Holy Cross and St Joseph's Catholic Primary School

Maths Progression Framework

Purpose

The purpose of this document is to show the progression of maths skills across the curriculum, making links to White Rose Maths and 'The Ready to Progress' criteria published by the DfE.

Assessment

All schools will utilise the White Rose end-of-unit assessments in conjunction with the 'Ready to Progress' criteria to ensure consistent and rigorous tracking of pupil progress. This assessment framework is further enhanced by live marking within lessons and embedded formative assessment opportunities, enabling timely feedback and responsive teaching."

Place Value

H	T	U
3	5	4

Place Value: Count 

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives	***Development matters (3-4yr olds)*** - Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). - RecitSe numbers past 5. - Say one number for each item in order: 1,2,3,4,5. - To know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). - Show 'finger numbers' up to 5. - Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. ***Reception*** - To count objects, actions and sounds. - To subitise - To count beyond 10	- To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number - To count, read and write numbers to 100 in numerals - To count in multiples of 2s, 5s and 10s	-To count in steps 2, 3 and 5 from 0. -To count in steps of 10 from any number, forwards and backward.	-To count from 0 in multiples of 4, 8, 50 and 100. -To find 10 or 100 more or less than a given number.	-To count in multiples of 6, 7, 9, 25 and 1000. -To count backwards through zero to include negative numbers (Negative numbers has been moved into Y5 inline with the NCETM RTP materials and curriculum prioritisation)	-To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	-To consolidate knowledge, skills and understanding from previous year groups.
White Rose Block link		Autumn 1, Spring 1, Spring 3 and Summer 4	Autumn 1	Autumn 1 and 3	Autumn 1 and 4	Autumn 1 and 4	

Place Value: Represent

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives	***Development matters (3-4yr olds)*** -To show 'finger numbers' up to 5. -To link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. -To experiment with own symbols and marks as well as numerals. **Reception** -To link the number symbol (numeral) with its cardinal number value	-To identify and represent numbers using objects and pictorial representations, including the number line. -To use the language of equal to, more than, less than (fewer), most, least. -To read and write numbers to 100 in numerals. -To read and write numbers from 1 to 20 in numerals and words.	-To read and write numbers to at least 100 in numerals and words. -To identify, represent and estimate numbers using different representations, including the number line.	-To continue to identify, represent and estimate numbers using different representations. -To read and write numbers up to 1000 in numerals and words.	-To continue to identify, represent and estimate numbers using different representations. -To read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	-To read and write numbers to at least 1,000,000. -To read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	-To read and write numbers up to 10,000,000.
White Rose Block link		Autumn 1 Spring 1 Spring 3 Summer 4	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1

Place Value: Use and Compare

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives	***Development matters (3-4yr olds)*** -To compare quantities using language 'more than', 'fewer than'. **Reception** -To compare numbers. -To understand the 'one more than/ one less than' relationship between consecutive numbers	-To identify 1 more and 1 less than a given number.	-To recognise the place value of each digit in a 2-digit number. (10s and 1s) -To compare and order numbers from 0 up to 100. -To use the =, <, > signs.	-To recognise the value of each digit in a 3-digit number. (100s, 10s and 1s) -To compare and order numbers up to 1000.	-To find 1000 more or less than a given number. -To recognise the place value of each digit in a 4-digit number. (1000s, 100s, 10s and 1s) -To order and compare numbers beyond 1000.	-To order and compare numbers up to 1,000,000. -To determine the value of each digit in numbers up to 1,000,000.	-To order and compare numbers up to 10,000,000. -To determine the value of each digit in numbers up to 10,000,000.
White Rose Block link		Autumn 1 Spring 1 Spring 3 Summer 4	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1

Place Value: Problems/ Rounding

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives			-To use place value and number facts to solve problems.	-To continue to solve number problems and practical problems.	-To round any number up to 100,000 to the nearest 10, 100 or 1000. -To solve number problems and practical problems involving rounding in positive numbers.	-To interpret negative numbers in context. -To count forwards and backward with positive and negative whole numbers, including through zero. -To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000. -To continue to solve number problems and practical problems using negative numbers and rounding positive numbers.	-To round any whole number to a required degree of accuracy. -To use negative numbers in context and calculate intervals across zero. -To solve number and practical problems involving rounding and calculating intervals across zero.
White Rose Block link		Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1

Place value: Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Count	Sort	Count in steps	Ascending	Negative numbers	Ten thousand	Millions
Subitise	Represent	Count in multiples	Descending	Roman numerals	One hundred thousand	Ten million
Order/ ordinal	Multiples	Place value	Ten or 100 more	Thousand more	Powers of	
Compare	Partitioning	Estimate	Ten or 100 less	Thousand less	Integer	
Forwards	Ones	compare	Hundreds	Thousands	Negative Numbers	
Backwards	Tens			Round		
Numerals						
Digit						
One more						
One less						
Equal to						
More than						
Less than/ fewer						

Year 1 RTP Place value

Ready to progress criteria	Block	Steps
1NPV-1 Count within 100, forwards and backwards, starting with any number.	Autumn 1	6 – Count on from any number 8 – Count backwards within 10
	Spring 1	1 – Count within 20
	Spring 3	1 – Count from 20 to 50
	Summer 4	1 – Count from 50 to 100
1NPV-2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =	Autumn 1	11 – Fewer, more, same 12 – Less than, greater than, equal to 13 – Compare numbers 14 – Order objects and numbers 15 – The number line
	Spring 1	7 – 1 more and 1 less 8 – The number line to 20 9 – Use a number line to 20 10 – Estimate on a number line to 20 11 – Compare numbers to 20 12 – Order numbers to 20

Year 2 RTP Place value

Ready to progress criteria	Block	Steps
2NPV-1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning.	Autumn 1	3 – Recognise tens and ones 4 – Use a place value chart 5 – Partition numbers to 100 7 – Flexibly partition numbers to 100 8 – Write numbers in expanded form
2NPV-2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10	Autumn 1	9 – 10s on the number line to 100 10 – 10s and 1s on the number line to 100 11 – Estimate numbers on the number line

Year 3 RTP Place value

Ready to progress criteria	Block	Steps
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	Autumn 1	4 – Hundreds
	Autumn 2	10 – Make connections
	Autumn 3	4 – Multiples of 5 and 10
3NPV-2 Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning.	Autumn 1	5 – Represent numbers to 1,000 6 – Partition numbers to 1,000 7 – Flexible partitioning of numbers to 1,000 8 – Hundreds, tens and ones
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	Autumn 1	9 – Find 1, 10 or 100 more or less 10 – Number line to 1,000 11 – Estimate on a number line to 1,000 12 – Compare numbers to 1,000 13 – Order numbers to 1,000
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.	Autumn 1	10 – Number line to 1,000 11 – Estimate on a number line to 1,000 14 – Count in 50s
	Spring 4	1 – Use scales

Year 4 RTP Place value

Ready to progress criteria	Block	Steps
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	Autumn 1	4 - Thousands
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.	Autumn 1	5 – Represent numbers to 10,000 6 – Partition numbers to 10,000 7 – Flexible partitioning of numbers to 10,000
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.	Autumn 1	8 – Find 1, 10, 100, 1,000 more or less 9 – Number line to 10,000 10 – Estimate on a number line to 10,000 11 – Compare numbers to 10,000 12 – Order numbers to 10,000 14 – Round to the nearest 10 15 – Round to the nearest 100 16 – Round to the nearest 1,000 17 – Round to the nearest 10,000
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.	Autumn 1	9 – Number line to 10,000 10 – Estimate on a number line to 10,000

Year 5 RTP Place value

Ready to progress criteria	Block	Steps
5NPV-1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01	Spring 3	1 – Decimals up to 2 decimal places 2 – Equivalent fractions and decimals (tenths) 3 – Equivalent fractions and decimals (hundredths)
5NPV-2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning.	Spring 3	1 – Decimals up to 2 decimal places
5NPV-3 Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.	Spring 3	8 – Order and compare decimals (same number of decimal places) 9 – Order and compare any decimals with up to 3 decimal places 10 – Round to the nearest whole number 11 – Round to 1 decimal place
5NPV-4 Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.	Spring 3	4 – Equivalent fractions and decimals
5NPV-5 Convert between units of measure, including using common decimals and fractions.	Summer 5	1 – Kilograms and kilometres 2 – Millimetres and millilitres 3 – Convert units of length 4 – Convert between metric and imperial 5 – Convert units of time

Year 6 RTP Place value

Ready to progress criteria	Block	Steps
6NPV-1 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).	Autumn 1	4 – Powers of 10
6NPV-2 Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.	Autumn 1	1 – Numbers to 1,000,000 2 – Numbers to 10,000,000 3 – Read and write numbers to 10,000,000
6NPV-3 Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.	Autumn 1	6 – Compare and order any integers 7 – Round any integers
6NPV-4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.	Autumn 1	5 – Number line to 10,000,000
	Autumn 5	2 – Convert metric measures
	Spring 3	1 – Place value within 1 2 – Integers and decimals

Addition and subtraction

3+1+2=

3-1-2=

Addition and subtraction: Recall, representing and using

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives	<u>Reception</u> -To explore the composition of numbers to 10. -To automatically recall number bonds for numbers 1-10.	-To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. -To represent and use number bonds and related subtraction facts within 20.	-To recall and use addition and subtraction facts to 20 fluently. -To use known number bonds to 20 to find related facts up to 100. -To know and show that addition of 2 numbers can be done in any order (commutative). -To know that subtracting 1 number from another must be done in a specific order. -To recognise and use the inverse relationship between addition and subtraction to check calculations. - To recognise and use the inverse relationship between addition and subtraction to solve missing number problems.	-To estimate the answer to a calculation. -To continue to use inverse operation to check calculations.	-To continue to estimate the answer to a calculation. -To continue to use inverse operation to check calculations.	-To use rounding to check answers to calculations. -To determine, in the context of a problem, the level of accuracy required.	-To consolidate knowledge, skills and understanding from previous year groups.
White Rose Block link		Autumn 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2

Addition and subtraction: Calculations

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

National Curriculum Objectives		-To add and subtract 1-digit and 2-digit numbers to 20 including zero.	-To add and subtract numbers using concrete objects, pictorial representations and mentally: • a 2-digit number and ones • a 2-digit number and tens • two 2-digit numbers -To add three 1-digit numbers.	-To add and subtract numbers mentally including: • a 3-digit number and ones • a 3-digit number and tens • a 3-digit number and hundreds. -To add and subtract numbers with up to 3-digits, using formal written methods of columnar addition and subtraction.	-To add and subtract numbers with up to 4-digits using the formal written methods of columnar addition and subtraction when appropriate. -To decide whether a calculation requires a written method or can be done mentally.	-To add and subtract whole numbers with more than 4-digits including using formal written methods. -To add and subtract larger numbers mentally.	-To calculate mentally with larger numbers including mixed operations. -To use knowledge of the order of operations to carry out calculations involving addition, subtraction, multiplication and division.
White Rose Block link		Autumn 2 Spring 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2

Addition and subtraction: Problems

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

National Curriculum Objectives	-To solve real world mathematical problems with numbers up to 5.	-To solve 1-step problems that involve addition and subtraction, using concrete objects and pictorial representations. -To solve missing number problems using 1-digit numbers e.g. 7=__ -9	-To solve number problems that involve addition and subtraction using concrete objects, pictorial representations, written and mental methods. -To solve problems involving quantities and measures.	To solve problems, including missing number problems using number facts and place value. -To solve more complex addition and subtraction problems using written methods.	-To solve 2-step addition and subtraction problems in contexts, deciding which operation and method to use. - To explain why an operation and method have been chosen when solving problems.	-To solve multi-step addition and subtraction problems in contexts, deciding which operation and method to use. - To explain why an operation and method have been chosen when solving problems.	-To consolidate solving multi-step addition and subtraction problems in contexts, deciding which operation and method to use. - To explain why an operation and method have been chosen when solving problems.
White Rose Block link		Autumn 2 Spring 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2

Addition and subtraction: Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Add	Addition/ add	Sum	Column addition	Four-digit number		
Plus	Subtraction	Three-digit number	Column subtraction	Operations		
Altogether	Difference	Commutative	Estimate	Methods		
Total	Equals	Exchange				
Take away/ minus	Facts					
Number bonds	Problems					
Part	Missing number problems					
Whole	Two-digit number					
digit	Inverse					
First, then, and now						

Year 1 RTP Number facts

Ready to progress criteria	Block	Steps
1NF-1 Develop fluency in addition and subtraction facts within 10	Autumn 2	5 – Number bonds within 10 6 – Systematic number bonds within 10 7 – Number bonds to 10
1NF-2 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.	See under Multiplication & division	

Year 2 RTP Number facts

Ready to progress criteria	Block	Steps
2NF-1 Secure fluency in addition and subtraction facts within 10, through continued practice.	Autumn Block 2	1 – Bonds to 10 6 – Add by making 10 8 – Add to the next 10 11 – Subtract from a 10

Year 3 RTP Number facts

Ready to progress criteria	Block	Steps
3NF-1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.	Autumn Block 2	6 – Add 1s across a 10 7 – Add 10s across a 100 8 – Subtract 1s across a 10 9 – Subtract 1s across a 100 13 – Add two numbers (across a 10) 14 – Add two numbers (across a 100) 15 – Subtract two numbers (across a 10) 16 – Subtract two numbers (across a 100)
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.	See under Multiplication & division	
3NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).	See under Multiplication & division	

Year 1 RTP Addition & subtraction

Ready to progress criteria	Block	Steps
1AS-1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.	Autumn Block 2	5 – Number bonds within 10 6 – Systematic number bonds within 10 7 – Number bonds to 10
1AS-2 Read, write and interpret equations containing addition (+), subtraction (–) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.	Autumn Block 2	4 – Fact families – addition facts 8 – Addition – add together 9 – Addition – add more 10 – Addition problems 11 – Find a part 12 – Subtraction – find a part 13 – Fact families – the eight facts 14 – Subtraction – take away/cross out (How many left?) 15 – Subtraction – take away (How many left?) 16 – Subtraction on a number line
	Spring Block 2	2 – Add ones using number bonds 3 – Find and make number bonds to 20 6 – Subtract ones using number bonds 9 – Related facts 10 – Missing number problems

Year 2 RTP Addition & subtraction

Ready to progress criteria	Block	Steps
2AS-1 Add and subtract across 10	Autumn 2	9 – Add across a 10 10 – Subtract across a 10 11 – Subtract from a 10 12 – Subtract 1-digit number from a 2-digit number (across a 10)
2AS-2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?".	Autumn 2	4 – Bonds to 100 (tens) 8 – Add to the next 10
2AS-3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.	Autumn 2	9 – Add across a 10 10 – Subtract across a 10 11 – Subtract from a 10 12 – Subtract 1-digit number from a 2-digit number (across a 10) 13 – 10 more, 10 less 14 – Add and subtract 10s
2AS-4 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.	Autumn 2	15 – Add two 2-digit numbers (not across a 10) 16 – Add two 2-digit numbers (across a 10) 17 – Subtract two 2-digit numbers (not across a 10) 18 – Subtract two 2-digit numbers (across a 10) 19 – Mixed addition and subtraction
	Spring 1	7 – Calculate with money 9 – Find change
	Spring 3	5 – Four operations with lengths and heights

Year 3 RTP Addition & subtraction

Ready to progress criteria	Block	Steps
3AS-1 Calculate complements to 100	Autumn Block 2	19 – Complements to 100
	Summer 2	5 – Find change
3AS-2 Add and subtract up to three-digit numbers using columnar methods.	Autumn Block 2	11 – Add two numbers (no exchange) 12 – Subtract two numbers (no exchange) 13 – Add two numbers (across a 10) 14 – Add two numbers (across a 100) 15 – Subtract two numbers (across a 10) 16 – Subtract two numbers (across a 100) 17 – Add 2-digit and 3-digit numbers 18 – Subtract a 2-digit number from a 3-digit number
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.	Autumn Block 2	21 – Inverse operations 22 – Make decisions
	Summer 2	4 – Subtract money 5 – Find change

Year 6 RTP 4 operations

Ready to progress criteria	Block	Steps
6AS/MD-1 Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).	Spring 1	1 – Add or multiply? 2 – Use ratio language 3 – Introduction to the ratio symbol
6AS/MD-2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.	Autumn 2	8 – Solve problems with multiplication 10 – Division using factors 13 – Solve problems with division 14 – Solve multi-step problems 17 – Reason from known facts
6AS/MD-3 Solve problems involving ratio relationships.	See under Ratio and proportion	
6AS/MD-4 Solve problems with 2 unknowns.	See under Algebra	

Multiplication and Division

$3 \times 2 =$

Multiplication and Division: Recall/ Use

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives			-To recall and use multiplication and division facts for 2, 5 and 10 multiplication tables. -To identify odd and even number patterns when using the 2, 5 and 10 multiplication tables. -To know and show that multiplication of 2 numbers can be done in any order (commutative). -To know that division of one number by another cannot be done in any order.	-To recall and use multiplication and division facts for 3, 4 and 8 multiplication tables.	-To recall and use multiplication and division facts up to the 12 x 12 multiplication tables. -To use place value and known/derived facts to multiply and divide mentally. -To multiply and divide by 0 and 1. -To multiply 3 numbers together -To recognise and use factor pairs and commutativity in mental calculations.	-To identify multiples and factors, finding all factor pairs of a number. -To identify common factors of 2 numbers. -To know that a prime number will only divide by 1 and itself. -To identify the prime factors of a number. -To establish whether a number up to 100 is a prime number or a non-prime number (composite). -To record prime numbers up to 19. To use vocabulary associated with prime numbers and prime factors accurately. -To recognise and use square and cubed numbers (including the correct notations e.g. 6^2, 8^3)	-To consolidate knowledge of common factors, common multiples and prime numbers. -To continue to use estimation to check answers to calculations. -To determine, in the context of a problem, the level of accuracy required.
White Rose Block link			Spring 2	Autumn 3 Spring 1	Autumn 4 Spring 1	Autumn 3	Autumn 2

Multiplication and Division: Calculations

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives			-To calculate mathematical statements for multiplication and division facts learned. -To write multiplication calculations using the ×, ÷ and = signs.	- To calculate and write mathematical statements for multiplication tables learned. -To multiply 2-digit numbers by 1-digit numbers mentally. - To multiply 2-digit numbers by 1-digit numbers using formal written method.	-To multiply 3-digit numbers and 2-digit numbers by a 1 –digit number using a formal written method.	-To multiply up to 4-digit numbers by a 1 –digit or 2 digit number using a formal written method, including long multiplication for 2-digit numbers. -To multiply and divide numbers mentally drawing upon known facts. -To divide numbers up to 4 digits by 1 digit using the formal written method of short division. -To interpret remainders appropriately for the context. -To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	-To multiply numbers up to 4-digits by a 2-digit whole number using the formal written method of long division and multiplication. -To divide numbers up to 4-digits by a 2-digit whole number using the formal written method of short and long division. -To interpret remainders as whole number remainders, fractions or by rounding as appropriate for the context of a division calculation. -To perform mental calculations, including with mixed operations and large numbers.
White Rose Block link			Spring 2	Autumn 3 Spring 1	Spring 1	Autumn 3 Spring 1	Autumn 2

Multiplication and Division: Problems

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives		**Multiplication and division – solve problems** -To solve 1-step problems involving multiplication and division using concrete objects, pictorial representation and arrays with teacher support.	**Multiplication and division – solve problems** -To solve problems involving multiplication and division, using apparatus, repeated addition, mental methods and known facts. -To explain the context or story of a multiplication or division problem.	**Multiplication and division – solve problems** -To use knowledge of multiplication, repeated addition and division to solve simple problems relating to missing number problems, correspondence and scaling.	**Multiplication and division – solve problems** -To use knowledge of multiplication, repeated addition and division to solve more complex problems relating to correspondence and scaling. -To break multiplication calculations into simpler parts to aid mental calculations. (distributive law)	**Multiplication and division – solve problems** -To solve problems involving multiplication and division using knowledge of factors, multiples, squares and cubes. - To solve problems involving multiplication and division involving scaling by simple fractions. - To solve problems involving multiplication and division involving money, costs and rates. -To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the = sign.	**Multiplication and division – solve problems** -To consolidate knowledge of solving problems involving addition subtraction, multiplication and division. -To use knowledge of the order of operations to carry out calculations involving the 4 operations. (BODMAS)
White Rose Block link		Summer 1	Spring 2	Spring 1	Spring 1	Autumn 3 Spring 1	Autumn 2

Multiplication and division: Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Double	Multiplication	Multiplication tables	Exchange	Factor pairs	Multiples	Multi digit numbers
half	division	Commutative	Mathematical statement	factors	Prime numbers	Long division
Twice as many	arrays	Repeated addition	Missing number problem	Formal method	Square numbers	
Equal			Derived facts	Distributive law	Cube numbers	
Unequal				Remainders	Short division	
Share					Product	
Group					dividend	
Odd					Deviser	
even					Quotient	
					operations	

Year 1 RTP Number facts

Ready to progress criteria	Block	Steps
1NF-1 Develop fluency in addition and subtraction facts within 10	See under Addition & subtraction	
1NF-2 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.	Summer 1	1 – Count in 2s 2 – Count in 10s 3 – Count in 5s
	Summer 4	4 – The number line to 100
	Summer 5	1 – Unitising 4 – Count in coins

Year 3 RTP Number facts

Ready to progress criteria	Block	Steps
3NF-1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.	See under Addition & subtraction	
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.	Autumn Block 3	3 – Multiples of 2 4 – Multiples of 5 and 10 5 – Sharing and grouping 9 – Multiply by 4 10 – Divide by 4 11 – The 4 times-table
3NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).	Spring 1	2 – Related calculations

Year 4 RTP Number facts

Ready to progress criteria	Block	Steps
4NF-1 Recall multiplication and division facts up to 12 × 12 and recognise products in multiplication tables as multiples of the corresponding number.	Autumn 4	All 13 steps in this block relate to this criterion
	Spring 1	1 – Factor pairs
4NF-2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.	Autumn 4	All 13 steps in this block relate to this criterion
	Spring 1	11 – Divide a 2-digit number by a 1-digit number (1) 12 – Divide a 2-digit number by a 1-digit number (2)
4NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100).	Autumn 2	1 – Add and subtract 1s, 10s, 100s and 1,000s
	Spring 1	7 – Related facts – multiplication and division

Year 5 RTP Number facts

Ready to progress criteria	Block	Steps
5NF-1 Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	Autumn 3	1 – Multiples 2 – Common multiples 3 – Factors 4 – Common factors 6 – Square numbers
	Spring 2	4 – Calculate a fraction of a quantity 5 – Fraction of an amount 6 – Find the whole
5NF-2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).	Autumn 3	10 – Divide by 10, 100 and 1,000
	Summer 3	1 – Use known facts to add and subtract decimals within 1 2 – Complements to 1 3 – Add and subtract decimals across 1

Year 2 RTP Multiplication & division

Ready to progress criteria	Block	Steps
2MD-1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.	Spring 2	1 – Recognise equal groups 2 – Make equal groups 3 – Add equal groups 4 – Introduce the multiplication symbol 5 – Multiplication sentences
	Spring 4	2 – Measure in grams 4 – Four operations with mass 8 – Four operations with volume and capacity
	Summer 3	6 – Draw pictograms (2, 5 and 10) 7 – Interpret pictograms (2, 5 and 10)
2MD-2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).	Spring 2	7 – Make equal groups – grouping 10 – Divide by 2 14 – Divide by 10 16 – Divide by 5

Year 3 RTP Multiplication & division

Ready to progress criteria	Block	Steps
3MD-1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.	Autumn 3	All 15 steps in this block relate to this criterion
	Spring 1	3 – Reasoning about multiplication 10 - Scaling

Year 4 RTP Multiplication & division

Ready to progress criteria	Block	Steps
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.	Spring 1	3 - Multiply by 10 4 – Multiply by 100 5 – Divide by 10 6 – Divide by 100
4MD-2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.	Autumn 4	All 13 steps in this block relate to this criterion
4MD-3 Understand and apply the distributive property of multiplication.	Autumn 4	3 – 6 times-table and division facts 8 – 7 times-table and division facts 9 – 11 times-table and division facts 10 – 12 times-table and division facts
	Spring 1	8 – Informal written methods for multiplication 15 – Efficient multiplication

Year 5 RTP Multiplication & division

Ready to progress criteria	Block	Steps
5MD-1 Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.	Autumn 3	8 – Multiply by 10, 100 and 1,000 9 – Divide by 10, 100 and 1,000 10 – Multiples of 10, 100 and 1,000
	Summer 3	10 – Multiply by 10, 100 and 1,000 11 – Divide by 10, 100 and 1,000 12 – Multiply and divide decimals – missing value
5MD-2 Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.	Autumn 3	1 – Multiples 2 – Common multiples 3 – Factors 4 – Common factors 6 – Square numbers
5MD-3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.	Spring 1	1 – Multiply up to a 4-digit number by a 1-digit number
5MD-4 Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.	Spring 1	7 – Short division 8 – Divide a 4-digit number by a 1-digit number 9 – Divide with remainders

Year 6 RTP 4 operations

Ready to progress criteria	Block	Steps
6AS/MD-1 Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).	Spring 1	1 – Add or multiply? 2 – Use ratio language 3 – Introduction to the ratio symbol
6AS/MD-2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.	Autumn 2	8 – Solve problems with multiplication 10 – Division using factors 13 – Solve problems with division 14 – Solve multi-step problems 17 – Reason form known facts
6AS/MD-3 Solve problems involving ratio relationships.	See under Ratio and proportion	
6AS/MD-4 Solve problems with 2 unknowns.	See under Algebra	

Fractions, decimals and percentages

$$\frac{7}{10}$$

Fractions: Recognise and write

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives		-To recognise, find and name a half as one of 2 equal parts of an object or shape. -To recognise, find and name a half as one of 2 equal parts of a quantity. -To recognise, find and name a quarter as one of 4 equal parts of a quantity or shape.	-To recognise, find, name and write the fractions $^1/_3$, $\frac{1}{4}$, $^2/_4$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.	-To count up and down in tenths. -To know that tenths are created by dividing an object into 10 equal parts. -To know that tenths are created by dividing numbers or quantities by 10. -To recognise and use fractions as numbers, unit fractions and non-unit fractions with small denominators.	-To count up and down in hundredths. -To know that hundredths are created by dividing an object or quantity by 100. -To know that hundredths can also be created by dividing tenths by 10.	-To identify, name and write equivalent fractions of a given fraction representing visually. (including tenths and hundredths) -To recognise mixed numbers and improper fractions. -To convert mixed numbers into improper fractions and improper fractions into mixed numbers. -To write mathematical statements where the answer is > 1 as a mixed number, eg. $^2/_5 + {}^4/_5 = {}^6/_5 = 1\,{}^1/_5$.	-To consolidate knowledge, skills and understanding from previous year groups.
White Rose Block link		Summer 2	Summer 1	Spring 3	Spring 4 Summer 1	Autumn 4	

Fractions: Compare

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives			-To recognise the equivalence of $^{2}/_{4}$ and $\frac{1}{2}$.	-To recognise, and show using diagrams, equivalent fractions with small denominators. -To compare and order unit fractions with the same denominators.	-To recognise, and show using diagrams, families of common equivalent fractions.	-To compare and order fractions whose denominators are all multiples of the same number.	-To use common factors to simplify fractions. -To use common multiples to express fractions in the same denomination. -To compare and order fractions, including fractions > 1.
White Rose Block link			Summer 1	Spring 3	Spring 3	Autumn 4	Autumn 3

Fractions: Calculations

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives			-To write simple fractions, eg. ½ of 6 = 3.	-To add and subtract fractions with the same denominator within 1 whole, eg. 5/7 + 1/7 = 6/7	-To add and subtract fractions with the same denominator.	-To continue to add and subtract fractions with the same denominator. -To add and subtract fractions with denominators that are multiples of the same number. -To multiply proper fractions and mixed numbers by whole numbers supported by apparatus and diagrams.	-To add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions. -To multiply simple pairs of proper fractions, writing the answer in its simplest form, eg. ¼ x ½ = ⅛. -To divide proper fractions by whole numbers, eg. $^{1}/_{3}$ ÷ 2 = 1/6.
White Rose Block link			Summer 1	Summer 1	Spring 3	Autumn 4 Spring 2	Autumn 3 Autumn 4

Fractions: Solve Problems

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives				-To solve problems that involve applying fractions learning to date.	-To solve problems involving increasingly harder fractions to calculate quantities and fractions to divide quantities, including non-unit fractions where the answer is a whole number. -To solve problems that involve applying fractions learning to date.	-To solve problems that involve applying fractions learning to date.	-To solve problems that involve applying fractions learning to date.
White Rose Block link				Spring 3 Summer 1	Spring 3		

Year 3 RTP Fractions

Ready to progress criteria	Block	Steps
3F-1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.	Spring 3	1 – Understand the denominators of unit fractions 2 – Compare and order unit fractions 3 – Understand the numerators of non-unit fractions 4 – Understand the whole 5 – Compare and order non-unit fractions
3F-2 Find unit fractions of quantities using known division facts (multiplication tables fluency).	Summer 1	4 – Unit fractions of a set of objects
3F-3 Reason about the location of any fraction within 1 in the linear number system.	Spring 3	6 – Fractions and scales 7 – Fractions on a number line 8 – Count in fractions on a number line 9 – Equivalent fractions on a number line
3F-4 Add and subtract fractions with the same denominator, within 1	Summer 1	1 – Add fractions 2 – Subtract fractions 3 – Partition the whole

Year 4 RTP Fractions

Ready to progress criteria	Block	Steps
4F-1 Reason about the location of mixed numbers in the linear number system.	Spring 3	4 – Number lines and mixed numbers 5 – Compare and order mixed numbers 9 – Equivalent fractions on a number line
4F-2 Convert mixed numbers to improper fractions and vice versa.	Spring 3	6 – Understand improper fractions 7 – Convert mixed numbers to improper fractions 8 – Convert improper fractions to mixed numbers
4F-3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.	Spring 3	11 – Add two or more fractions 12 – Add fractions and mixed numbers 13 – Subtract two fractions 14 – Subtract from whole amounts 15 – Subtract from mixed numbers

Year 5 RTP Fractions

Ready to progress criteria	Block	Steps
5F-1 Find non-unit fractions of quantities.	Spring 2	4 – Calculate a fraction of a quantity 5 – Fraction of an amount 6 – Find the whole
5F-2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system.	Autumn 4	1 – Find fractions equivalent to a unit fraction 2 – Find fractions equivalent to a non-unit fraction 3 – Recognise equivalent fractions
5F-3 Recall decimal fraction equivalents for $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{5}$ and $\frac{1}{10}$ and for multiples of these proper fractions.	Spring 3	2 – Equivalent fractions and decimals (tenths) 4 – Equivalent fractions and decimals

Year 6 RTP Fractions

Ready to progress criteria	Block	Steps
6F-1 Recognise when fractions can be simplified, and use common factors to simplify fractions.	Autumn 3	1 – Equivalent fractions and simplifying 2 – Equivalent fractions on a number line
6F-2 Express fractions in a common denomination and use this to compare fractions that are similar in value.	Autumn 3	3 – Compare and order (denominator)
6F-3 Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.	Autumn 3	3 – Compare and order (denominator) 4 – Compare and order (numerator)

Decimals: Recognise, write and compare

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives					-To recognise and write decimal equivalents of any number of tenths or hundredths. -To recognise and write decimal equivalents to: • $\frac{1}{2}$ (0.5) • $\frac{1}{4}$ (0.25) • $\frac{3}{4}$ (0.75) -To round decimals with 1 decimal place to the nearest whole number. -To compare numbers with the same number of decimal places up to 2 decimal places.	-To read and write decimal numbers as fractions, eg. 0.71 $=^{71}/_{100}$. To recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. -To round decimals with 2 decimal places to the nearest whole number. -To round numbers with 2 decimal places to 1 decimal place. -To read, write, order and compare numbers with up to 3 decimal places. 0	-To identify the value of each digit in numbers given to 3 decimal places. -To consolidate knowledge, skills and understanding from previous year groups
White Rose Block link					Spring 4 Summer 1	Spring 3 Summer 3	Spring 3

Decimals: Calculations and Problems

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives					**s**-To find the effect of dividing a 1 or 2-digit number by 10 and 100. -To identify the value of digits as ones, tenths and hundredths.	-To solve problems involving numbers up to 3 decimal places.	-To multiply and divide numbers by 10, 100, and 1000 giving answers up to 3 decimal places. -To multiply 1-digit numbers with up to 2 decimal places by whole numbers. -To use written division methods in cases where the answer has up to 2 decimal places. -To solve problems which require answers to be rounded to specified degrees of accuracy.
White Rose Block link					Spring 4 Summer 1	Spring 3 Summer 3	Spring 3

Fractions, decimals and percentages

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives					-To solve simple measure and money problems involving fractions and decimals to 2 decimal places.	-To recognise the percent symbol (%). -To know that 'per cent' relates to the number of parts per 100. -To write percentages as a fraction with a denominator of 100. -To write percentages as a decimal. -To know the decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $^1/_5$, $^2/_5$,$^4/_5$. -To solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$,$^1/_5$, $^2/_5$,$^4/_5$. -To work out the percentage and decimal equivalents of fractions with a denominator of a multiple of 10 or 25.	-To associate a fraction with division. -To calculate decimal fraction equivalents. -To recall and use equivalences between simple fractions, decimals and percentages in different contexts.
White Rose Block link					Spring 3 Spring 4 Summer 1	Spring 3	Spring 3 Spring 4

Fractions, decimals and percentages: Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Whole	Three quarters	tenths	Decimal equivalence	fifths	
	half	Third		Hundredths	Thousandths	
	Quarter	Equivalent facts		Convert	Mixed numbers	
	Equal parts	Unit fractions		Proper fractions	Percentage	
		Non-unit fractions		Improper fractions	Factors	
		Numerator		Decimal point	Integer	
		Denominator			complements	
		One whole				

Ratio and proportion, algebra

4:3

$a^2+b^2=c^2$

Ratio and proportion

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives							-To solve problems involving the relative sizes of 2 quantities where missing values can be found by using multiplication and division facts. -To solve problems involving the calculation of percentages including in measures , eg. 15% of 360. - To use percentages for comparison. -To solve problems involving similar shapes where the scale factor is known or can be found. -To solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
White Rose Block link							Spring 1

Algebra

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives		**Note: Although algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by missing number problems.*	**Note: Although algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by missing number problems.*	**Note: Although algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by missing number problems.*	**Note: Although algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by missing number problems.*	**Note: Although algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by missing number problems.*	-To use simple formulae. -To generate and describe linear number sequences. -To express missing number problems algebraically. -To find pairs of numbers that satisfy an equation with 2 unknowns. -To find possibilities of combinations of 2 variables
White Rose Block link							Spring 2

Ratio and proportion: Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						relative size
						missing values
						integer multiplication
						percentages
						scale factor
						unequal sharing & grouping

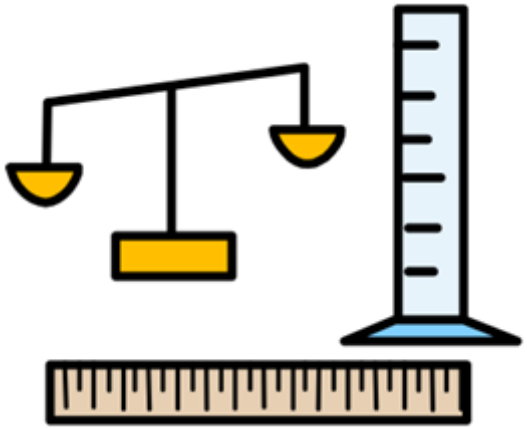
Algebra: Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						formulae
						linear number sequences
						algebraically
						equation
						unknowns
						combinations

Year 6 RTP 4 operations

Ready to progress criteria	Block	Steps
6AS/MD-1 Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).	See under Addition and subtraction, multiplication and division	
6AS/MD-2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.	See under Addition and subtraction, multiplication and division	
6AS/MD-3 Solve problems involving ratio relationships.	Spring 1	4 – Ratio and fractions 5 – Scale drawing 6 – Use scale factors 7 – Similar shapes 8 – Ratio problems 9 – Proportion problems 10 – Recipes
6AS/MD-4 Solve problems with 2 unknowns.	Spring 2	9 – Find pairs of values 10 – Solve problems with two unknowns

Measurement



Using measures

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives	*Development matters (3-4yr olds)* -To make comparisons between objects relating to size, length, weight and capacity. Reception -To compare length, weight and capacity.	-To compare, describe and solve practical problems for: • lengths and heights, eg. long/short, longer/shorter, tall/short, double/half • mass and weight, eg. heavy/light, heavier than/lighter than • capacity and volume, eg. full/empty, more than/less than, half, half full • time, eg. quicker/slower, earlier/later -To measure and begin to record: • lengths and heights • mass / weight • capacity and volume	-To choose and use appropriate standard units to estimate and measure to the whole unit: • length / height in any direction (m,cm) • mass (kg,g) • temperature (°C) • capacity (l,ml) -To use appropriate measuring equipment including rulers, scales, thermometers and measuring vessels. -To compare and order lengths, mass, volume/capacity. -To record the results of measurements using the >, < and = symbols.	-To measure, compare, add and subtract: • length (m, cm, mm) • mass (kg, g) • volume/capacity (l,ml)	-To convert between different units of measure, eg. km to m, hours to minutes. -To estimate, compare and calculate different measures.	-To convert between different units of metric measure: • km and m • cm and m • cm and mm • g and kg • l and ml -To understand and use approximate equivalences between metric units and common imperial units, eg. inches, pounds and pints (approx. 2 ½ cm in an inch, 450g in a pound, 570 ml in a pint) -To use all 4 operations to solve problems involving measure, using decimal notation including scaling. (to include length, mass, volume and money)	-To solve problems involving the calculation and conversion of units of measure, using decimal notations up to 3 decimal places where appropriate. -To use, read, write and convert between standard units, converting measurement of length, mass, volume and time from a smaller unit of measure to a larger and vice versa using decimal notation up to 3 decimal places. -To know that there are approximately 1.6km in a mile. -To convert between miles and kilometres.

		• time (hours, minutes, seconds)					
White Rose Block link		Spring 4 Spring 5 Summer 6	Spring 3 Spring 4	Spring 2 Spring 4	Spring 2 Summer 3	Spring 4 Summer 5 Summer 6	Autumn 5

Measurement (using measures): Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
measure	Compare	Standard units	Millimetre/ mm	Kilometres/ km	Decimal notation	Conversion
Wide/ wider	Mass	Estimate	Perimeter	Rectilinear shape	Scaling	Miles
Narrow/ narrower	Volume	Order		Area	Metric units	formulae
Compare		Record results			Imperial units	Parallelogram
Long/ longer/ longest		Centimetre/ cm			Inches	
Short/ shorter/ shortest		Meter/ m			Compound shape	feet
Length		Kilogram/ kg			Irregular shape	Cubic meter
Height		Gram/ g			Square centimetres	Cubic millimetre
Tall/ taller/ tallest		Quarter full			Square meters	Cubic kilometre
Weight		Three quarters full			Cubic centimetre	Gallons
Capacity		Litres/ l			Pounds	Stones
Heavy/ light		Millilitres/ ml			Pints	Ounces
Big/ bigger/ biggest		Temperature				
Full/ empty		Celsius				
More than						
Less than						

Half/ half full						

Money

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives		-To recognise and know the value of different denominations of coins and notes.	-To recognise and use symbols for pounds (£) and pence (p). -To combine amounts to make a given value. -To find different combinations of coins that equal the same amount of money. -To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	-To add and subtract amounts of money to give change using both £ and p in practical contexts.	-To estimate, compare and calculate using £ and p.	-To use all 4 operations to solve problems involving money.	-To consolidate knowledge, skills and understanding from previous year groups.
White Rose Block link		Summer 5	Spring 1	Summer 2	Summer 2	Summer 3	

Measurement (money): Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Money		Value				
Coins		Change				
Notes						
Pounds/ £						
Pence/ p						

Time

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives	-To begin to describe a sequence of events, real or fictional using words such as 'first', 'then'.	-To sequence events in chronological order using appropriate language (before, after, next, first, today, yesterday, tomorrow, morning, afternoon, evening) -To recognise and use language relating to dates including days of the week, weeks, months and years. -To tell the time to the hour. -To tell the time to half past the hour. -To draw hands on a clock to show o'clock and half past times.	-To compare and sequence intervals of time. -To write and tell the time at quarter to and quarter past the hour. -To tell and write the time to five minute intervals. -To draw hands on a clock to represent these times. -To know the number of minutes in an hour. (60) -To know the number of hours in a day. (24)	-To tell and write the time from an analogue clock, including using Roman numerals, from I-XII. -To tell the time on 12 and 24 hour clocks. -To estimate and read time with increasing accuracy to the nearest minute. -To record and compare time in terms of seconds, minutes and hours. -To use vocabulary such as o'clock, am, pm, morning, afternoon, noon and midnight. -To know the number of seconds in a minute. (60) -To know the number of days in each month, year and leap year. -To compare durations of events.	-To read, write and convert time between analogue and digital – 12 and 24 hour clock. -To solve problems involving converting from hours to minutes, minutes to seconds, years to months and weeks to days.	-To continue to solve problems involving converting between units of time. Time conversions are covered in this Year 5 block	-To consolidate knowledge, skills and understanding from previous year groups. Y6 focuses on metric units.
White Rose Block link		Summer 6	Summer 2	Summer 3	Summer 3	Summer 5	Autumn 5

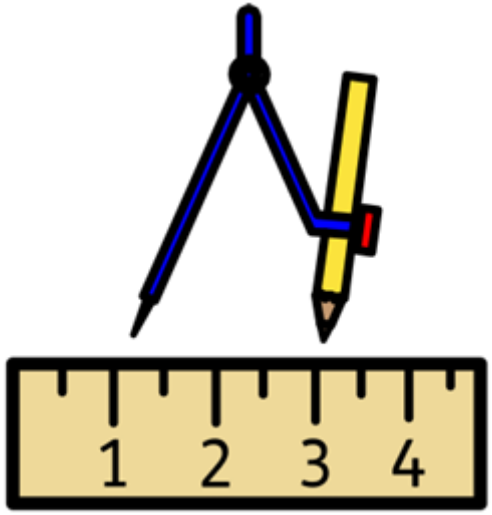
Measurement (time): Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Time	Chronological order	Intervals of time	Analogue clock	convert		
Quicker	Days of the week	Quarter past/ to	Roman numerals			
Slower	Months of the year	duration	Twelve-hour clock			
Earlier	Month		24-hour clock			
Later	Year		Am/ pm			
Before	O'clock		Noon			
After	Half past		Midnight			
First	Second		Leap year			
Next			Digital			
Today						
Yesterday						
Tomorrow						
Morning						
afternoon						
Evening						
Day						
Week						
Hour						
Minutes						

Perimeter, area and volume

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives				-To measure the perimeter of simple 2-D shapes.	-To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. -To find the area of rectilinear shapes by counting squares.	-To measure and calculate perimeter of composite rectilinear shapes in centimetres and metres. -To calculate and compare the area of rectangles and squares. -To use standard units – square centimetres (cm^2) and square metres (cm^3). -To estimate the area of irregular shapes. -To estimate volume and capacity.	-To recognise that shapes with the same areas can have different perimeters and vice versa. -To recognise when it is possible to use formulae to find. area and volume of shapes. -To calculate the area of parallelograms and triangles. -To calculate, estimate and compare volumes of cubes and cuboids using standard units including cubic centimetres (cm^3) and cubic metres (m^3). -To start to use more complex standard units including cubic millimetres and kilometres (mm^3, km^3)
White Rose Block link				Spring 2	Autumn 3 Spring 2	Spring 4 Summer 6	Spring 5

Geometry



2-D shapes

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives	*Development matters (3-4yr olds)* -To talk about and explore 2D shapes (for example circles, rectangles, and triangles) using informal and mathematical language: sides, corners, straight, flat, found. -To combine shapes to make new ones – an arch, a bigger triangle etc. -To talk about and identify the patterns around them, eg. stripes on clothes, designs on rugs and wallpaper. -To use informal language like 'pointy', 'spotty', 'blobs' etc. -To extend and create ABAB patterns – stick, leaf, stick, leaf. -To notice and correct an error in a repeating pattern. Reception -To select, rotate and manipulate shapes in order to recognise that a shape can have other shapes within it, just as numbers can.	-To recognise and name 2-D shapes e.g. rectangles including squares , circles and triangles	-To identify and describe the properties of 2-D shapes including the number of sides. -To identify vertical lined symmetry in a 2-D shape. -To identify 2-D shapes on the surface of 3-D shapes e.g. circle on a cylinder or a triangle on a pyramid. - To compare and sort common 2-D shapes and everyday objects.	-To draw 2-D shapes.	-To compare and classify geometric shapes including quadrilaterals and triangles based on their properties and size. - To identify lines of symmetry in 2-D shapes presented in different orientations.	-To distinguish between regular and irregular polygons based on reasoning about equal sides and angles. -To use properties of rectangles to deduce related facts. - To find missing lengths and angles.	-To draw 2-D shapes using given dimensions and angles. -To illustrate and name parts of circles including radius, diameter and circumference. - To know that the diameter is twice the radius.

	-To continue, copy and create repeating patterns.						
White Rose Block link		Autumn 3	Autumn 3	Summer 4	Summer 4	Summer 1	Summer 1

3-D shapes

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives	*Development matters (3-4yr olds)* -To talk about and explore 3D shapes (for example cuboids) using informal and mathematical language: sides, corners, straight, flat, found. -To select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. Reception -To select, rotate and manipulate shapes in order to recognise that a shape can have other shapes within it, just as numbers can. -To continue, copy and create repeating patterns.	-To recognise and name common 3-D shapes e.g. cuboids including cubes, pyramids and spheres.	-To recognise, name, compare and sort common 3-D shapes and everyday objects, including the number of edges, vertices and faces.	-To make 3-D shapes using modelling materials. -To recognise and describe 3-D shapes in different orientations.	-To consolidate objectives covered in previous year groups	-To identify 3-D shapes including cubes and cuboids from 2-D representations.	-To recognise, describe and build simple 3-D shapes including making nets.
White Rose Block link		Autumn 3	Autumn 3	Summer 4		Summer 1	Summer 1

Geometry (shapes): Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
2-D shapes	Sides	Pentagon	Right angle triangle	Isosceles	Regular polygon	Radius
Rectangle	corners	Hexagon	Heptagon	Equilateral	Irregular polygon	Diameter
Square	Properties	Line of symmetry	Octagon	Scalene		Circumference
Circle	Faces	Edges	Polygon	Trapezium		Dimensions
Triangle		vertices	Prism	Rhombus		
Properties		Vertex		Parallelogram		
3-D shapes				Kite		
Cuboids				Geometric		
Cubes				Quadrilateral		
Cone						
Sphere						
Pyramids						
Cylinders						
Curved						
Straight						
flat						

Angles and lines

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives				-To recognise angles as a property of a shape or a description of a turn. -To recognise right angles. -To know that 2 right angles make a half turn. -To know that 3 right angles make ¾ of a turn. -To know that 4 right angles make a complete turn. -To identify whether angles are greater or less than a right angle. -To identify horizontal and vertical lines. -To identify pairs of parallel lines. -To identify pairs of perpendicular lines.	-To identify acute (smaller than a right angle) and obtuse (larger than a right angle) angles. -To compare and order angles (up to 2 right angles) by size. -To continue to identify lines of symmetry on 2-D shapes presented in different orientations. -To complete a simple figure with respect to a specific line of symmetry.	-To know that angles are measured in degrees. -To recognise and use the symbol for degrees. -To estimate and compare acute, obtuse and reflex angles. -To draw given angles and measure them in degrees. -To identify angles at a point and 1 whole turn. (360°) -To identify angles at a point on a straight line and half a turn. (180°) -To identify other multiples of 90°.	-To know that the angles in a triangle add up to 180°. -To find unknown angles in any triangles. -To know that angles in a quadrilateral add up to 360°. -To find unknown angles in quadrilaterals and regular polygons. -To continue to recognise angles where they meet at a point or are on a straight line. -To recognise angles where they are vertically opposite and find missing angles.
White Rose Block link				Summer 4	Summer 4	Summer 2	Summer 1
RTP criteria							

Geometry (angles): Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Orientations		Reflex	
			Angles		Degrees	
			Acute		One whole turn	
			Obtuse		Angles on a straight line	
			Turn		Angles around a point	
			Right angle		Vertical opposite	
			Half turn		Missing angle	
			Three quarters of a turn			
			Greater than a right angle			
			Less than a right angle			
			Horizontal;			
			Vertical			
			Perpendicular			
			Parallel			

Position and direction

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives	*Development matters (3-4yr olds)* -To understand position through words alone – for example, 'The bag is under the table' with no pointing. -To describe a familiar route. -To discuss routes and locations, using words like 'in front of' and 'behind'.	-To describe position, direction and movement including whole, half, quarter and three-quarter turns.	-To order and arrange combinations of mathematical objects in patterns and sequences. -To use mathematical vocabulary to describe position, direction and movement including movement in a straight line. -To distinguish between rotation as a turn and in terms of right-angles for quarter, half and three quarter turns (clockwise and anti-clockwise).-	-To consolidate learning from previous year groups.	-To describe positions on a 2-D grid as co-ordinates in the first quadrant. -To describe movements between positions as translations of a given unit to the left/right/up/down. -To plot specified points and draw sides to complete a given polygon.	-To identify, describe and represent the position of a shape following a reflection or translation using appropriate language. -To recognise that following a reflection or translation, the shape has not changed but the position has.	-To describe position on the full co-ordinate grid. (all 4 quadrants) -To draw and translate simple shapes on the co-ordinate plane and reflect them in the axes.
White Rose Block link		Summer 3	Summer 4		Summer 6	Summer 2	Summer 2

Geometry (position and direction): Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Over	Position	Clockwise/ anticlockwise		Co-ordinates	Reflection	Four quadrants
Under	Direction	Straight line		First quadrant		Co-ordinate plane
Between	Movement	Rotation		Grid		
Around	Whole turn	Arrange		Translation		
Through	Quarter turn	Sequences		Plot		
On	Half turn			Polygon		
Into	Three quarter turn			axis		
Next to						
Behind						
Beneath						
Order						
Repeat						
Patterns						
On top of						

Year 1 RTP Geometry

Ready to progress criteria	Block	Steps
1G-1 Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.	Autumn 3	1 – Recognise and name 3-D shapes 2 – Sort 3-D shapes 3 – Recognise and name 2-D shapes 4 – Sort 2-D shapes 5 – Patterns with 2-D and 3-D shapes
1G-2 Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.	Autumn 3	1 – Recognise and name 3-D shapes 2 – Sort 3-D shapes 3 – Recognise and name 2-D shapes 4 – Sort 2-D shapes 5 – Patterns with 2-D and 3-D shapes

Year 2 RTP Geometry

Ready to progress criteria	Block	Steps
2G-1 Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.	Autumn 3	1 – Recognise 2-D and 3-D shapes 2 – Count sides on 2-D shapes 3 – Count vertices on 2-D shapes 7 – Sort 2-D shapes 8 – Count faces on 3-D shapes 9 – Count edges on 3-D shapes 10 – Count vertices on 3-D shapes 11 – Sort 3-D shapes

Year 3 RTP Geometry

Ready to progress criteria	Block	Steps
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.	Summer 4	1 – Turns and angles 2 – Right angles 6 – Parallel and perpendicular 7 – Recognise and describe 2-D shapes
3G-2 Draw polygons by joining marked points, and identify parallel and perpendicular sides.	Summer 4	6 – Parallel and perpendicular 8 – Draw polygons

Year 4 RTP Geometry

Ready to progress criteria	Block	Steps
4G-1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.	Summer 6	1 – Describe position using coordinates 2 – Plot coordinates 3 – Draw 2-D shapes on a grid 4 – Translate on a grid 5 – Describe translations on a grid
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.	Spring 2	3 – Perimeter on a grid 4 – Perimeter of a rectangle 5 – Perimeter of rectilinear shapes 6 – Find missing lengths in rectilinear shapes 7 – Calculate the perimeter of rectilinear shapes 8 – Perimeter of regular polygons 9 – Perimeter of polygons
	Summer 4	6 - 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.	Summer 4	7 – Lines of symmetry 8 – Complete a symmetrical figure

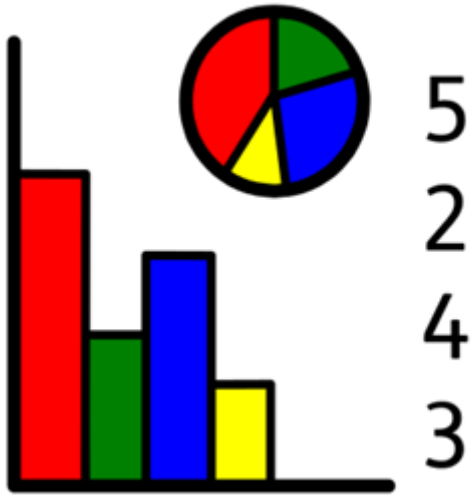
Year 5 RTP Geometry

Ready to progress criteria	Block	Steps
5G-1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.	Summer 1	1 – Understand and use degrees 2 – Classify angles 3 – Estimate angles 4 – Measure angles up to 180° 5 – Draw lines and angles accurately
5G-2 Compare areas and calculate the area of rectangles (including squares) using standard units.	Spring 4	4 – Area of rectangles

Year 6 RTP Geometry

Ready to progress criteria	Block	Steps
6G-1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.	Spring 5	1 – Shapes – same area 2 – Area and perimeter 3 – Area of a triangle 4 – Area of a right-angled triangle 5 – Area of any triangle 6 – Area of a parallelogram
	Summer 1	2 – Calculate angles 3 – vertically opposite angles 4 – Angles in a triangle 5 – Angles in a triangle - special cases 6 – Angles in a triangle – missing angles 7 – Angles in quadrilaterals 8 – Angles in polygons 9 – Circles 10 – Draw shapes accurately

Statistics



Present and interpret data

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives			-To interpret simple pictograms, tally charts, block diagrams and tables. -To construct simple pictograms, tally charts, block diagrams and tables.	-To interpret bar charts, pictograms and tables. -To present data using bar charts, pictograms and tables.	-To interpret discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. -To present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	-To complete, read and interpret information in tables, including timetables.	-To interpret and construct pie charts and line graphs and use these to solve problems.
White Rose Block link			Summer 3	Summer 5	Summer 5	Spring 5	Spring 6
RTP criteria							

Solve statistical problems

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum Objectives			-To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. -To ask and answer questions about totalling and comparing categorical data.	-To solve 1-step and 2-step questions using information presented in scaled bar charts, pictograms and tables, eg. How many more? How many fewer?	-To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	-To solve comparison, sum and difference problems using information presented in a line graph.	-To calculate and interpret the mean as an average.
White Rose Block link			Summer 3	Summer 5	Summer 5	Spring 5	Spring 6

Statistics: Vocabulary

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Pictograms	Table	Time graph	Timetable	Pie chart
		Talley chart	Bar chart	Discrete data	Two-way tables	mean
		Block diagram	One step and two step problem	Continuous data		
		Category		Line graph		
		Sorting		Comparison problem		
		Totalling		Sum problem		
		Comparing		Difference problem		
		Horizonal		Calculate		
		Vertical		Interpret		