

Year 6 - Yearly overview and small steps guidance

from the White Rose Scheme of Learning

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Addition, Subtraction, Multiplication and Division				Number: Fractions				Geometry: Position and Direction	Consolidation
Spring	Number: Decimals	Number: Percentages	Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio				Consolidation
Summer	Geometry: Properties of Shape		Problem Solving			Statistics		Investigations				Consolidation

* Summer term order is slightly different due to SATs. 1 week of properties and shape and statistics are covered before SATs. The topics are covered afterwards again in greater depth.

Place value

Numbers to ten million

Compare and order any number

Round any number

Negative numbers

Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.

Round any whole number to a required degree of accuracy.

Use negative numbers in context, and calculate intervals across zero.

Solve number and practical problems that involve all of the above.

Four Operations

- ▶ Add and subtract integers
- ▶ Multiply up to a 4-digit number by 2-digit number
- ▶ Short division
- ▶ Division using factors
- ▶ Long division (1)
- ▶ Long division (2)
- ▶ Long division (3)
- ▶ Long division (4)
- ▶ Common factors
- ▶ Common multiples
- ▶ Primes to 100
- ▶ Squares and cubes
- ▶ Order of operations
- ▶ Mental calculations and estimation
- ▶ Reason from known facts

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Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Multiply multi-digit numbers up to 4 digits by a 2-digit number using the formal written method of long multiplication.

Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context.

Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context.

Perform mental calculations, including with mixed operations and large numbers.

Identify common factors, common multiples and prime numbers.

Use their knowledge of the order of operations to carry out calculations involving the four operations.

Solve problems involving addition, subtraction, multiplication and division.

Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.

Fractions

- ▶ Simplify fractions
- ▶ Fractions on a number line
- ▶ Compare and order (denominator)
- ▶ Compare and order (numerator)
- ▶ Add and subtract fractions (1)
- ▶ Add and subtract fractions (2)
- ▶ Add fractions
- ▶ Subtract fractions
- ▶ Mixed addition and subtraction
- ▶ Multiply fractions by integers
- ▶ Multiply fractions by fractions
- ▶ Divide fractions by integers (1)
- ▶ Divide fractions by integers (2)
- ▶ Four rules with fractions
- ▶ Fraction of an amount
- ▶ Fraction of an amount – find the whole

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.

Compare and order fractions, including fractions > 1

Generate and describe linear number sequences (with fractions)

Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions.

Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]

Divide proper fractions by whole numbers [for example $\frac{1}{3} \div 2 = \frac{1}{6}$]

Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example $\frac{1}{8}$]

Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Position and Direction

- ▶ The first quadrant
- ▶ Four quadrants
- ▶ Translations
- ▶ Reflections

Describe positions on the full coordinate grid (all four quadrants)

Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

Decimals

- ▶ Three decimal places
- ▶ Multiply by 10, 100 and 1,000
- ▶ Divide by 10, 100 and 1,000
- ▶ Multiply decimals by integers
- ▶ Divide decimals by integers
- ▶ Division to solve problems
- ▶ Decimals as fractions
- ▶ Fractions to decimals (1)
- ▶ Fractions to decimals (2)

Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places.

Multiply 1-digit numbers with up to 2 decimal places by whole numbers.

Use written division methods in cases where the answer has up to 2 decimal places.

Solve problems which require answers to be rounded to specified degrees of accuracy.

Percentages

- ▶ Fractions to percentages
- ▶ Equivalent FDP
- ▶ Order FDP
- ▶ Percentage of an amount (1)
- ▶ Percentage of an amount (2)
- ▶ Percentages - missing values

Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.

Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.

Algebra

- ▶ Find a rule - one step
- ▶ Find a rule - two step
- ▶ Forming expressions
- ▶ Substitution
- ▶ Formulae
- ▶ Forming equations
- ▶ Solve simple one-step equations
- ▶ Solve two-step equations
- ▶ Find pairs of values
- ▶ Enumerate possibilities

Use simple formulae.

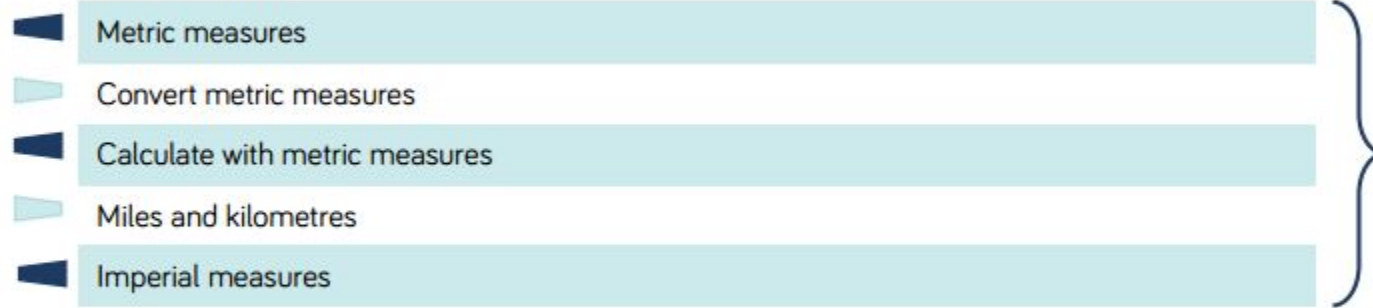
Generate and describe linear number sequences.

Express missing number problems algebraically.

Find pairs of numbers that satisfy an equation with two unknowns.

Enumerate possibilities of combinations of two variables.

Converting units



Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 dp.

Convert between miles and kilometres.

Perimeter, area and volume

Shapes - same area

Area and perimeter

Area of a triangle (1)

Area of a triangle (2)

Area of a triangle (3)

Area of parallelogram

Volume - counting cubes

Volume of a cuboid

Recognise that shapes with the same areas can have different perimeters and vice versa.

Recognise when it is possible to use formulae for area and volume of shapes.

Calculate the area of parallelograms and triangles.

Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm^3 , m^3 and extending to other units (mm^3 , km^3)

Ratio

Using ratio language

Ratio and fractions

Introducing the ratio symbol

Calculating ratio

Using scale factors

Calculating scale factors

Ratio and proportion problems

Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.

Solve problems involving similar shapes where the scale factor is known or can be found.

Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Properties of shape

- Measure with a protractor
- Introduce angles
- Calculate angles
- Vertically opposite angles
- Angles in a triangle
- Angles in a triangle - special cases
- Angles in a triangle - missing angles
- Angles in special quadrilaterals
- Angles in regular polygons
- Draw shapes accurately
- Draw nets of 3-D shapes

Draw 2-D shapes using given dimensions and angles.

Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Statistics

Read and interpret line graphs

Draw line graphs

Use line graphs to solve problems

Circles

Read and interpret pie charts

Pie charts with percentages

Draw pie charts

The mean

Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.

Interpret and construct pie charts and line graphs and use these to solve problems.

Calculate the mean as an average.