Edward Peake Church of England Middle School		
Topic: Area of trapezia and circles	**Year: 8**	**NC Strand: Measures**

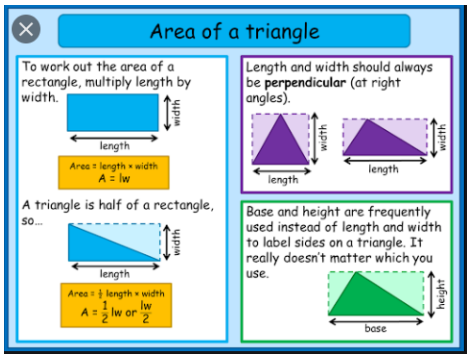
What should I already know?

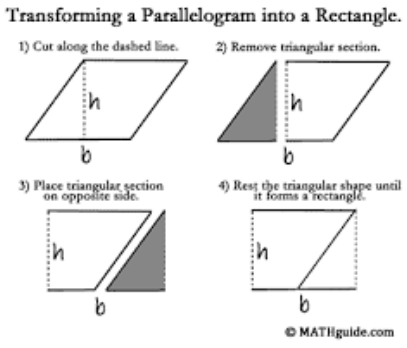
- How to solve problems using area of rectangles and parallelograms
- How to solve problems using area of triangles
- How to solve problems using area of trapezia

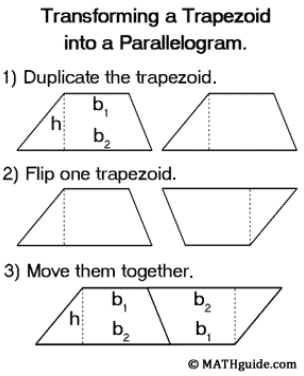
What will I know by the end of the unit?

- How to calculate the area of triangles, rectangles and parallelograms
- How to calculate the area of a trapezium
- How to calculate the perimeter and area of compound shapes
- How to investigate the area of a circle
- How to calculate the area of a circle and parts of a circle without a calculator
- How to calculate the area of a circle and parts of a circle with a calculator
- How to calculate the perimeter and area of compound shapes (including circles)

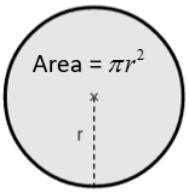
Key Information/Diagrams

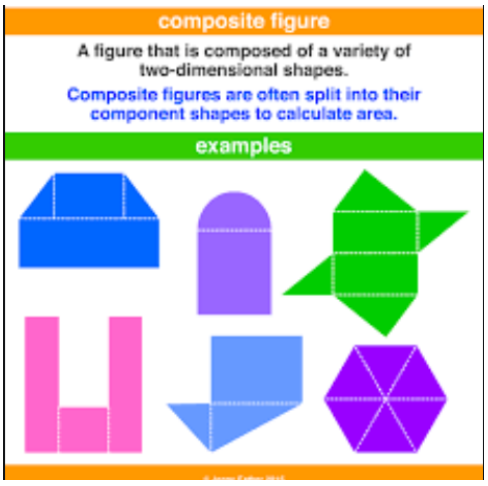






Area of Circle





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Vocabulary			
Formula	Trapezia	Sector	Diameter
Area	Parallel	Rectangle	Radius
Triangle	Perpendicular height	Estimate	In terms of π
Square	Compound	Infinity	Decimal place
Parallelogram	Component shapes	Radius	Calculate
Rhombus	Parallelogram	Approximately	Substitute
Trapezium	Perpendicular	Estimate	Significant figures

Investigate/Homework tasks

- 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 Questions

Why is the formula to find the area of a rectangle the same as the formula to find the area of a parallelogram?

Why do we use the perpendicular height when finding the area of a triangle and not the sloping height?

How can you find the area of a rhombus? How do you know?

Compare a rectangle, parallelogram and trapezium. What's the same and what's different?

Why does the formula for the area of a trapezium also work if it is applied to parallelograms, rectangles and squares?

Are the parallel sides of a trapezium always horizontal?

How can you divide this compound shape up into shapes we know how to find the area of? Name each of these shapes.

What length(s) do you need to substitute into your formula? Is this length given, or do you need to calculate it first? What is your strategy for find the missing length(s)?

Where is the radius of the circle?

How do we find the circumference of a circle?

How do we find the area of a parallelogram?

As the number of sectors increases, is our estimate for the area more or less accurate? Explain why.

What does this tell you about the area of a circle?

How do you round a number to 1 significant figure?

Use a calculator to change $\frac{22}{7}$ into a decimal. What do you notice when you compare this to π?

How do I know whether to substitute the radius or the diameter? What mistake do you think people often make?

Where is the π key on your calculator? How do you enter e.g. 3^2 into your calculator? Is there more than one way of doing this?

Why is it useful to firstly calculate an estimate of the area?

How many decimal places or significant figures should you round your answer to? Why?

Do we need to work out the area/arc length of each semi-circle separately? Why or why not?

Which standard shapes can you identify in the compound shape?

Identify the dimensions you need to be able to calculate the area. How can you work out the missing ones?

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