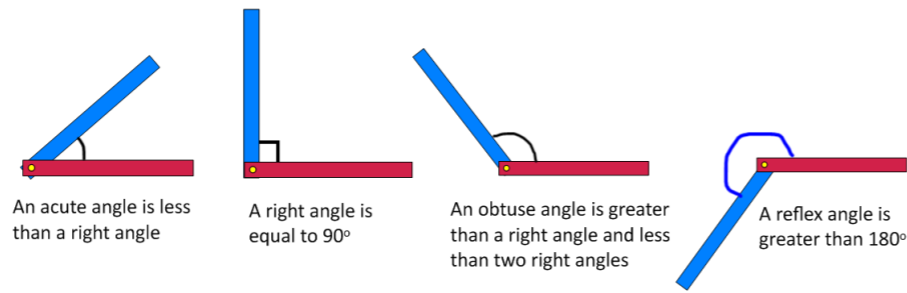


Year 5 Unit 7: Angles (2 weeks)

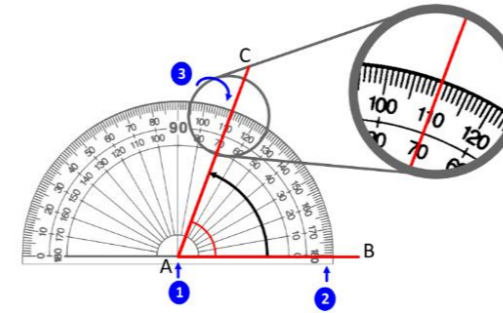
Before you start...

- How confident are your pupils at identifying acute, right and obtuse angles?
- How confident are your pupils at identifying these angles in shapes?
- What experiences have pupils had at reading scales on measuring tools?

Video: Using an angle maker



Video: Using a protractor



Empty Protractor

This [article](#) from Tom Francombe discusses the use of an empty protractor to support pupils in understanding how to use one to measure angles.

Lessons 9 and 10 are consolidation lessons. You may choose to use a consolidation lesson here and ensure pupils are familiar with using a protractor.

Angles in two ways

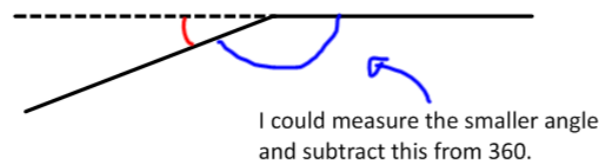
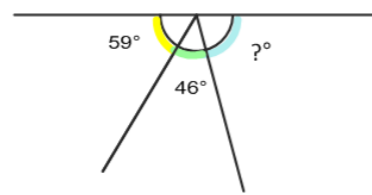
Angles can be thought about in two different ways. Angles can be thought of as objects like the corner of a book or a vertex of a triangle. A measure of how pointy something is. Angles can also be thought of as a measure of turn where movement is an important part of its meaning.

Developing understanding of angles

L1 Classify, compare and order angles

Pupils use an angle maker to review their understanding of angles as a measure of turn. They identify acute, right and obtuse angles and are introduced to reflex angles, identifying these in shapes.

- ? What would you expect a pupil to say when explaining the different angles? What vocabulary would you want them to use?
- ? How will you promote a depth of understanding with angles?



Using a protractor

- L2: Measure angles using a protractor
- L3: Draw angles using a protractor
- L5: Measure and draw reflex angles

Pupils use a protractor to measure acute and obtuse angles and explore how to use the different scales on the protractor to measure the same angle. Pupils then move onto sketching angles using a ruler before measuring them with a protractor to see how accurate they were. The same skills are then applied to reflex angles.

- ? How will you effectively model the use of a protractor for pupils? Could a visualiser or interactive support this? What steps do pupils need to know to measure accurately?
- ? How might you incorporate deliberate errors such as measuring from the wrong line on a protractor, into your teaching?



Investigating angles

- L7 Investigate angles at a point within shapes.
- L8 Investigate angles within shapes

Pupils explore angles made by patterns of crossing lines and try to see how many angles they can calculate rather than measure using knowledge about angles at a point. They then draw triangles and begin to explore the angles within a triangle. Pupils move on to investigate a series of statements about the angles within shapes, justifying whether they are always, sometimes or never true, using geoboards and grid paper to support their choices.

- ? What reasoning stems will you share to support your pupils when they are justifying?

Exploring angle facts

- L4 Know that angles at a point are equal to 360°
- L6 Identify angles at a point on a straight line total 180°

Pupils build understanding that a full turn is equal to 360 degrees and use hands on a clock to explore two angles that sum to 360° . They then use this knowledge to measure reflex angles. Pupils move on to review their understanding that a half turn and the angle of a straight line are 180° and use this knowledge to measure and calculate missing angles at a point on a straight line.

- ? What other real-life applications could you use to support pupils understanding of angles?

Perspective on angles

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