

Sycamore Maths MTPs

Term 1 – Place Value

Unit	Objective	Ready to Progress Criteria	Assessment
Y3 Unit 2 / Y4 Unit 2	Composition of 100 in 10s and 1s	3NPV–1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10. 3NPV–4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. 3NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10). 3AS–1 Calculate complements to 100.	
	Composition of 100 in 50s, 25s and 20s		
	Multiples of 10 that total 100		
	Use known facts to find pairs of numbers that total 100		
	Use known facts to find complements to 100 efficiently		
	Explain how many hundreds, tens and ones 1,000 is composed of		
	Represent 3-digit multiples of 10 in different ways		
	Use place value to compose numbers up to 2,000 using hundreds, tens and ones		
	Use place value knowledge to write addition and subtraction equations		
	Bridge 100 by adding in multiples of 10		
	Bridge 100 by subtracting in multiples of 10		
	Use addition and subtraction strategies to solve problems with multiples of 100		
Y3 Unit 3	Count across and on from 100	4NPV–1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.	
	Bridge 100 by adding or subtracting a single-digit number		
	Find 10 more or 10 less than a given number		
	Cross the hundreds boundary when adding and subtracting any 2-digit multiple of 10		
Y3 Unit 5 / Y4 Unit 4	Represent a 3-digit number up to 1,000 in different ways	3NPV–2 Recognise the place value of each digit in <i>three</i>-digit numbers, and compose and decompose <i>three</i>-digit numbers using standard and non-standard partitioning. 3NPV–3 Reason about the location of any <i>three</i>-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10. 4NPV–2 Recognise the place value of each digit in <i>four</i>-digit numbers, and compose and decompose <i>four</i>-digit numbers using standard and non-standard partitioning. 4NPV–3 Reason about the location of any <i>four</i>-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each. 4NPV–4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts. 4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)	
	Use place value and number facts to decompose 4-digit numbers in different ways		
	Position 3-digit numbers on number lines		
	Estimate the position of 3-digit numbers on unmarked number lines		
	Ordering sets of 3-digit numbers		
	Compare and order 4-digit numbers		
	Explain what rounding is and round a 4-digit number to the nearest thousand		
	Round a 4-digit number to the nearest hundred and ten		
	Round a 4-digit number to the nearest thousand, hundred and ten		
	Use known facts to add and subtract multiples of 100 within 1000		
	Partition 3-digit numbers in different ways		
	Use known facts to add and subtract to and from multiples of 100		
	Add and subtract to and from a 3-digit number bridging 100		
	Solve problems by adding and subtracting to or from 3-digit numbers		

Term 2 – Addition and Subtraction

Unit	Objective	Ready to Progress Criteria	Assessment
Y3 Unit 8	<u>Add two 3-digit numbers using partitioning</u>	3AS–3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction	
	<u>Add two 3-digit numbers using adjusting strategies</u>		
	<u>Add 2 and 3-digit numbers by redistributing</u>		
	<u>Choose the most efficient strategy to add two 3-digit numbers</u>		
	<u>Subtract 2 or 3-digit numbers using partitioning and bridging a multiple of 10</u>		
	<u>Subtract a pair of 2-digit numbers by finding the difference</u>		
	<u>Subtract 3-digit multiples of 10 by finding the difference between them</u>		
	<u>Use addition and subtraction to solve problems in different contexts</u>		
Y3 Unit 9	<u>Use the additive relationship to rearrange addition equations</u>		
	<u>Use the additive relationship to rearrange subtraction equations</u>		
	<u>Develop understanding of the relationship between addition and subtraction</u>		
	<u>Identify knowns and unknowns in addition equations</u>		
	<u>Identify knowns and unknowns in subtraction equations</u>		
	<u>Use the additive relationship to rearrange and solve equations</u>		
	<u>Understand why the order of addition and subtraction steps can be chosen</u>		
	<u>Solve one and two-step problems in different contexts</u>		
Y3 Unit 10 / Y4 Unit 5	<u>Identify the addends and the sum in column addition</u>	3AS–2 Add and subtract up to three-digit numbers using columnar methods	
	<u>Use place value to correctly lay out column addition</u>		
	<u>Add 2-digit numbers using column addition</u>		
	<u>Add 3-digit numbers using column addition</u>		
	<u>Use column addition to add numbers by regrouping ones</u>		
	<u>Use column addition to add numbers by regrouping tens</u>		
	<u>Use column addition with regrouping in ones and tens</u>		
	<u>Add up to 3 four-digit numbers using column addition</u>		
	<u>Use column addition with regrouping to solve problems</u>		
Y3 Unit 12 / Y4 Unit 5	<u>Identify the minuend and subtrahend in column subtraction</u>	3AS–2 Add and subtract up to three-digit numbers using columnar methods 4NPV–4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.	
	<u>Use column subtraction to subtract from a 2- or 3-digit number</u>		
	<u>Subtract from a 2-digit number using column subtraction with regrouping</u>		
	<u>Subtract from a 3-digit number using column subtraction with regrouping</u>		
	<u>Subtract 4-digit numbers using column subtraction</u>		
	<u>Explain how many '500s' and '250s', 1,000 is composed of</u>		
	<u>Explain how many '100s' and '200s', 1,000 is composed of</u>		

Term 3 – Y3 Fractions

Unit	Objective	Ready to Progress Criteria	Assessment
Y3 Unit 13	<u>Identify a whole and the parts that make it up</u>	3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts 3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency)	
	<u>Explain why a part can only be defined in relation to a whole</u>		
	<u>Identify the number of equal or unequal parts in a whole</u>		
	<u>Identify equal parts when they do not look the same</u>		
	<u>Explain the size of a part in relation to the whole</u>		
	<u>Construct a whole when given a part and the number of parts</u>		
	<u>Identify how many equal parts a whole has been divided into</u>		
	<u>Use fraction notation to describe an equal part of the whole</u>		
	<u>Represent unit fractions in different ways</u>		
Y3 Unit 14	<u>Identify parts and wholes in the contexts of lines and 3D objects</u>		
	<u>Identify parts and wholes in different contexts</u>		
	<u>Identify equal parts in a whole when they do not look the same in 2D shapes</u>		
	<u>Identify equal parts in a whole when they do not look the same in 3D contexts</u>		
Y3 Unit 15	<u>Compare unit fractions by looking at the denominator</u>		
	<u>Compare and order unit fractions by looking at the denominator</u>		
	<u>Identify when unit fractions cannot be compared</u>		
Y3 Unit 16	<u>Constructing a whole</u>		
	<u>Use knowledge of the relationship between parts and wholes to solve problems</u>		
	<u>Use parts and wholes to find a unit fraction of a set of objects</u>		
	<u>Calculate the value of parts and wholes using understanding of division</u>		
	<u>Connect division with finding a fraction of a quantity to find parts and wholes</u>		
Y3 Unit 17	<u>Explain that non-unit fractions are made of more than one unit fraction</u>	3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts 3F–3 Reason about the location of any fraction within 1 in the linear number system 3F–4 Add and subtract fractions with the same denominator, within 1	
	<u>Identify non-unit fractions</u>		
	<u>Identifying equal parts in a whole in different contexts</u>		
	<u>Use knowledge of non-unit fractions to solve problems</u>		
	<u>Use knowledge of unit fractions to find one whole</u>		
	<u>Place fractions between 0 and 1 on a number line</u>		
	<u>Compare non-unit fractions with the same denominator</u>		
	<u>Compare fractions with the same numerator</u>		
	<u>Compare non-unit fractions including those equal to 1</u>		
Y3 Unit 18	<u>Use repeated addition of a unit fraction to form a non-unit fraction</u>		
	<u>Use repeated addition of a unit fraction to form 1</u>		
	<u>Add fractions with the same denominator</u>		
	<u>Subtract fractions with the same denominator</u>		
	<u>Subtract fractions from a whole by converting the whole to a fraction</u>		

Term 4 – Multiplication and Division + Y4 Fractions

Unit	Objective	Ready to Progress Criteria	Assessment
Y4 Unit 12	<u>Explain what each factor represents in a multiplication equation</u>	4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication	
	<u>Explain how each part of a multiplication and division equation relates to a story</u>		
	<u>Explain where zero can be part of a multiplication or division expression and the impact it has</u>		
	<u>Partition one of the factors in a multiplication equation using representations</u>		
	<u>Explain which is the most efficient factor to partition to solve a multiplication problem</u>		
Y4 Unit 13	<u>Use knowledge of the distributive law to solve two part problems</u>	4MD–3 Understand and apply the distributive property of multiplication	
	<u>Use knowledge of the distributive law to solve further two-part problems</u>		
	<u>Use knowledge of the distributive law to calculate products using known times tables</u>		
	<u>Use knowledge of the distributive law to calculate products beyond known times tables</u>		
	<u>Use knowledge of the distributive law to solve problems in different contexts</u>		
Y4 Unit 25	<u>Represent division by grouping with multiplication and addition equations</u>	4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders	
	<u>Solve division problems involving grouping, including those with remainders</u>		
	<u>Represent division by sharing with equations</u>		
	<u>Solve division problems involving sharing, including those with remainder</u>		
	<u>Use multiplication facts to answer division questions</u>		
	<u>Explain how the remainder relates to the divisor in a division equation</u>		
	<u>Identify when there will be a remainder</u>		
	<u>Use knowledge of division equations and remainders to solve problems</u>		
	<u>Decide what to do with the answer to a division calculation to solve a problem</u>		
Y4 Unit 17	<u>Quantities that are made up of both whole numbers and a fractional part</u>	4F–1 Reason about the location of mixed numbers in the linear number system	
	<u>Explain how a mixed number is composed</u>		
	<u>Compose and decompose mixed numbers</u>		
	<u>Solve problems involving mixed numbers</u>		
	<u>Accurately label a range of number lines</u>		
Y4 Unit 18	<u>Identify numbers on marked but unlabelled number lines</u>	4F–2 Convert mixed numbers to improper fractions and vice versa	
	<u>Estimate the position of a number on a number line using fraction sense</u>		
	<u>Compare and order mixed numbers using fraction sense</u>		
	<u>Compare mixed numbers when the numerators of fractional parts are different</u>		
	<u>Compare mixed numbers when the denominators of fractional parts are different</u>		

Term 5 – Y4 Fractions

Unit	Objective	Ready to Progress Criteria	Assessment
Y4 Unit 19	<u>Efficiently solve addition problems (within a whole)</u>	4F–3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers	
	<u>Efficiently solve subtraction problems (within a whole)</u>		
	<u>Express an amount of quarters as a mixed number and an improper fraction.</u>		
	<u>Express an amount of fifths as a mixed number and an improper fraction.</u>		
	<u>Express a quantity as a mixed number and an improper fraction</u>		
Y4 Unit 20	<u>Convert a number of quarters from an improper fraction to a mixed number</u>		
	<u>Convert a number of fifths from an improper fraction to mixed number</u>		
	<u>Explain how an improper fraction is converted into a mixed number</u>		
	<u>Explain how a mixed number is converted into an improper fraction</u>		
	<u>Solve problems involving converting between mixed numbers and improper fractions</u>		
Y4 Unit 21	<u>Add mixed numbers crossing the whole</u>		
	<u>Subtract a proper fraction from a mixed number crossing the whole</u>		
	<u>Subtract a mixed number from a mixed number</u>		
	<u>Choose efficient approaches when subtracting mixed numbers</u>		
	<u>Solve problems involving addition and subtraction of mixed numbers</u>		

Term 5 and 6 – Measure & Geometry (Cycle A)

Unit	Objective	Ready to Progress Criteria	Assessment
Y3 Unit 4	<u>Estimate in metres and describe a metre in different ways</u>	3NPV–4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	
	<u>Measure length and height from zero using whole m or cm</u>		
	<u>Converting between metres and centimetres</u>		
	<u>Millimetres as a unit of measure and the relationship between them and cm</u>		
	<u>Measuring length and height using cm and mm</u>		
	<u>Converting between centimetres and millimetres</u>		
	<u>Estimate and measure lengths and heights and record in a table</u>		
	<u>Using graphs to represent lengths and heights</u>		
	<u>Solve problems involving length</u>		
	<u>Solve problems involving length and height</u>		
Y3 Unit 6	<u>Become familiar with scales with different intervals when measuring in grams</u>	3NPV–4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	
	<u>Measure the mass of objects using grams</u>		
	<u>Measure mass in whole kilograms and grams</u>		
	<u>Understanding capacity and volume</u>		
	<u>Measuring the volume of liquids using millilitres.</u>		
	<u>Measure volume in whole litres and millilitres</u>		
	<u>Comparing and estimating mass and volume</u>		
	<u>Estimate then measure mass and volume and record in a table</u>		
	<u>Solve problems involving mass</u>		
	<u>Solve problems involving volume</u>		

Y4 Unit 3	Use knowledge of 1,000 to explain common measure conversions	4NPV-1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.	
	Partitioning 1,000 in the context of measures		
	Partitioning 1,000 and 2,000 in the context of measures		
	Use knowledge of measure conversions to interpret graphs and tables		
	Use efficient strategies and common measure conversions to solve problems in a range of contexts		
Y3 Unit 20	Tell and write the time to the nearest minute past		
	Tell and write the time to the nearest minute past and to		
	Estimate and compare the duration of events and tasks		
	Tell and write the time including using Roman numerals		
	am and pm		
	Know the number of days in each month, year and leap year		
	How many seconds in a minute		
Y4 Unit 24	Read the time on a 12 and 24 hour digital clock		
	Convert between times given in 12 and 24 hours		
	Convert from hours to minutes and minutes to seconds		
	Convert from days to weeks and months to years		
	Solve problems involving writing, telling and converting the time		
Burst Project	Y4 Unit 6 – Perimeter	4G-1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant 4G-2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons. 4G-3 Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry	
	Y4 Unit 15 – Coordinates		
	Y4 Unit 22 - Properties of 2D and 3D shapes and symmetry		

Term 5 and 6 – Measure & Geometry (Cycle B)

Unit	Objective	Ready to Progress Criteria	Assessment
Y4 Unit 23	Explain and represent whole pounds as a quantity of money	3AS–3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction	
	Explain and represent whole pounds and pence as a quantity of money		
	Explain how to compare amounts of money without converting		
	Convert quantities of money between pounds and pence		
	Use knowledge of addition to add commonly used prices efficiently		
	Use knowledge of subtraction to calculate change when paying with whole pounds or notes		
	Use and explain the most efficient strategies when adding quantities of money		
	Use and explain the most efficient strategies when subtracting quantities of money		
	Calculate change when purchasing several items		
	Solve a range of problems, including finding change		
Y3 Unit 7	Make different sized angles by rotating two lines around a fixed point	3G–1 Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations	
	Identify and describe right angles		
	Know that a right angle describes a quarter turn		
	Identify properties of triangles		
	Identify properties of quadrilaterals		
	Know that a rectangle is a four-sided polygon with four right angles		
	Know that a square is a rectangle in which the four sides are of equal length		
	Investigate the shapes made when rectangles are cut on the diagonal		
	Join four right angles at a point using different right-angled polygons		
	Investigate and draw other polygons with right angles		
Y3 Unit 19	Make shapes by joining two polygons in different ways	3G–2 Draw polygons by joining marked points, and identify parallel and perpendicular sides	
	Investigate different ways of decomposing a polygon		
	Draw polygons on isometric paper		
	Construct quadrilaterals with and without parallel and perpendicular sides		
	Make and draw shapes with and without parallel and perpendicular sides		
	Identifying parallel lines		
	Make and draw triangles on circular geoboards		
	Make and draw quadrilaterals on circular geoboards		
	Draw shapes with given properties		
	Draw shapes with given properties on a range of geometric grids		
Burst Project	Y4 Unit 6 – Perimeter Y4 Unit 15 – Coordinates Y4 Unit 22 - Properties of 2D and 3D shapes and symmetry	4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant 4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons. 4G–3 Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry	