Year 5 - 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 and Subtraction		Statistics		Number: Multiplication and Division		Measurement: Perimeter and Area		Consolidation
Spring	Number: Multiplication and Division			Number: Fractions						Number: Decimals and Percentages		Consolidation
Summer	Number: Decimals				Geometry: Properties of Shape			Geometry: Position and Direction	Measurement: Converting Units		Measurement: Volume	Consolidation

Place value

- Numbers to 10,000
- Roman Numerals to 1,000
- Round to nearest 10, 100 and 1,000
- Numbers to 100,000
- Compare and order numbers to 100,000
- Round numbers within 100,000
- Numbers to a million
- Counting in 10s, 100s, 1,000s, 10,000s, and 100,000s
- Compare and order numbers to one million
- Round numbers to one million
- Negative numbers

Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.

Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000

Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero.

Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000

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

Read Roman numerals up to 1,000 (M) and recognise years written in Roman numerals.

Addition and Subtraction

Add whole numbers with more than 4 digits (column method)

Subtract whole numbers with more than 4 digits (column method)

Round to estimate and approximate

Inverse operations (addition and subtraction)

Multi-step addition and subtraction problems

Add and subtract numbers mentally with increasingly large numbers.

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.

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

Statistics

Read and interpret line graphs

Draw line graphs

Use line graphs to solve problems
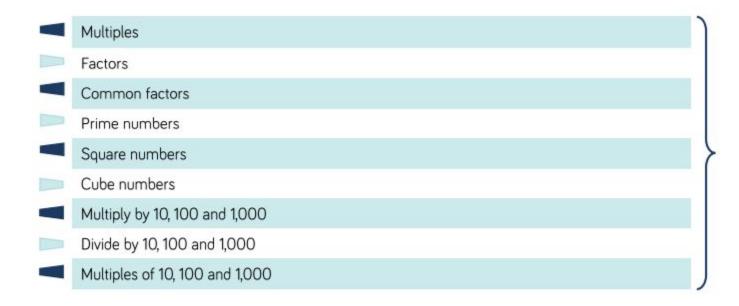
Read and interpret tables

Two-way tables

Timetables

Solve comparison, sum and difference problems using information presented in a line graph.

Complete, read and interpret information in tables including timetables.

Multiplication and Division

Multiples

Factors

Common factors

Prime numbers

Square numbers

Cube numbers

Multiply by 10, 100 and 1,000

Divide by 10, 100 and 1,000

Multiples of 10, 100 and 1,000

Multiply and divide numbers mentally drawing upon known facts.

Multiply and divide whole numbers by 10, 100 and 1,000

Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.

Recognise and use square numbers and cube numbers and the notation for squared (^{2}) and cubed (^{3})

Solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.

Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.

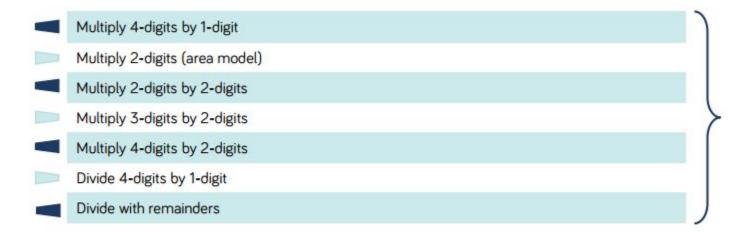Establish whether a number up to 100 is prime and recall prime numbers up to 19

Perimeter and Area

Measure perimeter
Calculate perimeter
Area of rectangles
Area of compound shapes
Area of irregular shapes

Measure and calculate the perimeter of composite rectilinear shapes in cm and m.

Calculate and compare the area of rectangles (including squares), and including using standard units, cm², m² estimate the area of irregular shapes.

Multiplication and Division

Multiply 4-digits by 1-digit
Multiply 2-digits (area model)
Multiply 2-digits by 2-digits
Multiply 3-digits by 2-digits
Multiply 4-digits by 2-digits
Divide 4-digits by 1-digit
Divide with remainders

Multiply and divide numbers mentally drawing upon known facts.

Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2-digit numbers.

Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context.

Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.

Fractions

Equivalent fractions

Improper fractions to mixed numbers

Mixed numbers to improper fractions

Number sequences

Compare and order fractions less than 1

Compare and order fractions greater than 1

Add and subtract fractions

Add fractions within 1

Add 3 or more fractions

Add fractions

Add mixed numbers

Subtract fractions

Subtract mixed numbers

Subtract – breaking the whole

Compare and order fractions whose denominators are multiples of the same number.

Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths.

Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]

Add and subtract fractions with the same denominator and denominators that are multiples of the same number.

Subtract 2 mixed numbers

Multiply unit fractions by an integer

Multiply non-unit fractions by an integer

Multiply mixed numbers by integers

Fraction of an amount

Using fractions as operators

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

Read and write decimal numbers as fractions [for example $0.71 = \frac{71}{100}$]

Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Decimals and percentages

Decimals up to 2 d.p.

Decimals as fractions (1)

Decimals as fractions (2)

Understand thousandths

Thousandths as decimals

Rounding decimals

Order and compare decimals

Understand percentages

Percentages as fractions and decimals

Equivalent F.D.P.

Read, write, order and compare numbers with up to three decimal places.

Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.

Round decimals with two decimal places to the nearest whole number and to one decimal place.

Solve problems involving number up to three decimal places.

Recognise the percent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.

Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25

Decimals

- Adding decimals within 1
- Subtracting decimals within 1
- Complements to 1
- Adding decimals – crossing the whole
- Adding decimals with the same number of decimal places
- Subtracting decimals with the same number of decimal places
- Adding decimals with a different number of decimal places
- Subtracting decimals with a different number of decimal places
- Adding and subtracting wholes and decimals
- Decimal sequences
- Multiplying decimals by 10, 100 and 1,000
- Dividing decimals by 10, 100 and 1,000

Recognise and write decimal equivalents of any number of tenths or hundredths.

Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths

Solve simple measure and money problems involving fractions and decimals to two decimal places.

Convert between different units of measure [for example, kilometre to metre]

Properties of shape

Measuring angles in degrees

Measuring with a protractor (1)

Measuring with a protractor (2)

Drawing lines and angles accurately

Calculating angles on a straight line

Calculating angles around a point

Calculating lengths and angles in shapes

Regular and irregular polygons

Reasoning about 3-D shapes

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.
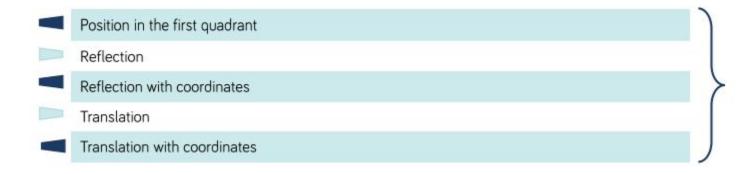
Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.

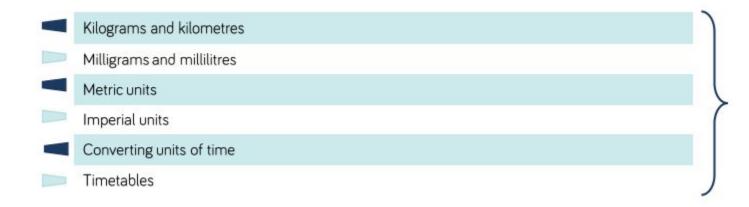Draw given angles, and measure them in degrees.

Identify: angles at a point and one whole turn (total 360°), angles at a point on a straight line and ½ a turn (total 180°) other multiples of 90°

Position and direction

Position in the first quadrant

Reflection

Reflection with coordinates

Translation

Translation with coordinates

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.

Converting units

Kilograms and kilometres

Milligrams and millilitres

Metric units

Imperial units
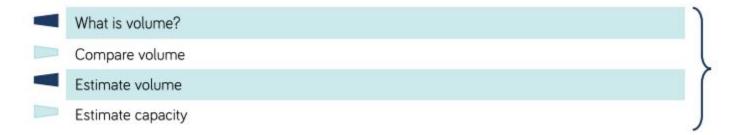
Converting units of time

Timetables

Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml]

Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.

Solve problems involving converting between units of time.

Volume

What is volume?

Compare volume

Estimate volume

Estimate capacity

Estimate volume [for example using 1cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]

Use all four operations to solve problems involving measure.