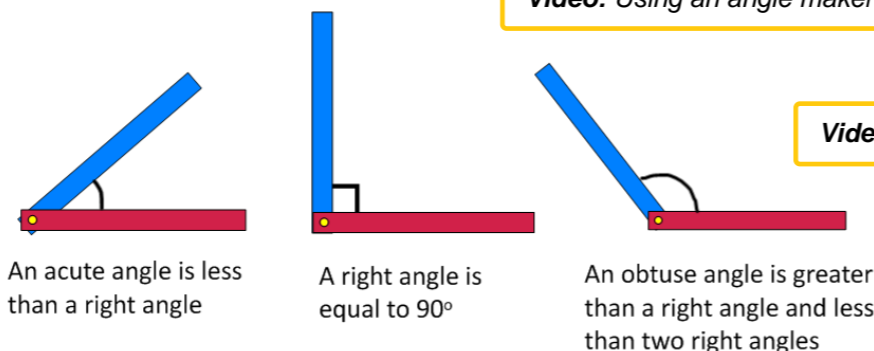


Year 3 Unit 10: Angles and shapes (3 weeks)

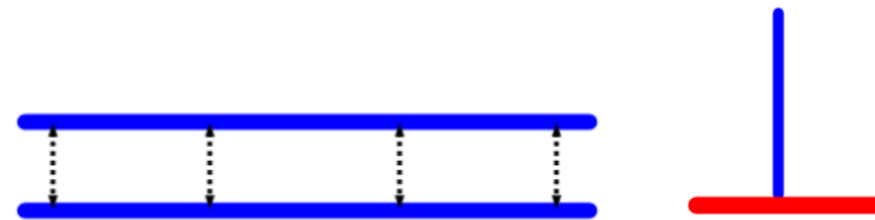
Before you start...

- What do pupils know about angles?
- What language do pupils use when describing turns?
- How confident are pupils at describing angles in shapes?
- How confident are pupils at describing angles as a turn?
- What shapes and their respective properties are pupils confident with?

Video: Using an angle maker



Video: What is a right-angle checker?



Angles in two ways

Angles can be thought about in two different ways. Angles can be thought of as objects like the corner of a book or a vertex of a triangle. A measure of how pointy something is. Angles can also be thought of as a measure of turn where movement is an important part of its meaning.

Developing understanding of angles

- L1 Use angles to describe turns and explore properties of shapes
- L2 Identify angles inside a 2-D shape
- L3 Recognise right angles and their relationship to quarter turns
- L4 Understand the terms 'acute' and 'obtuse'

Pupils begin by clarifying what an angle is and experience them as both as a measure of turn and as a property of shapes. They use an angle maker to create, identify and compare them before being introduced to the correct terminology of right, acute and obtuse. Right-angles are explored in detail to provide an anchor point for later lessons and find them in their environment, use this knowledge to understand the terms acute and obtuse.

- ? How will you support pupils in making the connection between angles as a measure of turns and angles as a property of shape?
- ? How does the concept of right angles link to other experiences in this unit? How do your choices now prepare learners for this?

Lessons 5, 9 and 15 are consolidation lessons but you may wish to consolidate at different points in the unit.

Identifying parallel and perpendicular lines

- L6 Use a right-angle checker to identify perpendicular lines
- L7 Draw perpendicular lines
- L8 Identify and explain parallel lines

Pupils are introduced to different line orientations and the vocabulary used to describe them. They identify perpendicular and parallel lines as line segments and within shapes. Using their knowledge of right angles, pupils then draw horizontal and vertical lines perpendicular or parallel to each other.

- ? What are typical examples of line segments which are parallel, perpendicular, horizontal and vertical? Unusual examples? Non-examples?

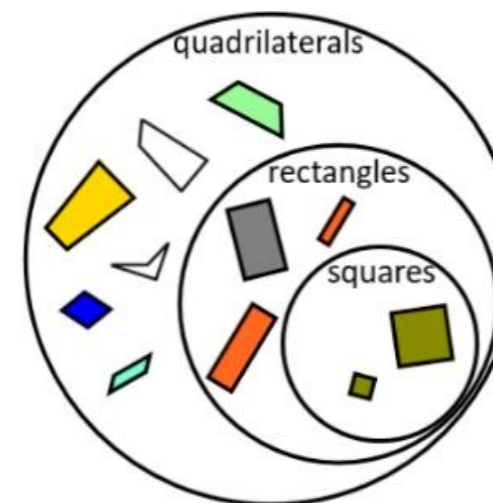
Perspective on angles

This [article](#) from Nrich provides an interesting perspective on measuring angles and provides some activities to challenge pupils.

Which of these are a line of symmetry?



Video: Symmetry – what is it?



Reasoning about symmetry

- L14 Identify and describe lines of symmetry in 2-D shapes

Pupils investigate lines of symmetry, spending time exploring these in 2-D shapes.

- ? How would you explain if something is symmetrical? What examples could you draw upon and how will you make the connections?
- ? How would you describe and clarify what a line of symmetry is? What language would you use?

Reasoning about 2-D and 3-D shapes.

- L10 Identify rectangles including squares
- L11 Create 2-D shapes and describe the properties of 2-D shapes
- L12 Draw a 2-D shapes and calculate the perimeter
- L13 Describe the properties of 3-D shapes

In lesson 10, the focus is on pupils developing their understanding of quadrilaterals with particular emphasis on rectangles (including squares). Pupils then move on to draw and create 2-D and 3-D shapes, describing their properties.

- ? What opportunities will you plan for all learners to communicate their mathematical ideas about 2-D and 3-D shapes?
- ? How will you encourage pupils to reflect on the types of thinking they have done about 2-D and 3-D shapes?