

Lesson 8 Measuring angles in the classroom

Students use the windmill pattern as an angle tester to measure and record at least three different angles found in the classroom. Students record an acute, an obtuse and a right angle.

Main ideas

Measure angles by using an informal unit.

Copy angles by drawing, and labelling the size of the angle.

Outcomes

SGS2.2b Identifies, compares and describes angles in practical situations.

WMS2.3 Uses appropriate terminology to describe, and symbols to represent, mathematical ideas.

Notes

1. When students use the windmill angle tester to measure angles, some angles will be close to a whole number of windmill angles, but most will not. Students may need to approximate when recording, e.g. *between one and two windmill angles or a bit bigger than five windmill angles*. Students may also use fractions where appropriate, as in *a little more than 2 ¹/₂ windmill angles*.
2. Acute angles can range from zero, to just under three windmill angles. A right angle is exactly three windmill angles. Obtuse angles range from just over three to just under six windmill angles (reflex angles lie between six and twelve windmill angles).

Grouping

Step 1: whole-class explanation and discussion

Step 2: work in pairs or small groups

Step 3: report back to whole class.

Materials

bent straws

windmill sheets or transparencies
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pencils and paper



Step 1

Questioning

Discuss how the angles on the windmill sheet can be used as informal units to measure other angles.

Discuss strategies that students might use to copy and measure angles in the classroom in terms of *windmill* units.

Students may suggest:

take the windmill sheet or transparency to the object and lay over or into a corner

measure the angle with the folded windmill angle tester

measure the angle with a bent straw and then lay the straw on the windmill sheet.

Discuss the activity: students measure, draw and label at least three corners (including an acute, an obtuse and a right angle) in the classroom.

What have we learnt about angles?

How would I measure an angle?

How have we used the windmill angle tester to measure other angles?

Step 2

Check that students:

Have your students work in pairs or small groups to identify, measure, copy and label angles.

- use the angle tester to measure different angles in the classroom
- copy angles accurately
- measure and record the results
- can identify acute, obtuse and right angles.

Step 3

Discussion

Discuss students' responses and the range of angle sizes found.

Who had the smallest angle?

Who had the largest angle?

How big are these angles?

How many windmill angles fit into an acute angle?

How many windmill angles fit into an obtuse angle?