Year Five and Six: Block B: Unit 2: What angles?

Learning Objectives

Using and applying mathematics

- Explore patterns, properties and relationships and propose a general statement involving numbers or shapes; identify examples for which the statement is true or false (Year 5)
- Represent and interpret sequences, patterns and relationships involving numbers and shapes; suggest and test hypotheses; construct and use simple expressions and formulae in words then symbols (Year 6)

Understanding shape

- Identify, visualise and describe properties of rectangles, triangles, regular polygons and 3-D solids; use knowledge of properties to draw 2-D shapes and identify and draw nets of 3-D shapes (Year 5)
- Describe, identify and visualise parallel and perpendicular edges or faces; use these properties to classify 2-D shapes and 3-D solids (Year 6)
- Make and draw shapes with increasing accuracy and apply knowledge of their properties (Year 6)

Resources

Mini-whiteboards
3D shapes
Protractors
Coloured labels
Digital camera
Digit cards
Cardboard box
2D shapes
Tissue paper
School photographs

Vocabulary

Year 5
3-D, three-dimensional, vertex, vertices, face, edge, 2-D, two-dimensional, regular, irregular, polygon, side, parallel, perpendicular, angle, degree (), acute, obtuse, protractor, angle measurer, names of shapes, including equilateral triangle, isosceles triangle, scalene triangle, quadrilateral, octahedron

Year 6
parallel, perpendicular, regular, irregular, face, edge, vertex/vertices, polyhedron, dodecahedron, octahedron, tetrahedron, polygon, quadrilateral, rhombus, kite, parallelogram, trapezium, triangle, isosceles, equilateral, scalene, radius, diameter, circumference, intersecting, intersection, plane

Success Criteria

Year 5
I can investigate a general statement and say whether examples are true or false
I can say whether a triangle is equilateral, isosceles or scalene and explain how I know

Year 6
I can describe and explain sequences, patterns and relationships
I can make and draw shapes accurately

Curriculum Links

Design Technology – identify different types of angles used when designing products

ICT Activities

Graphics – draw designs of buildings and colour code types of angles

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	Mental/Oral Starter	**Shared Learning**	**Independent and Group Tasks**	**Plenary**
Monday	Year 5 (working with the teacher) Provide the children with a mini-whiteboard. Get them to write a sentence describing a 2D shape. Bring the group back together and get some children to read out their shape descriptions. Tell the rest of the group to identify the name of the shapes being described. Discuss with the group the specialist vocabulary they can use when describing shapes.	Draw a trapezium and a rectangle on the board. Get the children to identify the names of the shapes. Ask them to describe how the shapes are different from each other. Work with the class to write a sentence to describe each shape. Explain to the children that one way to tell the difference between shapes is by the size of the angles. Establish with the class that the rectangle has four 90 degree right angles. Get the children to identify the size of the angles in the trapezium. Remind the class that we call angles less than 90 degrees acute and angles between 90 and 180 degrees obtuse. Establish with the class that the trapezium has two acute and two obtuse right angles. Ask the children to try and spot examples of acute and obtuse angles around the classroom.	Year 5 activities Core/Extension Split the children into pairs and provide them with a set of coloured labels. Tell them to stick one type of coloured labels on examples of acute angles in the classroom and another type of coloured labels on examples of obtuse angles. Get the children to record in a table where they found examples of the two angles. Support Get the children to go out outside with a teaching assistant to identify examples of acute angles that they can find on the school building. Get the teaching assistant to take photographs of the angles to use on a classroom display.	Get some children to point to examples of angles in the classroom for the rest of the class to identify the type of angle.
	Year 6 (working with the teaching assistant) Display a selection of 3D shapes at the front of the group. Get the children to name each of the shapes. Ask them to describe how the shapes are different from each other. Ask some children to identify a property of one of the shapes. Get the rest of the children to match the property to one of the shapes at the front of the group.		Year 6 activities Core/Extension Split the children into pairs and provide them with a protractor. Get them to identify examples of acute and obtuse angles around the classroom by using the protractor. Tell the children to record in a table where they found examples of the two angles. Support Get the children to go out outside with a teaching assistant to identify examples of acute angles that they can find on the school building. Get the teaching assistant to take photographs of the angles to use on a classroom display.	