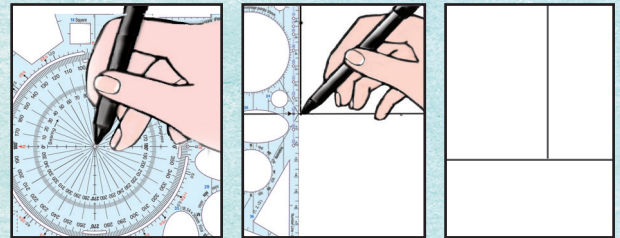


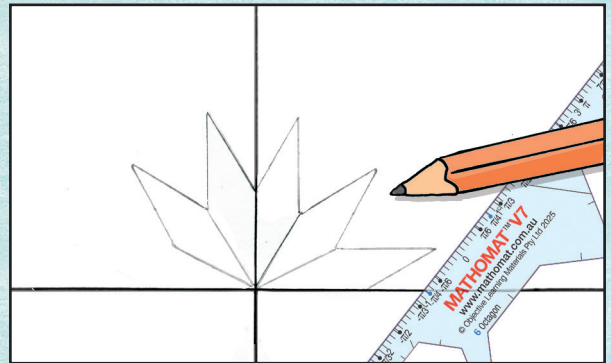
Making a windmill angle tester

Follow these steps to make your own windmill angle tester:

Step 1 Using Mathomat as a guide mark up an A4 page with cross-hairs; use a pen.



Step 2 Carefully draw 12 thin rhombuses, shape 23, around the centre point. Be careful to keep three rhombuses inside each quarter of the cross-hairs. Use a pencil.

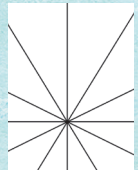


One thing about a windmill angle tester is that all of its angles are the same size.

But that isn't possible. See - the angles at the top look much bigger than the side angles - their lines are longer and there is more space between their lines.

OK, I can prove to you that its angles are all the same.

A lot of people find that the angles on their windmill angle tester look as though they are different sizes. So, on the next page, before we start testing angles, we are going to take time to prove to ourselves that all of our angle tester's angles are the same size.



What's this?

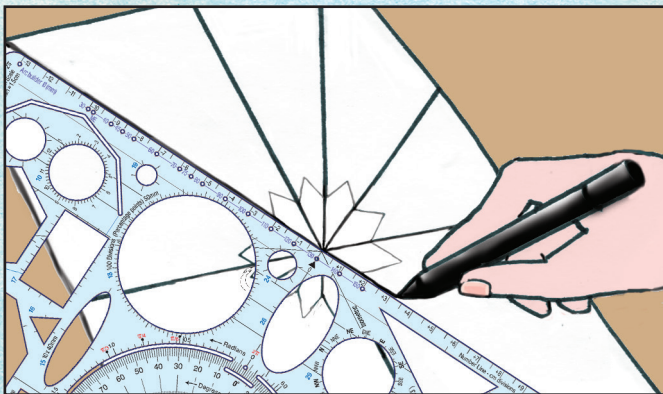
It's a windmill angle tester I made with my Mathomat V7.

It's very symmetrical.

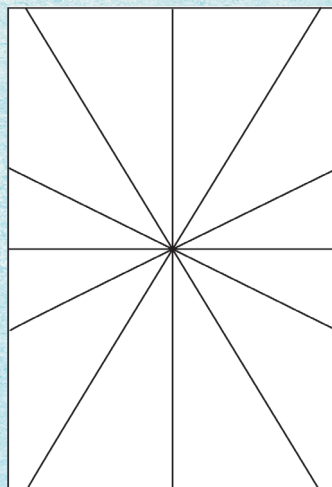
It's also very useful. You can print one out from the Mathomat site, but it's good to make your own to start.

Show me how to make one.

Step 3 Notice the pattern of lines between the sides of the rhombuses. Using Mathomat and a pen, extend these lines out so they touch the edge of the page.

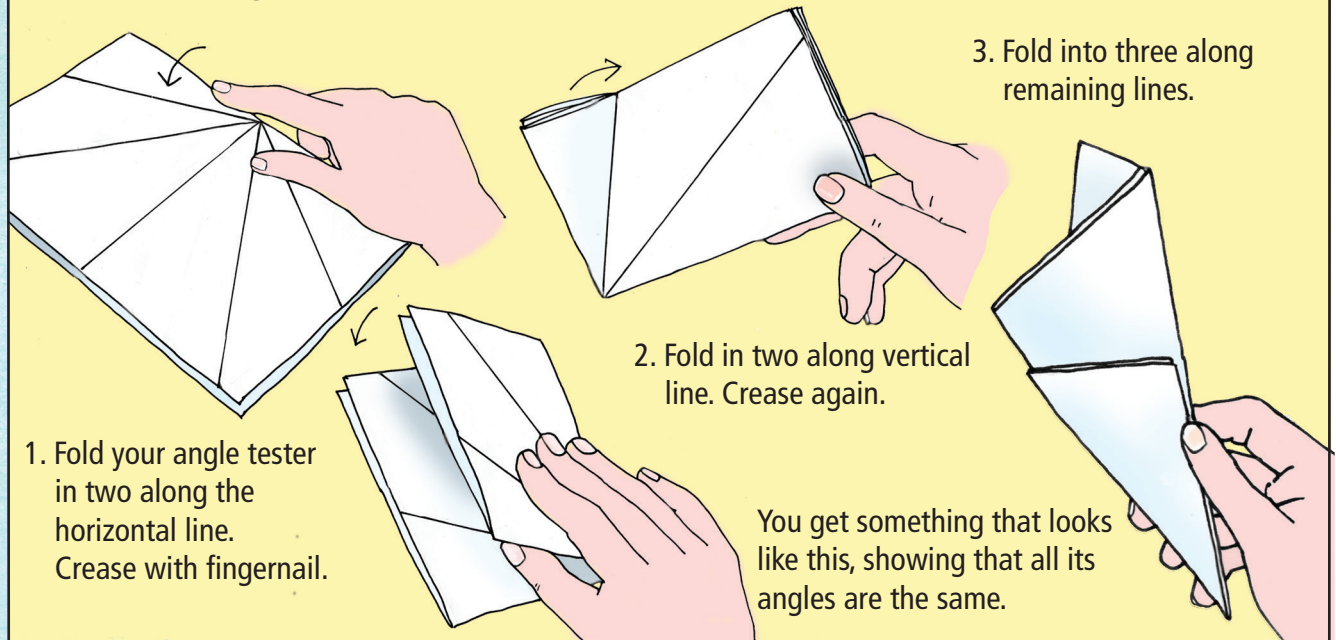


Step 4 Use an eraser to remove the 12 thin rhombuses drawn in pencil. Your finished windmill angle tester should look like this:



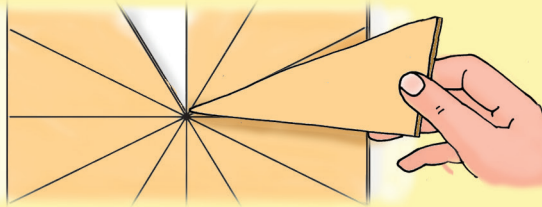
Proving that all angles on our windmill angle tester are the same size

Proof 1: folding You should make a new windmill angle tester for this proof.



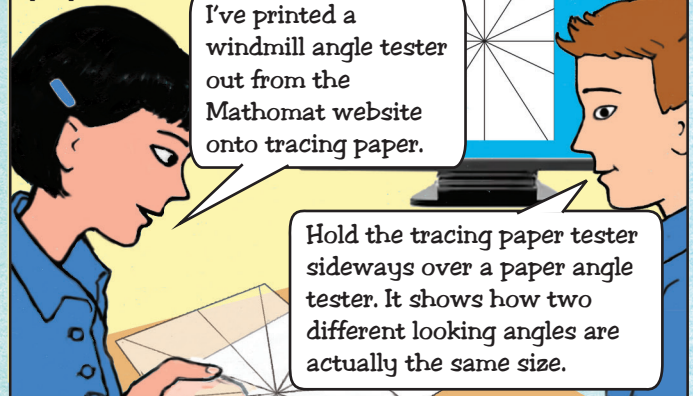
Proof 2: template

Make another windmill angle tester, this time using cardboard.

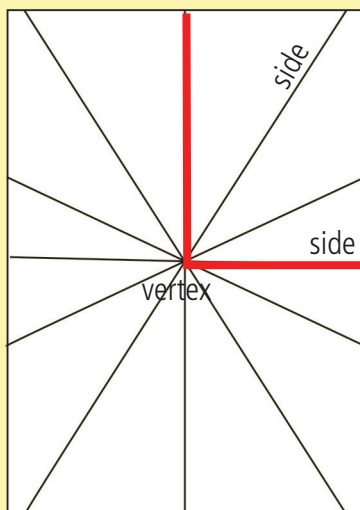


Cut an angle out and hold over another angle of the tester, proving they are the same size.

Proof 3: tracing paper



An angle has two sides and a vertex. Corner and angle mean the same thing.



The edges of the corner of this table top form a right angle. Use your Mathomat to draw two sides and vertex into the table top (just like on the angle tester picture).

