Can I calculate angles on a straight line and in a triangle?

Teaching guidance

Key vocabulary

straight line, angle, right angle, acute angle, obtuse angle, reflex angle
degree, whole turn, half turn, quarter turn
parallel, perpendicular, isosceles, equilateral, scalene, right-angled

Models and images

Explore with children that the angles of a triangle total 180°, by tearing off the three corners of a triangle and arranging them together to make a straight line.

$a = 90°$
$b = 45°$
$c = 45°$

$a = 18°$
$b = 27°$
$c = 135°$
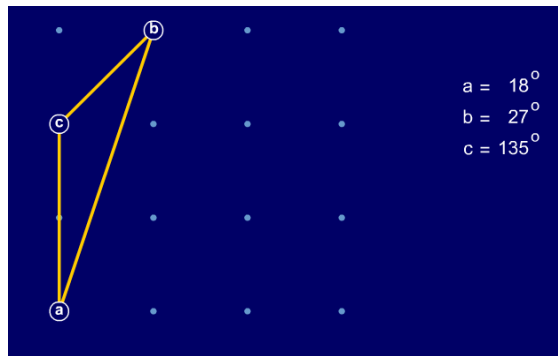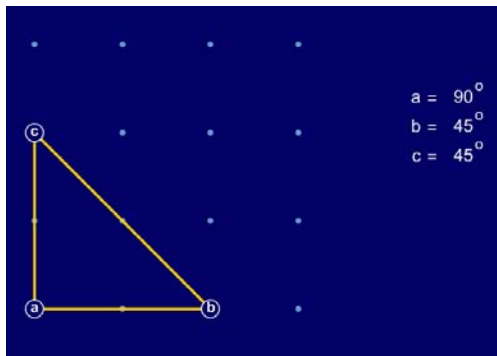
Fixing points ITP

Use the *Calculating angles* ITP to calculate unknown angles on a straight line.

$72°$
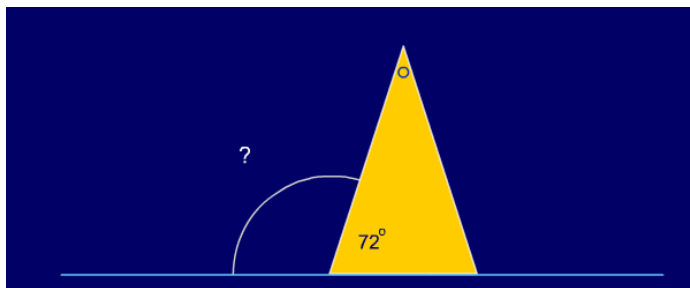
Calculating angles ITP

Teaching tips

- Ensure that children understand that 'calculate' does not mean 'measure'. (Children often measure an associated image, even if the instructions clearly say that it is not drawn to scale.)

- Rehearse and practise associated mental skills, for example, complements to 180.

- Ensure children fully appreciate that the angles in a straight line total 180°, through activities such as putting two right angles together.

- Explore the total of angles in a variety of triangles to help children reach the generalisation that the angles in a triangle always total 180°. This can be illustrated by tearing off the angles of a triangle and placing them together.

- Model how to annotate diagrams and encourage children to record extra information on their own work.
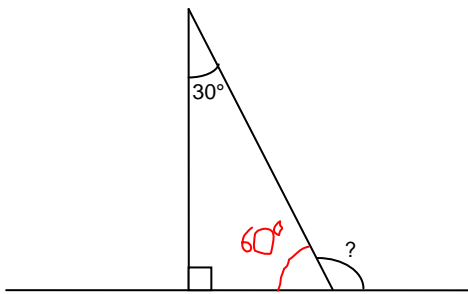
- Encourage children to check that any answers are reasonable.