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<tr><td>Number and Place Value</td><td>

Read and write numbers up to ten thousand.
Be able to identify the value of any digit up to ten thousand, including being able to label the columns of such a number.
Order and compare numbers up to 10,000.
Count forwards or backwards by powers of 10 up to 10000 (10, 100, 1000).
Count backwards in positive integers, including through 0. Recognise that numbers less than 0 are called negative number.
Interpret negative numbers in context, such as temperature or debt.
Be able to find the difference between a negative integer and a positive integer.
Round any number up to 10,000 to the nearest 10, 100, 1000.
Read and write Roman Numerals up to C, using a systematic method.
Solve written, numerical, and practical problems involving the information and knowledge included in this unit.
Be able to count in multiples of 25, 50, 75, 100, and 1000.

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Knowledge

Know that each column increases by a power of 10.
Know that number have the following columns: Thousands, Hundreds, Tens, Ones.
Know that negative numbers are less than 0.
Know that rounding can help us to estimate quantity.
Dates and clocks are common uses of Roman Numerals.
Know the following Roman to Arabic conversions:

I = 1
V = 5
X = 10
L = 50
C = 100

Vocabulary

Powers of 10
Columns
Greater than
Less than
Zero
Negative (minus) numbers.
Positive numbers
Integer
Roman Numerals

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Area of Curriculum	Mathematical Stories:	
	Disciplinary	**Substantive**

Four Operations	• Add integers (up to and including) four digits, using column addition.
	• Identify missing numbers in given column addition of the type mentioned above.
	• Subtract integers (up to and including) four digits, using column subtraction.
	• Identify missing numbers in given column subtraction of the type mentioned above.
	• Add and subtract numbers mentally using the follow methods:
	  ○ Partitioning the smaller number,
	  ○ Compensating,
	  ○ Bridging.
	NB: For assistance in these methods, please refer to the video: https://www.youtube.com/watch?v=-18qLbg1Gmk
	• Use rounding (in unit 1) to approximate answers and check.
	• Be able to solve addition and subtraction problems in a range of ways, including two-step word problems.
	• Recall multiplication and division facts for multiplication tables up to 12 x 12.
	• Use the above facts to solve questions including multiples of ten, for example if 3 x 4 = 12, then 30 x 40 = 1200, or 1200 ÷ 3 = 400.
	• Know factor pairs for numbers using times tables knowledge.
	• Use place value, known and derived facts to multiply and divide mentally.
	• Be able to multiply 3 numbers.
	• Multiply numbers up to 10,000 by a single digit, using a formal written method.
	• Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.
		Knowledge
		• Know that there are different words for addition and subtraction.
		• Know that addition is commutative, but subtraction is not.
		• Know that addition is associative.
		• Know that anything multiplied by 0 = 0.
		• Know that anything multiplied or divided by 1 = itself.
		• Know that multiplication is communitive and associative.
		• Know that multiplication and division are inverses of each other.
		
		Vocabulary
		• Integer,
		• Difference,
		• Subtract,
		• Minus,
		• Total,
		• Sum,
		• In addition,
		• Communitive,
		• Associative,
		• Factor,
		• Factor pairs,
		• Multiply,
		• Multiple,
		• Groups of/ Lots of

Area of Curriculum	Mathematical Stories:	
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Fractions, decimals, and Percentages	• Recognise and show, using diagrams, families of common equivalent fractions, such as ½ = 2/4. • Be able to use factors and multiples to recognise equivalent fractions and simplify where appropriate (for example, 6/9 = 2/3 or 1/4 = 2/8). • Count up and down in hundredths; recognising that hundredths arise when dividing an object by 100 and dividing tenths by 10. • Solve problems involving finding a unit fraction of an amount, such as finding a third of 21 items. • Solve problems involving increasingly harder fractions to calculate quantities, including non-unit fractions, where the answer will be an integer. • Add and subtract fractions with the same denominator, including beyond a whole one. • Be able to place fractions on a number line between 0 and 1. • Recognise and write decimal equivalents of any number of tenths or hundreds, and place these accurately on a number line. • Be able to divide an integer by 10 or 100, and identify any tenths or hundredths in their answer. • Round decimals with a single decimal place to the nearest integer. • Compare and order numbers with up to two decimal places, including where numbers have a different number of decimal places. • Add and subtract numbers with up to decimal places, including where numbers have a different number of decimal places. • Multiply numbers up to two decimal places by a single digit integer. • Solve simple measure and money problems involving fractions and decimals to 2 decimal places.	**Knowledge** • Know that the top of a fraction is referred to as a numerator, and tells us how many parts of the whole the fraction refers to. • Know that the bottom of a fraction is referred to as a denominator, and tells us how many parts the whole the fraction has been divided into. • Know that different fractions can represent the same amount (equivalent fractions). • Know that fractions and decimals are different ways of representing the same amount. • Know the following fraction to decimal equivalencies: • $0.25 = \frac{1}{4}$ $0.75 = \frac{3}{4}$ $0.5 = \frac{1}{2}$ **Vocabulary** • Numerator, • Denominator, • Whole, • Decimal places, • Tenths, • Hundredths, • Integer, • Equivalency,

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Measure	• Convert between different units of measure using the facts listed in the substantive knowledge section. • Be able to accurately use a ruler and metre stick to measure lengths to a reasonable degree of accuracy (nearest mm on a ruler, nearest cm on a metre stick). • Be able to read a range of scales, including where gaps go up in increments other than 1. • By counting squares, work out the perimeter of a rectilinear polygon drawn on squared paper. • Be measuring the sides, work out the perimeter of a polygon drawn to scale. • Calculate the perimeter of a polygon where the length of the sides is known, extending this to being able to calculate a missing side when the perimeter is given. • Find the area of rectilinear polygons by counting squares. • Estimate, compare and calculate different measures, including money in pounds and pence. • Read, write and convert time between analogue and digital 12- and 24-hour clocks. • Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.	**Knowledge** • Know that there are 1000 grams in a kilogram. • Know that there are 1000 ml in a litre. • Know that there are 10 mm in a cm. • Know that there are 100 cm in a m. • Know that there are 1000m in a km. • Know that there are 60 minutes in an hour. • Know that there are 60 seconds in a minute. • Know that there are 100p in a £. • Know that the perimeter of a shape is the sum of the length of the outside edges. • Know that the area of the shape is the space inside. • Know that there are 12 months in a year. **Vocabulary** • grams/ kilograms • millilitres/ litres • millimetre/ centimetre/ metre/ kilometre • conversion • ruler • perimeter • area • scale • weight/ mass • capacity • volume • minutes • hours

Area of Curriculum	Mathematical Stories:	
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Geometry	• Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes, including four types of triangles, trapezium, parallelogram, rhombus, kite, square, oblong, pentagon, hexagon. • Identify acute angles, right angles, and obtuse angles. • Be able to identify if a polygon is regular or irregular based on the lengths of edges and the size of angles. • Identify lines of symmetry in polygons and draw these accurately, using a mirror where necessary. • Complete a simple symmetric figure with respect to a specific line of symmetry. • Describe positions on a 2-D grid as coordinates in the first quadrant. • Plot positions on a 2-D grid in the first quadrant from coordinates. • Describe movements between positions as translations of a given unit to the left/right and up/down. • Plot specified points and draw sides to complete a given polygon.	**Knowledge** • Know that an equilateral triangle has 3 equal edges and angles, an isosceles triangle has 2 equal edges and angles, and a scalene triangle has no equal edges or angles. • Know that a right-angled triangle contains a right-angle, and may be scalene or isosceles. • Know that a rectangle is any shape with four edges and four right angles, and that oblongs are often referred to as rectangles as they are both. • Know that a quadrilateral contains four edges. • Know that an acute angle is less than a right angle and between 0 to 90 degrees. • Know that an obtuse angle is larger than a right angle, but less than a half turn (between 90 and 180 degrees). • Know that right angle is exactly 90 degrees. • Know that a regular polygon has equal sides and angles. • Know that the x-axis is used first in cartesian coordinates. **Vocabulary** • Equilateral, • Isosceles, • Scalene, • Quadrilateral, • Acute, • Obtuse, • Right-angle, • Line of symmetry, • Regular, • Irregular, • Axes, • Translations, • Polygon.

Area of Curriculum	Mathematical Stories:	
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Statistics	• Read, interpret, and answer questions from a bar chart or pictogram. • Be able to present discrete data in a bar chart and pictogram. • Read, interpret, and answer questions from a time graph. • Be able to present discrete data in a time graph. • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	**Knowledge** **Vocabulary** • Bar chart, • Time graph,