard them.
3. Carefully make a hole in the center (shown by the “X") with a sharpened pencil. The hole should be large enough for the smaller diameter straw to fit easily through it.
4. Take the straw with the smaller diameter and cut a 1.5 to 2cm slit on either side at one end; try to make the cuts directly across from each other
5. Push these cut ends of the straw through the hole in the cardboard and spread the cut sides open. Tape them out in a straight line, so that the straw holds the cardboard platform horizontally.
6. Place a moderate amount of glue on the pattern, along the wavy lines’ locations. Allow the glue to get a bit tacky, and then add the paper cups.
7. All the cups should face the same direction, in other words, place the open end of each cup in the same direction as the arrow near it on the pattern.
8. Place a piece of colored duct tape on t~ bottom of one cup; this is the cup to count as the model makes revolutions.
9. Allow to dry thoroughly. " .
10. Place the smaller diameter straw (extending ftom tbe base of the model) into the wider iameter straw. The model should now spin freely, holding the wider straw.
11. Calibrate the model (see above)

T**hanks to our JASON Project colleagues at the University of Texas at Brownsville/Texas Southmost College, for the instructions for this activity.**



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