Maths - Year 6

Geometry 1: 2D shapes and angles

## Key Vocabulary

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Turn	Move in a circular direction wholly or partly round an axis or point.
Angle	An amount of turn or rotation.
Degree	A unit to measure the size of a turn.
Clockwise/anti-clockwise	The same direction as the hands on a clock move/the opposite direction as the hands of a clock move.
Opposite angles	Angles that are opposite one another at a specific vertex and are created by two straight intersecting lines.
Supplementary angles	Angles that sum up to 180 degrees (180°).
Equilateral triangle	A triangle with all 3 sides of equal length.
Scalene triangle	A triangle that has 3 unequal sides.
Isosceles triangle	A triangle that has 2 equal sides.
Perimeter	The distance around a shape.
Quadrilateral	A polygon with 4 sides. (A polygon is a flat geometric shape with straight sides.)
Bisect	To split something into equal halves.
Dissect	Partition a shape into smaller pieces.

Mathematical Skills

- Explain that the equal angles in an isosceles triangle are opposite the equal sides, and that the smallest angle is opposite the shortest side.
- Explain that the opposite sides of a parallelogram must be equal in length for both pairs to be parallel, and that opposite angles in a parallelogram are equal.
- Illustrate the properties of 2D shapes by adding symbols and labels to diagrams, e.g. with 'single' or 'double' angle symbols, or the conventional symbols for parallel lines.
- Use their knowledge that vertically opposite angles are equal to find missing angles.
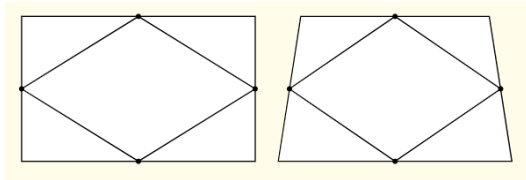
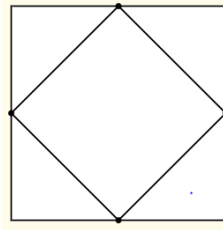## Mathematical Methods

- Constructing triangles.
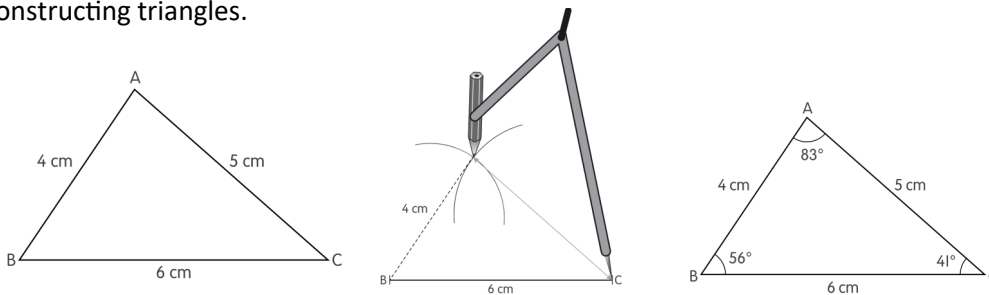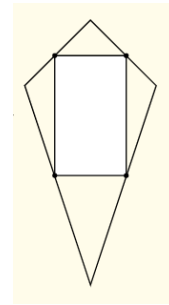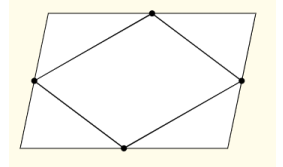
- Exploring triangles.

Isosceles   Equilateral   Right-angled
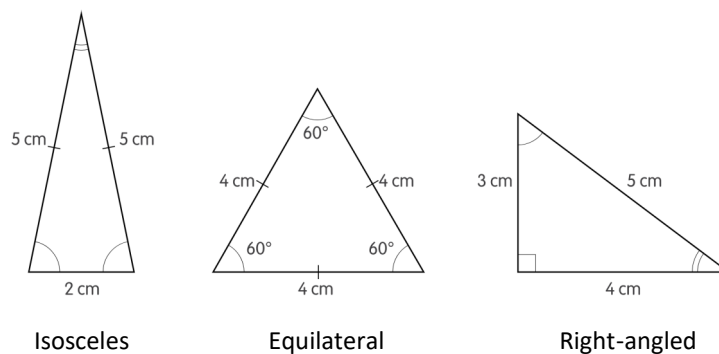
- Exploring quadrilaterals.

Rhombus

Square

Kite
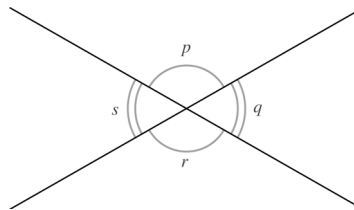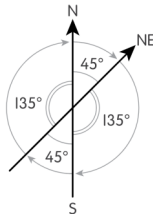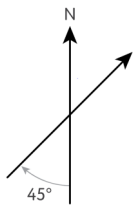
Parallelogram

- Exploring angles in regular polygons.
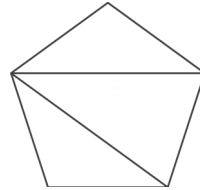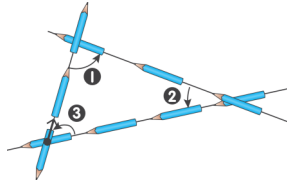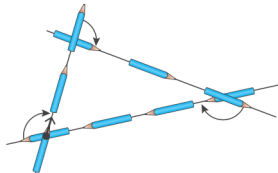
Shape	Number of sides or angles	Sum of interior angles	Size of each angle
equilateral triangle	3	180°	60°
square	4	360°	90°
regular pentagon	5	540°	108°
regular hexagon	6	720°	120°
regular heptagon	7	900°	128·57° (to 2 d.p.)

- Finding missing angles—introducing vertically opposite angles.

N

N
45°
135°
135°
45°
S
NE

p
s q
r

b
c
$a = 70°$
d
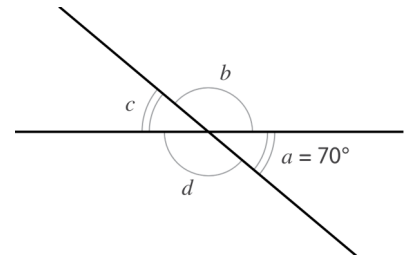
Can you..?

- Can you construct a right-angled isosceles triangle whose equal sides are 8·5 cm in length?

- Can you work out the size of angle a?

a

45°
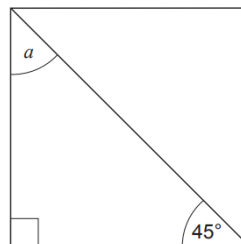
- Can you identify angles b, c and d?

b
c
$a = 28°$
d