Edward Peake Church of England Middle School		
Topic: Constructing Measuring and Using Geometric Notation	**Year: 7**	**NC Strand: Geometry**

What should I already know?
• How to compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons • How to illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius • How to recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

What will I know by the end of the unit?	
• How to use letter and labelling conventions including those for geometric figures • How to draw and measure line segments including geometric figures • How to understand angles as a measure of turn • How to classify angles • How to measure angles up to 180 degrees • How to draw angles up to 180 degrees • How to draw and measure angles between 180 and 360 degrees • How to identify perpendicular and parallel lines • How to recognise types of triangles	• How to recognise types of quadrilaterals • How to identify polygons with up to ten sides • How to construct triangles using SSS (Side, side, side) • How to construct triangles using SSS, SAS, ASA • How to construct more complex polygons • How to interpret simple pie charts using proportion • How to interpret pie charts using a pie chart • How to draw pie charts

Vocabulary			
Line	Figure	Interior	Equilateral
Notation	Quarter/Half/Three quarter/Full turn	Exterior	Isosceles
Line segment	Degrees	Protractor	Scalene
Polygon	Angle	Construct	Right-angled
Geometric Figure	Rotation	Sum	Square
Segment	Acute	Measures	Rectangle
Length	Obtuse	Parallel	Kite
Height	Right angle	Perpendicular	Rhombus
Width	Reflex	intersect	Parallelogram
Trapezium	Polygon	Edges	Vertices
Equal	triangle	decagon	Pair of compasses
Construct	Side	Point	Vertex
Regular	Diagonals	Compound	Proportion
Frequency	Fraction	Total	Comparison
Sector	Sector		

Investigate/Homework tasks

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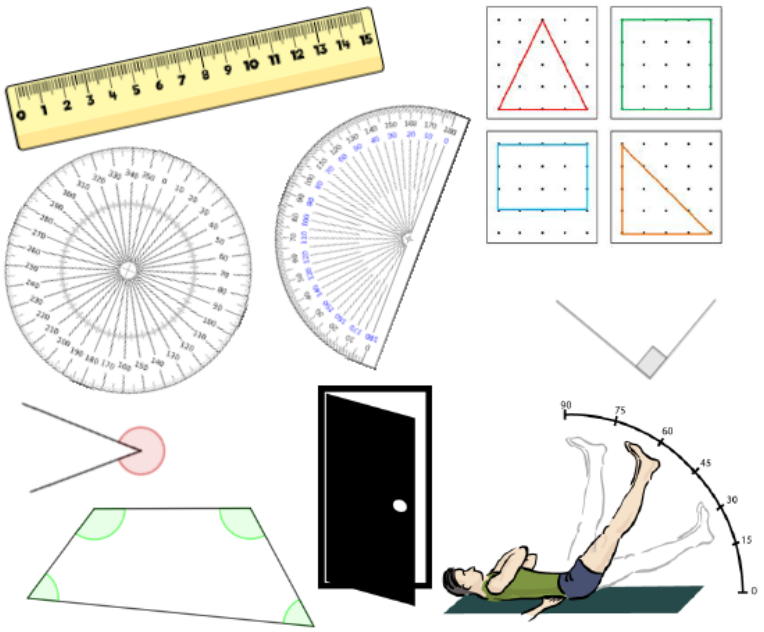
- Homework will be set by your teacher using google classroom
- You should complete at least 30 minutes of maths tasks using the website and log in provided by your teacher. Please attend help sessions if you do not have access to the internet at home
- Additional work you could complete:
  - Find out more about the meaning of the vocabulary list using http://www.amathsdictionaryforkids.com/
- To challenge yourself: Answer the key questions to deepen your knowledge

Key Information/Diagrams

Key Representations



Here are a few ideas of equipment and representations that you might use during Construction and Measuring.

Opening and closing a door or a book allows students to visualise angles as a turn. They can also physically turn themselves and use their arms and legs to demonstrate angles and turns as in the lower right diagram.

Key Questions

How many points do you need to define a straight line? How many points do you need to define a polygon?	What is the difference between a line and a line segment? What would you measure in millimetres/centimetres etc.?	How can we measure the size of a turn? How can we describe the direction of a turn? Does direction matter for a turn of 180°?
How do we illustrate that an angle is 90°? How do we know which angle we are measuring? Will turning through two acute angles result in turning through an obtuse angle? Will turning through two obtuse angles result in turning through a reflex angle?	How do we know which scale should be used to measure the angle? How do we know where to put the protractor when measuring an angle?	How do you choose which scale to use on a protrac Is it possible to draw an angle of 180°? Why are there two scales on a protractor?
How many degrees are there in a full turn? How can we use a protractor that doesn't go up to 360° t draw and measure angles over 180°?	When are two or more lines parallel? When are two lines perpendicular? Can curved lines be parallel?	What is the difference between a scalene and an isosceles triangle? What would you need to know about a triangle to be sure that it was equilateral? Which types of triangle can also be right-angled? Is an equilateral triangle also an isosceles triangle?
What property does every quadrilateral share? Is a quadrilateral a polygon? Which quadrilaterals always have an interior right-angle? Which quadrilaterals sometimes have an interior right-angle? Explain why a square is a rectangle and a parallelogram.	When is a polygon regular? What name do we give to a regular three sided polygon? What name do we give to a regular four sided polygon?	Is it possible to accurately construct a triangle given the side lengths using just a pencil and ruler? Why is more accurate to use a pair of compasses?

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Is it possible to construct a unique triangle given all three angles? Why is it sometimes possible to draw two distinct triangles when given an angle and the length of two sides?	Is it possible to construct an irregular polygon with equal angles? Is it possible to construct an irregular polygon with equal side lengths?	What do pie charts show us? If two parts of the pie chart are the same size, what does that tell us? If one part of two different pie charts are the same size, do they represent the same frequency?
If two pie charts are identical, do they represent identical frequencies? What if the angle measured is between two marks on your protractor?	What do you do when the total frequency is neither a multiple nor a factor of 360? How do you calculate the angle of a sector of a pie chart?	