Maths Learning Pathway

Year 7 - Four Operations

What have I learned in the past?

KS2 Four Operations

- Add and subtract using a formal written method
- Multiply and divide using a formal written method
- Solve inverse problems
- Solve multi-step problems
- Use BIDMAS
- Identify common multiples and factors
- Recall prime numbers

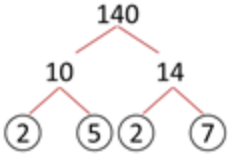
What is ...

$60 - (4^2 + 2 \times 5)$?

What am I learning now?

Year 7 Four Operations

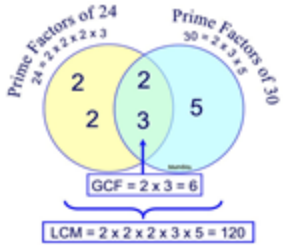
- Use the 4 operations, including formal written methods, applied to integers and decimals, both positive and negative.
- Find the highest common factor, lowest common multiple of two or more numbers
- Write a number as a product of its prime factors (including product notation)
- Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals (BIDMAS)



What will I learn in the future?

Year 8 Four Operations

- Use prime factorisations to find the highest common factor of two numbers and the lowest common multiple
- Use the 4 operations with numbers that are in standard form
- use a calculator to work with numbers in standard form



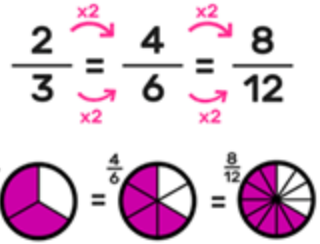
Maths Learning Pathway

Year 7 - Fractions, Decimals & Percentages

What have I learned in the past?

KS2 Fractions and Percentages

- Name parts of fractions
- Find equivalent fractions
- Add fractions whose denominators are multiples of the same number.
- Find 50%, 25%, 75%, 10%, 1% of a number.



What am I learning now?

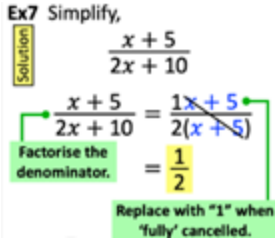
Year 7 Fractions and Percentages

- Can use four operations for proper and improper fractions.
- Can order fractions
- Interpret fractions and percentages as operators.
- Work interchangeably with terminating decimals and fractions
- Use the decimal multiplier for percentage increase and decrease.
- Calculate % change - profit and loss.

What will I learn in the future?

Year 8 Fractions and Percentages

- Compare two quantities using percentages.
- Solve problems using reverse percentages
- Use simple interest in financial mathematics
- Use compound interest.
- Simplify algebraic fractions



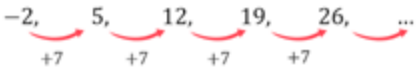
Maths Learning Pathway

Year 7 - Algebra

What have I learned in the past?

KS2 Algebra

- Use simple formulae
- Generate and describe linear number sequences
- Find pairs of numbers that satisfy number sentences involving two unknowns



What am I learning now?

Year 7 Algebra

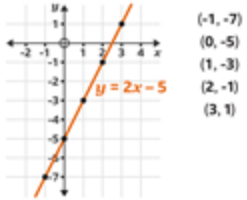
- Substitute numerical values into formulae - including negatives.
- Simplify and manipulate algebraic expressions - collect terms and expand brackets
- Solve linear equations with unknowns on both sides
- Produce graphs of linear functions
- Find the *n*th term

$$20x + 5 = 5x + 65$$

$$4x + 1 = x + 13$$

$$3x = 12$$

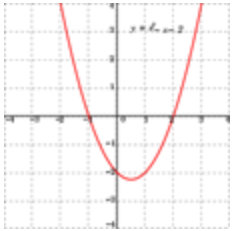
$$x = 4$$



What will I learn in the future?

Year 8 Algebra

- Simplify expressions
- Multiply double brackets
- Factorise
- Construct and solve linear equations
- Form and solve inequalities
- Rearrange formula
- Plot and interpret linear graphs
- Plot quadratic graphs



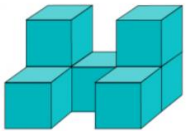
Maths Learning Pathway

Year 7 - Measurement

What have I learned in the past?

KS2 Measurement

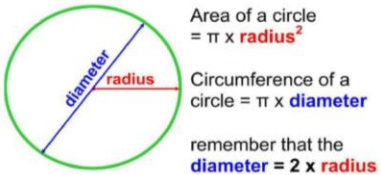
- Convert between units of length, mass and capacity.
- Understand that 8 km is approximately 5 miles.
- Calculate the area and perimeter of rectangles, triangles, parallelograms.
- Calculate the volume of 3D shapes by counting cubes
- Calculate the volume of cuboids using LxWxH



What am I learning now?

Year 7 Measurement

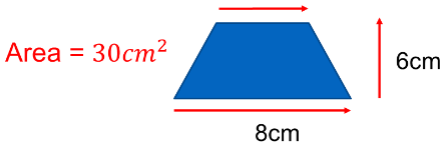
- Solve problems involving perimeter and area of triangles and parallelograms.
- Calculate the area of a trapezium.
- Calculate the circumference of a circle.
- Calculate the area of a circle.
- Solve problems involving semi-circles.
- Calculate the volume of 3D shapes.



What will I learn in the future?

Year 8 Measurement

- Solve problems involving circles
- Calculate the area of composite shapes that include sections of a circle.
- Explore prisms and cylinders
- Draw/construct nets of 3D shapes
- Work out the surface area of cuboids and triangular prism
- Solve inverse problems



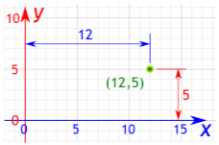
Maths Learning Pathway

Year 7 - Geometry

What have I learned in the past?

KS2 Geometry

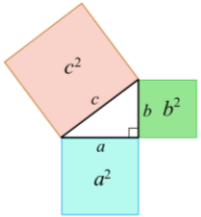
- Draw 2-D shapes given dimensions
- Compare and classify geometric shapes based on their properties
- Find missing angles
- Name parts of circles
- Plot coordinates in all four quadrants
- Translate and reflect shapes

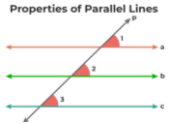


What am I learning now?

Year 7 Geometry

- Find missing angles in triangles and quadrilaterals
- Find angles in parallel lines
- Use Pythagoras' theorem to calculate the length of a missing side
- Use properties of 3D shapes (and appropriate vocabulary) to solve problems





What will I learn in the future?

Year Geometry

- Find missing angles within triangles and parallel lines
- Calculate missing interior and exterior angles in polygons
- Use trigonometry to calculate missing angles and lengths of right-angles triangles
- Solve problems involving Pythagoras and trigonometry
- Enlarge shapes