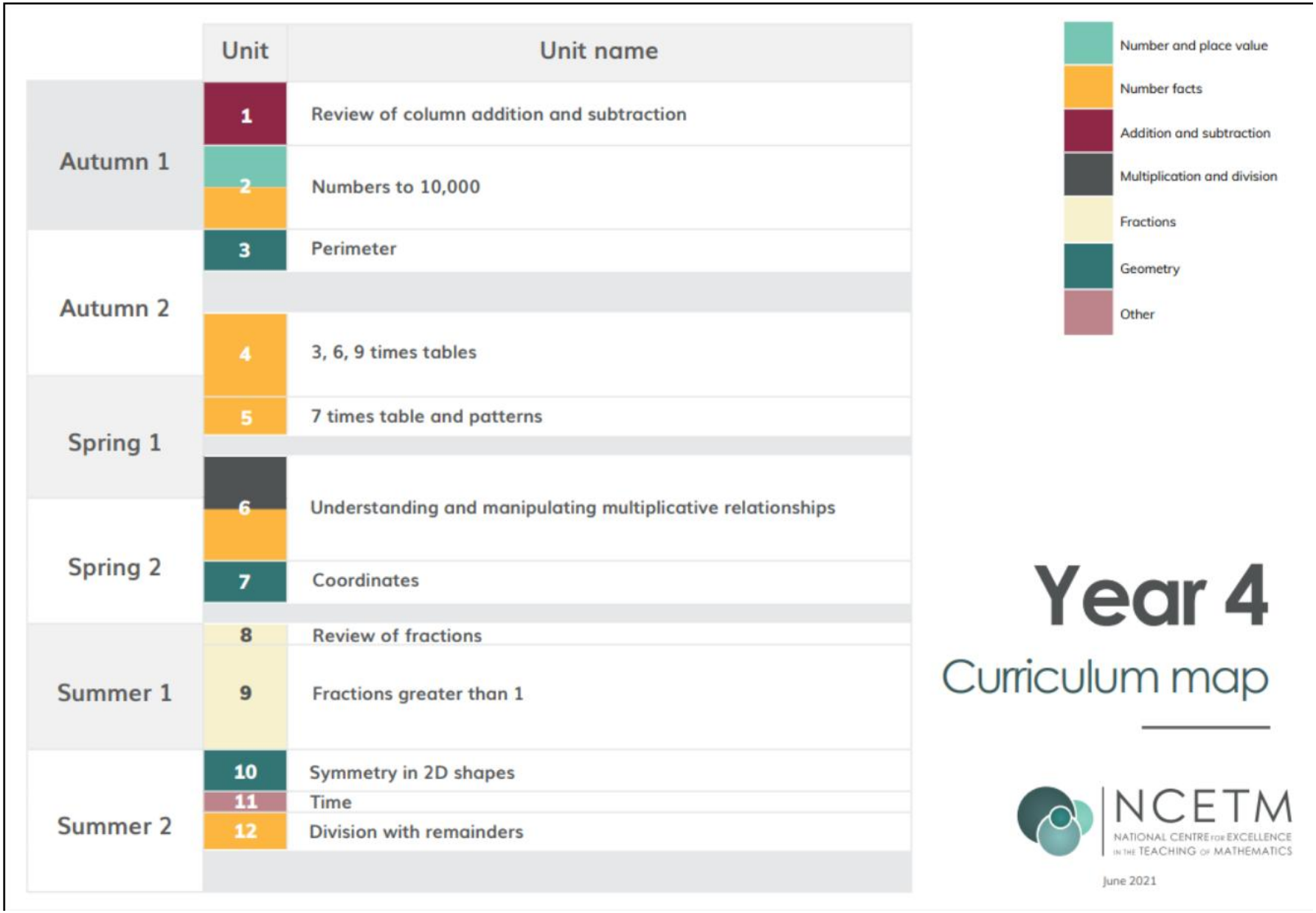
Mathematics

Year 4 Planning

This is a working document - Teachers make changes, where appropriate, based on term dates/events and both formative and summative assessment.

Follow the link below to access the interactive copy of this curriculum map. Click on the domain to download the learning objectives for each domain.
https://www.ncetm.org.uk/classroom-resources/cp-year-4-curriculum-map/



Year 4

1 Review of column addition and subtraction

- 3AS–2 Add and subtract up to three-digit numbers using columnar methods.
- 1.20 Algorithms: column addition
- 1.21 Algorithms: column subtraction

2 Numbers to 10,000

- 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.
- 4NPV–2 Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning.
- 4NPV–3 Reason about the location of any four-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).
- 1.22 Composition and calculation: 1,000 and four-digit numbers

3 Perimeter

- 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.
- 2.16 Multiplicative contexts: area and perimeter 1

4 3, 6, 9 times tables

- 4NF–1 Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number.
- 2.8 Times tables: 3, 6 and 9, and the relationship between them

5 7 times table and patterns

- 4NF–1 Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number.
- 2.9 Times tables: 7 and patterns within/across times tables

6 Understanding and manipulating multiplicative relationships

- 4MD–1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.
- 4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.
- 4MD–3 Understand and apply the distributive property of multiplication.
- 4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)
- 2.10 Connecting multiplication and division, and the distributive law
- 2.13 Calculation: multiplying and dividing by 10 or 100

7 Coordinates

- 4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.

8 Review of fractions

- 3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.
- 3.1 Preparing for fractions: the part–whole relationship

9 Fractions greater than 1

- 4F–1 Reason about the location of mixed numbers in the linear number system.
- 4F–2 Convert mixed numbers to improper fractions and vice versa.
- 4F–3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.
- 3.5 Working across one whole: improper fractions and mixed numbers

10 Symmetry in 2D shapes

- 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.

11 Time

- **This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery PD Materials.**

12 Division with remainders

- 4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders.
- 2.12 Division with remainders

Number and place value
Number facts
Addition and subtraction
Multiplication and division
Fractions
Geometry
Other

Dark grey references are ready-to-progress criteria from the DfE Guidance 2020

Light grey references are from the NCETM Primary Mastery Professional Development materials

Both are available online

Year 4 Autumn Term NCETM CP

	Week 1 - Week 3	Week 4 – Week 8	Week 9 – Week 10	Week 12 – Week 13
	Unit 1: Review of Column Addition & Subtraction	**Unit 2: Numbers to 10,000**	**Unit 3: Perimeter**	**Unit 4: 3, 6, 9 Times Tables**
NCETM CP Small Steps	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils identify the addends and the sum in column addition **Step 2:** Pupils use their knowledge of place value to correctly lay out column addition **Step 3:** Pupils add a pair of 2-digit numbers using column addition **Step 4:** Pupils add using column addition **Step 5:** Pupils use their knowledge of column addition to solve problems **Step 6:** Pupils add a pair of 2-digit numbers using column addition with regrouping in the ones column **Step 7:** Pupils add a pair of 2-digit numbers using column addition with regrouping in the tens column **Step 8:** Pupils add using column addition with regrouping **Step 9:** Pupils use known facts and strategies to accurately and efficiently calculate and check column addition **Step 10:** Pupils use their knowledge of column addition to solve problems **Step 11:** Pupils identify the minuend and the subtrahend in column subtraction **Step 12:** Pupils subtract using column subtraction **Step 13:** Pupils subtract from a 2-digit number using column subtraction with exchanging from tens to ones **Step 14:** Pupils subtract from a 3-digit number using column subtraction with exchanging from hundreds to tens (1) **Step 15:** Pupils subtract from a 3-digit number using a column subtraction with exchanging from hundreds to tens (2) **Step 16:** Pupils evaluate the efficiency of strategies for subtraction **POST ASSESSMENT and ADDRESS GAPS**	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils explain how many tens, hundreds and ones 1,000 is composed of **Step 2:** Pupils use knowledge of 1,000 to explain common measure conversions **Step 3:** Pupils use knowledge of 1,000 to solve problems **Step 4:** Pupils use different strategies to add multiples of 100 **Step 5:** Pupils use different strategies to subtract multiples of 100 **Step 6:** Pupils use knowledge of calculation and common measure conversions to solve problems **Step 7:** Pupils compose and decompose four-digit numbers in different ways **Step 8:** Pupils use strategies to make solving calculations more efficient **Step 9:** Pupils compare and order four-digit numbers **Step 10:** Pupils calculate efficiently by using knowledge of place value, addition and subtraction **Step 11:** Pupils explain what rounding is **Step 12**: Pupils round a four-digit number to the nearest thousand **Step 13:** Pupils round a four-digit number to the nearest hundred and ten **Step 14:** Pupils round a four-digit number to the nearest thousand, hundred and ten **Step 15:** Pupils add up to 3 four-digit numbers using a column addition **Step 16:** Pupils subtract four-digit numbers using a column subtraction **Step 17:** Pupils use strategies to make solving calculations more efficient **Step 18**: Pupils explain how many '100s' and '200s', 1,000 is composed of **Step 19:** Pupils explain how many '500s' and '250s', 1,000 is composed of **POST ASSESSMENT and ADDRESS GAPS**	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** A regular polygon has sides that are all the same length and interior angles that are all equal in size **Step 2:** Perimeter is the distance around the edge of a two-dimensional shape **Step 3:** Different shapes can have the same perimeter **Step 4:** Perimeter is measured in units of length and can be found by counting units **Step 5:** Perimeter can be calculated by adding together the side lengths of a 2D shape **Step 6:** The perimeter of a rectangle can be calculated by addition and multiplication **Step 7:** Unknown side lengths can be calculated from perimeter and known side lengths **Step 8:** The perimeter of a regular polygon can be calculated by multiplication **Step 9**: The side length of a regular polygon can be calculated by division where the perimeter is known **POST ASSESSMENT and ADDRESS GAPS**	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils represent counting in threes as the three times table **Step 2:** Pupils explain the relationship between adjacent multiples of three **Step 3:** Pupils use knowledge of the three times table to solve problems **Step 4:** Pupils represent counting in sixes as the six times table **Step 5**: Pupils explain the relationship between adjacent multiples of six **Step 6:** Pupils use knowledge of the six times table to solve problems **Step 7:** Pupils use known facts from the five times table to solve problems involving the six times table **Step 8:** Pupils explain the relationship between multiples of three and multiples of six **Step 9:** Pupils use knowledge of the relationships between the three- and six-times tables to solve problems **Step 10:** Pupils represent counting in nines as the nine times table **Step 11:** Pupils explain the relationship between adjacent multiples of nine (1) **Step 12:** Pupils explain the relationship between adjacent multiples of nine (2) **Step 13:** Pupils use known facts from the ten times table to solve problems involving the nine times table **Step 14:** Pupils explain the relationship between multiples of three and multiples of nine **Step 15:** Pupils explain the relationship between pairs of three- and nine-times table facts that have the same product (1) **Step 16:** Pupils explain the relationship between pairs of three- and nine-times table facts that have the same product (2) **Step 17:** Pupils use the divisibility rules for divisors of three **Step 18:** Pupils use the divisibility rules for divisors of six (1) **Step 19:** Pupils use the divisibility rules for divisors of six (2) **POST ASSESSMENT and ADDRESS GAPS**
Prior Learning Assessment Criteria	**3AS-2** Add and subtract up to three-digit numbers using columnar methods.	**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-2** Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit		**3NF-2** Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.

		numbers using standard and non-standard partitioning. **3NPV-3** Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 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)				
RTP Assessment Criteria	**3AS-2** Add and subtract up to three-digit numbers using columnar methods.	**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. **4NPV-2** Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning. **4NPV-3** Reason about the location of any four-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)	**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.	**4NF-1** Recall multiplication and division facts up to 12 12 × , and recognise products in multiplication tables as multiples of the corresponding number		
Problem Solving	Engage with mathematical activities and problems, making links and moving between different representations (concrete, pictorial, abstract). Independently choose to scaffold thinking using concrete, pictorial or abstract representations, if required. Independently choose to represent thinking using concrete, pictorial or abstract representations, as appropriate. Make suggestions of ways to solve a range of problems. Develop and apply a systematic approach. Find and predict possibilities that match the context using patterns spotted to support. Independently check and improve work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve). Pattern spot and with support, express generalisations/rules in words. Make and investigate conjectures and provide examples and counter-examples. When they have solved a problem, pose a similar problem for a peer.		**EXS** For all mathematical concepts, ideas and techniques: Represent it in a variety of ways *(e.g. using concrete materials, pictures and symbols – the CPA approach).* Make up his or her own examples *(and non-examples)* of it. See connections between it and other facts or ideas. Recognise it in new situations and contexts. Make use of it in various ways, including in new situations.	**GDS** Solve problems of greater complexity *(i.e. where the approach is not immediately obvious),* demonstrating creativity and imagination. Independently explore and investigate mathematical contexts and structures.		
Reasoning	Provide a clear, correct, logical justification and with support, express generalisation/rules formed in words. Reflect on others' justifications and use this to improve their work. Edit and improve their own and a peer's justification. Investigate 'what if?' questions. Create 'what if?' questions.		Describe it in his or her own words. Explain it to someone else.	Communicate results clearly and systematically explain and generalise the mathematics.		

The first Friday and the final Friday of each half term are to be Problem Solving lessons focussing on reasoning and problem solving: See school calendar for dates

Year 4 Spring Term NCETM CP

	Week 1 - Week 2	Week 3 – Week 7		Week 8 – Week 9	Week 11	
	Unit 5: 7 Times Table Patterns	**Unit 6: Understanding and Manipulating Multiplicative Relationships**		**Unit 7: Coordinates**	**Unit 8: Review of Fractions**	
NCETM CP Small Steps	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils represent counting in sevens as the 7 times table **Step 2:** Pupils explain the relationship between adjacent multiples of seven **Step 3:** Pupils use their knowledge of the 7 times table to solve problems **Step 4:** Pupils identify patterns of odd and even numbers in the times tables **Step 5:** Pupils represent a square number **Step 6:** Pupils use knowledge of divisibility rules to solve problems **POST ASSESSMENT and ADDRESS GAPS**	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils explain what each factor represents in a multiplication equation **Step 2:** Pupils explain how each part of a multiplication and division equation relates to a story **Step 3:** Pupils explain where zero can be part of a multiplication or division expression and the impact it has **Step 4:** Pupils partition one of the factors in a multiplication equation in different ways using representations (I) **Step 5:** Pupils partition one of the factors in a multiplication equation in different ways using representations (II) **Step 6:** Pupils explain which the most efficient factor is to partition to solve a multiplication problem **Step 7**: Pupils use knowledge of distributive law to solve two-part addition and subtraction problems, efficiently **Step 8:** Pupils use knowledge of distributive law to calculate products beyond known times tables facts **Step 9:** Pupils explain the relationship between multiplying a number by 10 and multiples of 10 **Step 10:** Pupils explain why a zero can be placed after the final digit of a single-digit number when we multiply it by 10 **Step 11:** Pupils explain why a zero can be placed after the final digit of a two-digit number when we multiply it by 10 **Step 12:** Pupils explain why the final digit zero can be removed from a two-digit multiple of 10, when we divide by 10 **Step 13**: Pupils explain why the final digit zero can be removed from a three-digit multiple of 10, when we divide by 10 **POST ASSESSMENT and ADDRESS GAPS**	**Step 14:** Pupils explain the relationship between multiplying a number by 100 and multiples of 100 **Step 15:** Pupils explain why two zeros can be placed after the final digit of a single-digit number when we multiply it by 100 **Step 16:** Pupils explain why two zeros can be placed after the final digit of a two-digit number when we multiply it by 100 **Step 17:** Pupils explain why the last two zeros can be removed from a three-digit multiple of 100 when we divide it by 100 **Step 18:** Pupils explain why the last two zeros can be removed from a four-digit multiple of 100 when we divide it by 100 **Step 19**: Pupils use knowledge of the composition of 100 to multiply by 100 in different ways **Step 20:** Pupils use knowledge of the composition of 100 to divide by 100 in different ways **Step 21**: Pupils explain how making a factor 10 times the size affects the product **Step 22:** Pupils explain how making the dividend 10 times the size affects the quotient **Step 23**: Pupils explain how making a factor 100 times the size affects the product **Step 24:** Pupils explain how making the dividend 100 times the size affects the quotient **Step 25:** Pupils scale known multiplication facts by 100 **Step 26:** Pupils scale division derived from multiplication facts by 100 **POST ASSESSMENT and ADDRESS GAPS**	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils give directions from one position to another on a grid **Step 2**: Pupils move objects including polygons on a grid according to directions, and mark the new position **Step 3:** Pupils describe translations of polygons drawn on a square grid **Step 4:** Pupils draw polygons specified by translations **Step 5:** Pupils mark points specified as a translation from the origin **Step 6:** Pupils mark the position of points specified by coordinates in the first quadrant of a coordinate grid, and write coordinates for already-marked points **Step 7:** Pupils draw polygons specified by coordinates in the first quadrant **Step 8:** Pupils translate polygons in the first quadrant **POST ASSESSMENT and ADDRESS GAPS**	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils identify a whole and the parts that make it up **Step 2:** Pupils explain why a part can only be defined when in relation to a whole **Step 3:** Pupils identify the number of equal or unequal parts in a whole **Step 4:** Pupils identify equal parts when they do not look the same **Step 5**: Pupils explain the size of the part in relation to the whole **Step 6:** Pupils construct a whole when given a part and the number of parts **POST ASSESSMENT and ADDRESS GAPS**	
Prior Learning Assessment Criteria	**3NF-2** Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	**3NF-3** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10),		**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. **3G-2** Draw polygons by joining marked points, and identify parallel and perpendicular sides.		

RTP Assessment Criteria	**4NF-1** Recall multiplication and division facts up to 12 x 12, and recognise products in multiplication tables as multiples of the corresponding number.	**4MD-1** Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. **4MD-2** Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. **4MD-3** Understand and apply the distributive property of multiplication. **4NF-3** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)	**4G-1** Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.	**3F-1** Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts	

Problem Solving	Engage with mathematical activities and problems, making links and moving between different representations (concrete, pictorial, abstract). Independently choose to scaffold thinking using concrete, pictorial or abstract representations, if required. Independently choose to represent thinking using concrete, pictorial or abstract representations, as appropriate. Make suggestions of ways to solve a range of problems. Develop and apply a systematic approach. Find and predict possibilities that match the context using patterns spotted to support. Independently check and improve work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve). Pattern spot and with support, express generalisations/rules in words. Make and investigate conjectures and provide examples and counter-examples. When they have solved a problem, pose a similar problem for a peer.	**EXS** For all mathematical concepts, ideas and techniques: Represent it in a variety of ways *(e.g. using concrete materials, pictures and symbols – the CPA approach).* Make up his or her own examples *(and non-examples)* of it. See connections between it and other facts or ideas. Recognise it in new situations and contexts. Make use of it in various ways, including in new situations.	**GDS** Solve problems of greater complexity *(i.e. where the approach is not immediately obvious),* demonstrating creativity and imagination. Independently explore and investigate mathematical contexts and structures.
Reasoning	Provide a clear, correct, logical justification and with support, express generalisation/rules formed in words. Reflect on others' justifications and use this to improve their work. Edit and improve their own and a peer's justification. Investigate 'what if?' questions. Create 'what if?' questions.	Describe it in his or her own words. Explain it to someone else.	Communicate results clearly and systematically explain and generalise the mathematics.

The first Friday and the final Friday of each half term are to be Problem Solving lessons focussing on reasoning and problem solving: See school calendar for dates

Year 4 Summer Term NCETM CP

	Week 1 - Week 5	Week 6 – Week 7	Unit to be taught throughout the year in basic skills/memory joggers etc	Week 8 – Week 10	Week 12 – 13
	Unit 9: Fractions Greater Than 1	**Unit 10: Symmetry in 2D Shapes**	**Unit 11: Time**	**Unit 12: Division with Remainders**	
NCETM CP Small Steps	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils explain how to express quantities made up of both whole numbers and a fractional part **Step 2:** Pupils explain how a quantity made up of whole numbers and a fractional part is composed **Step 3:** Pupils compose and decompose quantities made of whole numbers and fractional parts **Step 4:** Pupils accurately label a range of number lines and explain the meaning of each part **Step 5:** Pupils identify numbers on marked but unlabelled number lines **Step 6**: Pupils estimate the position of numbers on a number line using fraction sense **Step 7:** Pupils compare and order mixed numbers using fraction sense Step **8:** Pupils compare and order mixed numbers when the whole number is the same **Step 9:** Pupils compare and order mixed numbers when the whole number and the numerator of the fractional part is the same **Step 10:** Pupils make efficient choices about the order they solve an addition problem in **Step 11:** Pupils make efficient choices about the order they solve a subtraction problem in **Step 12:** Pupils express a quantity as a mixed number and an improper fraction (quarters) **Step 13**: Pupils convert a quantity from an improper fraction to a mixed number (quarters) **Step 14:** Pupils express and convert a quantity from an improper fraction to a mixed number (fifths) **Step 15:** Pupils explain how an improper fraction is converted into a mixed number (any unit) **Step 16:** Pupils explain how a mixed number is converted into an improper fraction **Step 17:** Pupils add mixed numbers **Step 18:** Pupils subtract a proper fraction from a mixed number (converting to an improper fraction first) **Step 19:** Pupils subtract a mixed number from a mixed number and explain which strategy is most efficient **Step 20:** Pupils use knowledge of subtraction to choose correct and efficient approaches when subtracting mixed number **POST ASSESSMENT and ADDRESS GAPS**	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils complete a symmetrical pattern **Step 2:** Pupils compose symmetrical shapes from two congruent shapes **Step 3:** Pupils investigate lines of symmetry in 2D shapes by folding paper shape cut-outs **Step 4:** Pupils find lines of symmetry in 2D shapes using a mirror **Step 5:** Pupils reflect polygons in a line of symmetry **Step 6:** Pupils reflect polygons that are dissected by a line of symmetry **POST ASSESSMENT and ADDRESS GAPS**	Pupils should be taught to: 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. Time | NCETM	**PRE-ASSESSMENT and ADDRESS GAPS** **Step 1:** Pupils interpret a division story when there is a remainder and represent it with an equation (i) **Step 2:** Pupils interpret a division story when there is a remainder and represent it with an equation (ii) **Step 3:** Pupils interpret a division story when there is a remainder and represent it with an equation (iii) **Step 4:** Pupils explain how the remainder relates to the divisor in a division equation **Step 5:** Pupils explain when there will and will not be a remainder in a division equation **Step 6:** Pupils use knowledge of division equations and remainders to solve problems **Step 7:** Pupils interpret the answer to a division calculation to solve a problem (i) **Step 8:** Pupils interpret the answer to a division calculation to solve a problem (ii) **POST ASSESSMENT and ADDRESS GAPS**	**Week 12 – 13 Consolidation/ Address gaps prior to Y5**

Prior Learning Assessment Criteria	**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.				
RTP Assessment Criteria	**4F-1** Reason about the location of mixed numbers in the linear number system. **4F-2** Convert mixed numbers to improper fractions and vice versa. **4F-3** Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers	**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		**4NF-2** Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders	

		EXS	**GDS**
Problem Solving	Engage with mathematical activities and problems, making links and moving between different representations (concrete, pictorial, abstract). Independently choose to scaffold thinking using concrete, pictorial or abstract representations, if required. Independently choose to represent thinking using concrete, pictorial or abstract representations, as appropriate. Make suggestions of ways to solve a range of problems. Develop and apply a systematic approach. Find and predict possibilities that match the context using patterns spotted to support. Independently check and improve work (e.g. look for other possibilities, repeats, missing answers, errors and ways to improve). Pattern spot and with support, express generalisations/rules in words. Make and investigate conjectures and provide examples and counter-examples. When they have solved a problem, pose a similar problem for a peer.	For all mathematical concepts, ideas and techniques: Represent it in a variety of ways *(e.g. using concrete materials, pictures and symbols – the CPA approach).* Make up his or her own examples *(and non-examples)* of it. See connections between it and other facts or ideas. Recognise it in new situations and contexts. Make use of it in various ways, including in new situations.	Solve problems of greater complexity *(i.e. where the approach is not immediately obvious),* demonstrating creativity and imagination. Independently explore and investigate mathematical contexts and structures.
Reasoning	Provide a clear, correct, logical justification and with support, express generalisation/rules formed in words. Reflect on others' justifications and use this to improve their work. Edit and improve their own and a peer's justification. Investigate 'what if?' questions. Create 'what if?' questions.	Describe it in his or her own words. Explain it to someone else.	Communicate results clearly and systematically explain and generalise the mathematics.

The first Friday and the final Friday of each half term are to be Problem Solving lessons focussing on reasoning and problem solving: See school calendar for dates