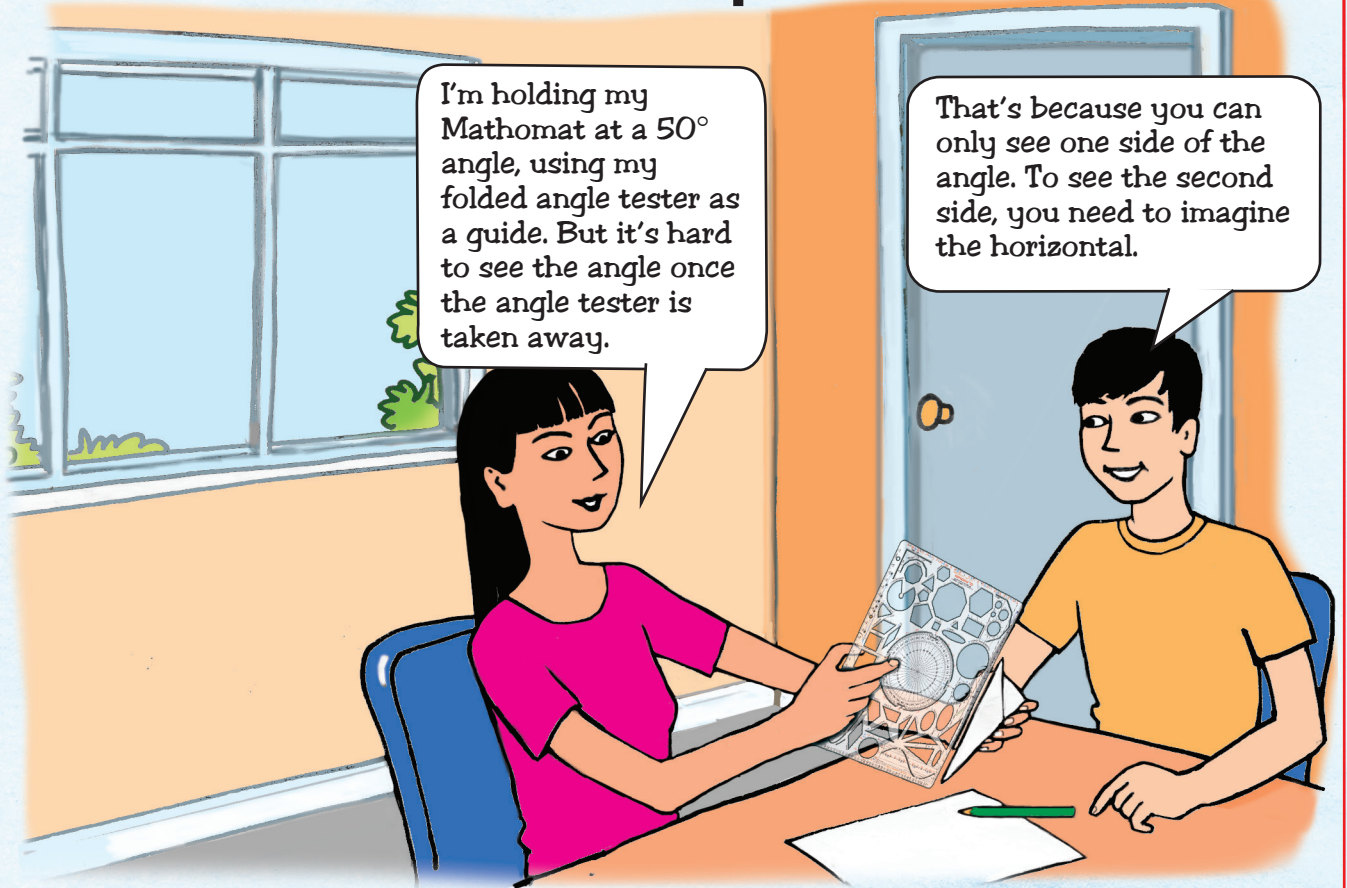


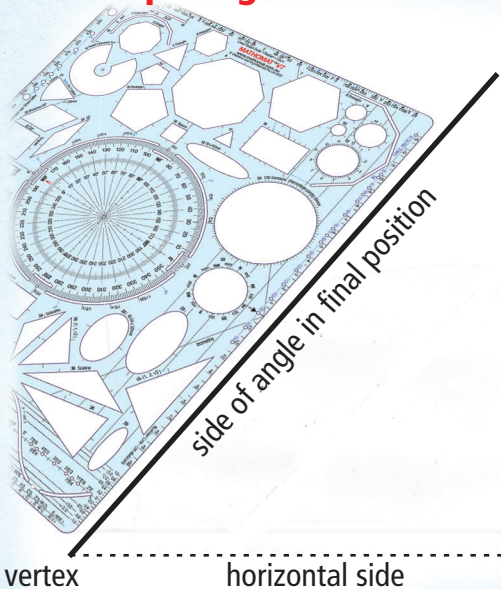
Skills sharpener activity 5: Drawing angles that are hard to see II: slopes



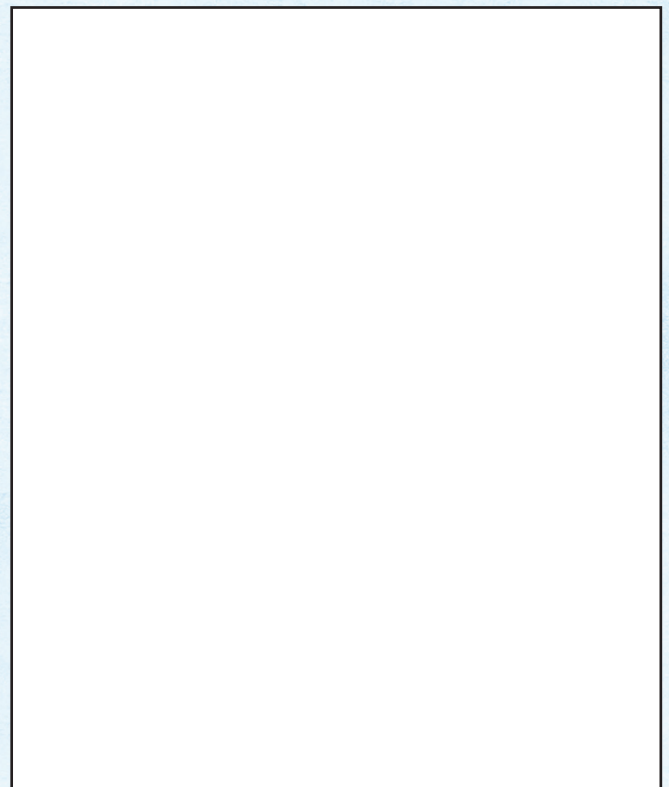
Ask a friend to hold a Mathomat template at a 50° angle (use your folded windmill angle tester as a guide, it's one and a half windmill angles big).

Draw the angle showing the 50° slope in the space below. You will need to imagine the initial horizontal side of the angle as you draw.

Luna's slope angle



You can only draw an angle when you know where both sides and the vertex are. For slope angles you usually have to imagine, or remember, the horizontal side.



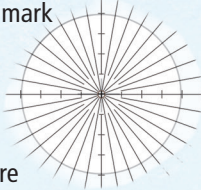
Skills sharpener activity 6: Drawing angles that are hard to see III: clocks



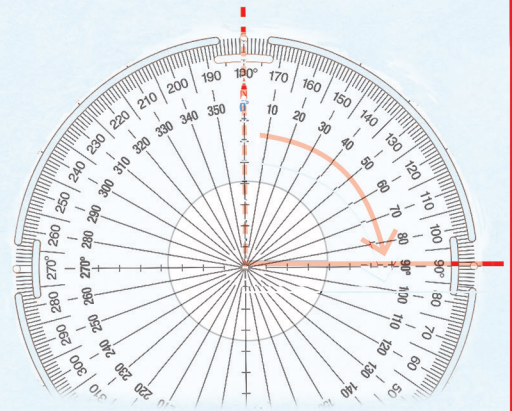
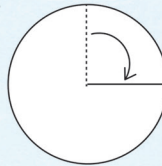
If we think of angle sides as the hour hand of a clock, we can use time to draw angles. To be able to draw the angle you need to know where both sides are, that means remembering the starting position for the hour hand.

Steps for drawing time angles using a Mathomat

Step 1: Draw and mark the centre of your clockface using shape 12 (in Mathomat V7) and the circle centre finder in the Mathomat protractor.



Step 2: Use the clockface in Mathomat to mark the starting position of the angle side and the final position of the angle side. Show direction with a curved arrow.



Step 3: Measure your clockface angle in a clockwise direction, using the protractor with the zero mark above the starting position of the angle side.

In the table below draw a clock face using your Mathomat. Mark its centre then draw in your clock angle. Work out how many hours and degrees in your angle. The first one is done for you.

Start time (12 hr clock)	Finish time (12 hr clock)	How many hours?	Draw the angle of turning using a Mathomat clockface	How many degrees?	What type of angle?
12:00	3:00	3		90°	<input type="checkbox"/> acute <input checked="" type="checkbox"/> right <input type="checkbox"/> obtuse <input type="checkbox"/> straight <input type="checkbox"/> reflex <input type="checkbox"/> full rotation
12:00	5:00				<input type="checkbox"/> acute <input type="checkbox"/> right <input type="checkbox"/> obtuse <input type="checkbox"/> straight <input type="checkbox"/> reflex <input type="checkbox"/> full rotation
2:00	6:00				<input type="checkbox"/> acute <input type="checkbox"/> right <input type="checkbox"/> obtuse <input type="checkbox"/> straight <input type="checkbox"/> reflex <input type="checkbox"/> full rotation

There are different ways of thinking about an angle, three possibilities are:

1. an amount of turning,
2. the gap left by that turning,
3. a fig., like a drawing on paper: two sides and a vertex.