|  |
| --- |
| **Year 5 - Building and assessing the conceptual understanding and learning – Geometry** |
| **End of Year Expectations:**Properties of shapes Pupils should be taught to:* Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
* Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
* Draw given angles, and measure them in degrees (º)
* Identify angles at a point and one whole turn (total 360º)
* Identify angles at a point on a straight line and half a turn (total 180º)
* Identify other multiples of 90º
* Use the properties of rectangles to deduce related facts and find missing lengths and angles
* Distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Position and directionPupils should be taught to:

|  |
| --- |
| Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. |

 | **Non-statutory guidance:**Properties of shapes: Pupils become accurate in drawing lines with a ruler to the nearest millimetre, and measuring with a protractor. They use conventional markings for parallel lines and right angles. Pupils use the term diagonal and make conjectures about the angles formed by diagonals and sides, and other properties of quadrilaterals, for example using dynamic geometry ICT tools. Pupils use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems.Position and direction:Pupils recognise and use reflection and translation in a variety of diagrams, including continuing to use a 2-D grid and co-ordinates in the first quadrant. Reflection should be in lines that are parallel to the axes.   **See NCETM “Teaching for Mastery” Year 5 book –geometry**https://www.ncetm.org.uk/public/files/23305632/Mastery\_Assessment\_Y5\_Low\_Res.pdf |
| **Autumn** | **Spring** | **Summer** |
| * identify 3-D shapes, including cubes and other cuboids, from 2-D representations
* use the properties of rectangles to deduce related facts and find missing lengths and angles (links with area and perimeter)
* revise acute and obtuse angles, introduce reflex angles. Compare and order angles by size.
* distinguish between regular and irregular polygons based on reasoning about equal sides and angles
* solve problems and investigations about 2D and 3D shape.
* Solve problems involving properties of shapes, including angles.
 | * identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.
* Solve problems and investigations linked to reflection and translation.
 | * know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
* draw given angles, and measure them in degrees (°)
* identify
	+ angles at a point and one whole turn (total 360°)
	+ angles at a point on a straight line and ½ turn (total 180°)
	+ other multiples of 90°

solve problems linked to estimating, comparing and measuring angles. |

|  |  |  |
| --- | --- | --- |
| **Key questions:*** Can I identify 3-D shapes, including cubes and other cuboids, from 2-D representations?
* Can I use the properties of rectangles to deduce related facts and find missing lengths and angles?
* Can I identify and name acute, obtuse and reflex angles and explain their properties?
* Can I distinguish between regular and irregular polygons based on reasoning about equal sides and angles?
* Can I solve problems and investigations about 2D and 3D shapes?
* Can I solve problems and investigations about angles?
 | **Key questions:*** Can I identify, describe and represent the position of a shape following a **reflection**, using the appropriate language, and know that the shape has not changed?
* Can I identify, describe and represent the position of a shape following a **translation**, using the appropriate language, and know that the shape has not changed?
* Can I solve problems and investigations about reflection and translation?

  | **Key questions:*** Can I estimate and compare acute, obtuse and reflex angles?
* Can I draw given angles, and measure them in degrees (°), using a protractor accurately?
* Can I estimate in degrees (with reasonable accuracy) the size of an angle before measuring.
* Can I identify angles at a point and one whole turn (total 360°)
* Can I identify angles at a point on a straight line and ½ turn (total 180°)
* Can I identify other multiples of 90°
* Can I solve problems linked to estimating, comparing and measuring angles?
 |