

Year 5

<u>Children know how to:</u>	<u>Opportunities and ideas for journaling.</u> <u>"How do mathematicians.."</u>	<u>Problem Solving and reasoning opportunities</u>	<u>NCETM Spine and Assessment Materials</u>
AUTUMN			
<u>Number: Place Value (3 WEEKS)</u>			Year 5 Spine 1
Numbers to 10000	How do mathematicians count in...?	NRICH Space distances Tug harder Swimming pool Sea level	1.26: TP 1.1- 1.12
Roman Numerals to 1000			
Round to nearest 10, 100 and 1000	How do mathematicians count below 0?	I See Reasoning Page 7-13 Page 19-29	1.26: TP 2.1-2.6, 3.1-3.3, 4.1-4.8
Numbers to 100000			
Compare and order numbers to 100000			
Round numbers within 100000			
Counting in 10s, 100s, 1000s, 10000s and 100000s			1.26: TP 5.1-5.8
Compare and order numbers to one million			Yr5 NCETM assessment materials Page 9-10
Round numbers to one million			
Negative numbers			
<u>Number: Addition and Subtraction (2 WEEKS)</u>			Year 5 Spine 1
Add whole numbers with more than 4 digits (column method)	How do mathematicians use inverse operations?	NRICH Twenty Divided Into Six Maze 100 Six Ten Total Six Numbered Cubes Reach 100 I See Reasoning Page 33-47	1.28: TP 1.1- 1.12, 2.1-2.7, 3.1-3.7, 4.1-4.6
Subtract whole numbers with more than 4 digits (column method)			1.29: TP 1.1-1.10, 2.1-2.9, 3.1-3.14, 4.1-4.8, 5.1-5.7, 6.1-6.8
Round to estimate and approximate			Yr5 NCETM assessment materials Page 11-13
Inverse operations (addition and subtraction)			
Multi-step addition and subtraction problems			
<u>Statistics (1 WEEKS)</u>			Year 5 Spine 1
Read and interpret line graphs	How do mathematicians interpret tables?	I See Reasoning Page 125-129	1.26: TP 6.1-6.4
Draw line graphs			1.27: TP 6.1-6.4
Use line graphs to solve problems	How do mathematicians read line graphs?		Yr5 NCETM assessment materials Page 28-29
Read and interpret tables			
Two-way tables			
Timetables			

<u>Number: Multiplication and Division (1) (2 WEEKS)</u>			<u>Year 5 Spine 2</u>
Multiples	<u>White Rose Activity</u> Prime numbers How do mathematicians find factors? How do mathematicians identify prime numbers?	NRICH Sweets in a Box Which Is Quicker? Multiplication Squares Flashing Lights Abundant Numbers Factors and Multiples Game Pebbles Three Dice Factor Track Two primes make one square All the digits Trebling Division rules Multiply multiples 1 Multiply multiples 2 Multiply multiples 3 Up and Down Staircases I See Reasoning Page 48-73	2.18: TP 1.1-1.9, 2.1-2.11
Factors			2.21: TP 5.1-5.6
Common factors			2.21: TP 1.1- 1.7, 2.1-2.6, 6.1-6.3
Prime numbers			2.22: TP 2.1- 2.5
Square numbers			2.21: TP 3.1- 3.3, 4.1-4.3
Cube numbers			2.19: TP 4.1-4.4
Multiply by 10, 100 and 1000			Yr5 NCETM assessment materials Page 14-16
Divide by 10, 100 and 1000			
Multiples of 10, 100 and 1000			
<u>Measurement: Perimeter and Area (2 WEEKS)</u>			
Measure perimeter	How do mathematicians measure perimeter? How do mathematicians measure area?	NRICH Area and perimeter Through the window Shaping It Brush Loads Cubes Numerically Equal Making Boxes Ribbon Squares Fitted I See Reasoning Page 103-110	Yr5 NCETM assessment materials Page 21-24
Calculate perimeter			
Area of rectangles			
Area of compound shapes			
Area of irregular shapes			

<u>Measurement: Time (1 WEEK)</u>			<u>Year 4 Spine 1</u>
Revision of Year 4 content	How do mathematicians read the time? How do mathematicians convert time?	I See Reasoning Page 129-134	1.24 TP: 5.9 Yr4 NCETM assessment materials Page 22-24
SPRING			
<u>Number: Multiplication and Division (2) (3 WEEKS)</u>			<u>Year 5 Spine 2</u>
Multiply 4 digits by 1 digits	How do mathematicians multiply? How do mathematicians divide with remainders?	NRICH Sweets in a Box Which Is Quicker? Multiplication Squares Flashing Lights Abundant Numbers Factors and Multiples Game Pebbles Three Dice Factor Track Two primes make one square All the digits Trebling Division rules Multiply multiples 1 Multiply multiples 2 Multiply multiples 3 Up and Down Staircases I See Reasoning Page 48-73	2.18: TP 1.1-1.9, 2.1-2.11
Multiply 2 digits (area model)			2.21: TP 5.1-5.6
Multiply 2 digits by 2 digits			2.21: TP 1.1- 1.7, 2.1-2.6, 6.1-6.3
Multiply 3 digits by 2 digits			2.22: TP 2.1- 2.5
Multiply 4 digits by 2 digits			2.21: TP 3.1- 3.3, 4.1-4.3
Divide 4 digits by 1 digit			2.19: TP 4.1-4.4
Divide with remainders			Yr5 NCETM assessment materials Page 14-16
<u>Number: Fractions (6 WEEKS)</u>			<u>Year 5 Spine 3</u>
Equivalent fractions	White Rose Activities Add fractions within 1 Add mixed numbers How do mathematicians convert fractions?	I See Reasoning Page 44-60	Yr5 NCETM assessment materials Page 17-20
Improper fractions to mixed numbers			
Mixed numbers to improper fractions			
Number sequences			
Compare and order fractions less than 1			3.7: TP: 1.1-1.10, 2.1-2.23, 3.1- 3.15
Compare and order fractions greater than 1			3.8- TP: 5.1-5.15
Add and subtract fractions			

Add fractions within 1	How do mathematicians order fractions? How do mathematicians calculate with fractions?		
Add 3 or more fractions			
Add fractions			
Add mixed numbers			
Subtract fractions			
Subtract mixed numbers			
Subtract- breaking the whole			
Subtract 2 mixed numbers			
Multiply unit fractions by an integer			
Multiply non-unit fractions by an integer			
Multiply mixed numbers by integers			
Fraction of an amount			
Using fractions as operators			
<u>Number: Decimals and Percentages (2 WEEKS)</u>			
Decimals up to 2 dp	How do mathematicians use percentages? How do mathematicians calculate percentages?	I See Reasoning Page 10-12, 61 NRICH Round the dice decimals Greater than or less than? Spiralling decimals Route product Forgot the numbers Matching fractions. decimals percentages	Yr5 NCETM assessment materials Page 17-20
Decimals as fractions (1)			
Decimals as fractions (2)			
Understand thousandths			
Thousandths as decimals			
Rounding decimals			
Order and compare decimals			
Understand percentages			
Percentages as fractions and decimals			
Equivalent FDP			
SUMMER			
<u>Number: 4 Operations revision (1 WEEK)</u>			
	Revise all four written operations.		
<u>Number: Decimals (4 WEEKS)</u>			
Adding decimals within 1	How do mathematicians calculate with decimals?	See above	See above
Subtracting decimals within 1			
Complements to 1			
Adding decimals- crossing the whole			
Adding decimals with the same number of decimal places			
Subtracting decimals with the same number of decimal places			
Adding decimals with a different number of decimal places			
Subtracting decimals with a different number of decimal paces			

Adding and subtracting wholes and decimals			
Decimal sequences			
Multiplying decimals by 10, 100 and 1000			
Dividing decimal by 10, 100 and 1000			
<u>Geometry: Properties of shape (3 WEEKS)</u>			
Measuring angles in degrees	<u>White Rose Activity</u> Drawing lines and angles accurately How do mathematicians use a protractor?	<u>I See Reasoning</u> Page 77-80, 84,85 NRICH <u>The Numbers Give the Design</u> <u>Six Places to Visit</u> <u>How Safe Are You?</u> <u>Olympic Turns Egyptian Rope</u> <u>Bracelets</u>	<u>Yr5 NCETM assessment materials</u> P25-27
Measuring with a protractor (1)			
Measuring with a protractor (2)			
Drawing lines and angles accurately			
Calculating angles on a straight line			
Calculating angles around a point			
Calculating lengths and angles in shapes			
Regular and irregular polygon			
Reasoning about 3D shapes			
<u>Geometry: Position and Direction (1 WEEK)</u>			<u>Year 5 Spine 1</u>
Position in the first quadrant	How do mathematicians reflect? How do mathematicians translate?	<u>I See Reasoning</u> Page 81,82,86 NRICH <u>Transformations on a Pegboard</u> <u>More Transformations on a Pegboard</u>	1.27: TP 6.1-6.4
Reflection			
Reflection with co-ordinates			
Translation			
Translation with co-ordinates			
<u>Measurement: Converting Units (2 WEEKS)</u>			
Kilograms and kilometres	<u>White Rose Activities</u> Metric units Imperial units How do mathematicians convert measure? How do mathematicians convert time?	<u>I See Reasoning</u> Page 66,68,69	<u>Yr5 NCETM assessment materials</u> P21-24
Milligrams and millilitres			
Metric units			
Imperial units			
Converting units of time			
Timetables			
<u>Measurement: Volume (1 WEEK)</u>			<u>Year 5 Spine 2</u>
What is volume?	How do mathematicians estimate volume?	<u>I See Reasoning</u> p70-71	2.20: TP 1.1-1.5, 2.1-2.8, 3.1-3.11, 4.1-4.4, 5.1-5.4
Compare volume			
Estimate volume			

Estimate capacity			
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