Mathletics White Rose maths (WRM) Understanding Practice and Fluency (UPF)







Mathletics

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Thank you for using Mathletics. We look forward to sharing the love of learning with your school.



Understanding Practice and Fluency (UPF)

Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number			
Quest: Place Value Y3A1			
Learning Journey	Steps	Content	Detail
Hundreds	1	Counting by skip counting forwards or backwards by 100s from any multiple of 100 up to 1000	 use concrete materials, models, drawings, number lines/charts to skip count forwards or backwards by 100s from any multiple of 100 up to 1000 skip count forwards or backwards by 100s from any multiple of 100 using understanding of the number sequence and place value up to 1000 recognise an error in the skip counting sequence
	Identi	fy, represent and estin	nate numbers using different representations
		Qu	est: Place Value Y3A1
Numbers to 1,000	1	Identifying numbers before and after within 1,000	 identify the number that comes before a given 3-digit number up to 1,000; describe this number as 'one more than' identify the number that comes after a given 3-digit number up to 1,000; describe this numbers as 'one less than' identify the number that comes before or after a given 3-digit number up to 1,000; describe this number as 'one more than' or 'one less than'
	2	Reading and writing 3-digit numbers using words and numerals	 write a given 3-digit number in words, eg 456 as four hundred and fifty-six write the numerals for a 3-digit number given in words
	F	Read and write numbe	ers up to 1,000 in numerals and in words
Recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)			
		Qu	est: Place Value Y3A1
100s, 10s and 1s	1	Using place value to partition 3-digit numbers	 use place value equipment to partition a given 3-digit number into hundreds, tens and ones describe a 3-digit number using words, eg 523 as '5 hundreds, 2 tens and 3 ones' write a 3-digit number in expanded notation, eg 523 as 500 + 20 + 3 write the numeral for a number represented by expanded notation recognise zero as a placeholder
	2	Identifying the place value of digits in 3-digit numbers	 write the numeral for a 3-digit number modelled using place value equipment identify the digit in the hundreds, tens or ones column for a given 3-digit number recognise that the value of the digit is determined by its place value, eg in 689 the digit 8 has a place value of tens and a total value of 80 identify, record and model a number using place value clues, eg 'a 5 in the hundreds and a 2 in the ones' as 502 recognise the role of zero as a placeholder create the smallest and largest numbers possible using 3 digits
	3	Partitioning 3-digit numbers using non- standard partitioning	 use place value equipment to partition a given 3-digit number using non-standard partitioning, eg 375 as 2 hundreds and 175 ones or 200 + 175 model and identify a number from non-standard partitioning, eg recognise 3 hundreds, 4 tens and 27 ones or 300 + 40 + 27 as 367



Understanding Practice and Fluency (UPF)

Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number					
Quest: Place Value Y3A1					
Learning Journey	Steps	Content	Detail		
Number line to 1,000	1	Counting by skip counting forwards by 10s from any multiple of 10 to 1,000	 use concrete materials, models, drawings, number lines/charts to skip count forwards by 10s from any multiple of 10 up to 1,000 skip count forwards by 10s from any multiple of 10 by memory and an understanding of the number sequence recognise an error in the skip counting sequence 		
	1	Counting forwards and backwards in ones within 1,000	 count forwards and backwards in ones between 100 and 1,000, starting from any number identify missing numbers in the hundreds on a number line up to 1,000 		
Find 1, 10 or 100 more or less than a number	2	Counting by tens and hundreds	 count forwards and backwards in tens, on and off the decade, with 2-digit, 3-digit and 4-digit numbers count forwards and backwards in hundreds, on the decade, with 3-digit and 4-digit numbers count forwards and backwards in hundreds, on and off the decade, with 3-digit and 4-digit numbers 		
	3	Finding numbers 10 or 100 before and after up to 1,000	 find the number '10 before' or '10 after' a given 2-digit, 3-digit or 4-digit number on or off the decade using number lines and number charts find the number '100 before' or '100 after' a given 3-digit or 4-digit number on or off the decade using number lines and number charts 		
	Compare and order numbers up to 1,000				
Quest: Place Value Y3A1					
Compare objects to 1,000	1	Comparing 3-digit numbers represented by models	 compare two numbers shown as place value objects and record using inequality symbols eg, Base 10, place value counters, part- whole models 		
Compare numbers to 1,000	1	Comparing numbers to 1,000	 model and compare two 3-digit numbers using place value equipment compare two 3-digit numerals; describe as 'more than' or 'less than', 'smaller than', greater than' 		
	2	Comparing numbers to 1,000 using <, = and > symbols	 model and compare two 3-digit numbers using place value equipment compare two 3-digit numerals using <, = and > symbols 		
Order numbers	1	Ordering numbers to 1,000	 order up to 4 consecutive numbers within 1,000 in ascending order or descending order; explain the reason for the order given order up to 4 non-consecutive numbers within 1,000 in ascending order; explain the reason for the order given 		



Understanding Practice and Fluency (UPF)

Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number				
	Quest: Place Value Y3A1			
Learning Journey	Steps	ps Content Detail		
Count in 50s 2	1	Counting by skip counting forwards by 50s from any multiple of 50 up to 500	 use concrete materials, models, drawings, number lines/charts to skip count by 50s from any multiple of 50 use knowledge of the number sequence to count in 50s from any multiple of 50 recognise an error in the skip counting sequence 	
	2	Counting by skip counting backwards by 50s from any multiple of 50 from 500	 use concrete materials, models, drawings, number lines/charts to skip count backwards by 50s use knowledge of the number sequence to count backwards in 50s from any multiple of 50 recognise an error in the skip counting sequence 	
	3	Counting by skip counting forwards or backwards by 50s from any multiple of 50 from zero to 500	 use concrete materials, models, drawings, number lines/charts to skip count by 50s use knowledge of the number sequence to count forwards or backwards in 50s from any multiple of 50 recognise an error in the skip counting sequence 	



Understanding Practice and Fluency (UPF)

Addition and Subtraction

a three-digit number and 100s					
Quest: Addition and Subtraction Y3A2					
Learning Journey	Steps	Content	Detail		
Add and subtract multiples of 100	1	Adding multiples of 100 up to 5 digits	 add multiples of 100 up to 5 digits solve addition problems using multiples of 100 up to 5 digits 		
	2	Subtracting multiples of 100 up to 5 digits	 subtract multiples of 100 up to 5 digits solve subtraction problems using multiples of 100 up to 5 digits 		
	3	Adding and subtracting multiples of 100 up to 5 digits	 add or subtract numbers up to 5 digits which are multiples of 100 		
Add/subtract 3 and 1-digit	1	Adding a 1-digit number and a 3-digit number, no exchange, using models	 add a 1-digit number to a 3-digit number using models and tables, eg, 234 + 3 = ? 		
numbers-not crossing 10	2	Subtracting a 1-digit number from a 3-digit number, no exchange, using models	 subtract a 1-digit number from a 3-digit number using models and tables, eg, 356 - 4 = ? 		
Add 3-digit and 1-digit numbers - crossing 10	1	Using a formal written algorithm for addition calculations with three- digit and one-digit numbers (with carrying)	 apply algorithms to solve problems with carrying;- include opportunities for students to write their own algorithms with digits in correct place value positions;- include word problems use estimation or reverse operation to check the reasonableness of solutions 		
Subtract a 1-digit number from a 3-digit - crossing 10	1	Subtracting a 1-digit number from a 3-digit number (exchange within 10)	 subtract a 1-digit number from a 3-digit number with exchange within 10, using models and tables, eg 346 - 7 = ? 		
	2	Solving word problems by subtracting a 1-digit number from a 3-digit number, exchange within 10	 solve word problems by subtracting a 1-digit number from a 3-digit number, exchange within 10 		
	1	Adding a multiple of 10 to a 3-digit number not crossing the 100	 add a multiple of 10 to a 3-digit number not crossing the 100, using models and tables, eg 239 + 40 = ? 		
Add/subtract 3- & 2-digit numbers-not crossing 100	2	Subtracting a multiple of 10 from a 3-digit number not crossing the 100	 subtract a multiple of 10 from a 3-digit number not crossing the 100, using models and tables, eg 775 – 50 = ? 		
	3	Adding and subtracting multiples of 10 from 3-digit numbers, not crossing the 100	 add and subtract a multiple of 10 from a 3-digit number not crossing the 100, using models and tables 		
	4	Comparing 3-digit and 2-digit number sentences (not crossing 100) using inequality symbols	 compare number sentences using inequality symbols with addition, eg, 773 + 1 [<, >, =] 773 + 10 compare number sentences using inequality symbols with subtraction eg 773 - 1 [<, >, =] 773 - 10 compare number sentences using inequality symbols with subtraction and addition eg 773 - 1 [<, >, =] 773 + 10 		
Add 3-digit and 2-digit numbers - crossing 100	1	Adding a multiple of 10 to a 3-digit number with an exchange	 add a multiple of 10 to a 3-digit number not crossing the 100, using models and tables, eg, 269 + 40 = ? 		

Add and subtract numbers montally including, a three-digit number and 1s, a three-digit number and 10s



Understanding Practice and Fluency (UPF)

Addition and Subtraction

a three-digit number and 100s					
Quest: Addition and Subtraction Y3A2					
Learning Journey	Steps	Content	Detail		
Subtract 2 and 3-digit numbers - crossing 100	1	Using a formal written algorithm to record subtraction calculations involving up to three-digit numbers (with decomposing)	 apply algorithms to solve problems with trading (decomposing) in 1 or more places, with the same number of places for both numbers, with fewer places in the second number (subtrahend) and with and without 1 or more zeros in the first number (minuend);- include opportunities for students to write their own algorithms with digits in correct place value positions and with the larger number first;- include word problems use estimation or reverse operation to check the reasonableness of solutions 		
Add and subtract 100s	1	Adding and subtracting multiples of 100 from a 3-digit number using models	 add multiples of 100 to any 3-digit number using models to solve missing numbers, eg 675 = 475 + 200, eg bar models, place value grid, Base ten subtract multiples of 100 from any 3-digit number using models to solve missing numbers eg 675 - 200, eg bar models, place value grid, Base ten add and subtract multiples of 100 from any 3-digit number using models eg, bar models, place value grid, Base ten 		
Spot the pattern - making it explicit	1	Describing patterns resulting from addition and subtraction involving at least one 3-digit number	 describe patterns resulting from addition involving at least one 3-digit number, eg, explain what has happened to the starting number 240 + ? = 377 describe patterns resulting from subtraction involving at least one 3-digit number eg explain what has happened to the starting number 		
Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and					
	1	Using a formal written algorithm for addition calculations up to three- digit numbers (no carrying)	 apply algorithms to solve problems without carrying, with the same number of places and with a different number of places use estimation or reverse operation to check the reasonableness of solutions 		
Add/subtract 2/3-digit numbers-not crossing 10 or 100	2	Using a formal written algorithm to record subtraction calculations involving up to three-digit numbers (without decomposing)	 apply algorithms to solve problems without trading (decomposing), with the same number of places for both numbers, with fewer places in the second number (subtrahend) and with and without 1 or more zeros in the first number (minuend);- include opportunities for students to write their own algorithms with digits in correct place value positions and with the larger number first;- include word problems use estimation or reverse operation to check the reasonableness of solutions 		

Add and subtract numbers mentally including, a three-digit number and 1s, a three-digit number and 10s



Understanding Practice and Fluency (UPF)

Addition and Subtraction

Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction					
Learning Journey	Steps	Content	Detail		
Add 2 and 3-digit numbers - crossing 10 or 100	1	Adding 2-digit and 3-digit numbers using place value partitioning on a number line (jump strategy)	 model and solve the addition of a 2-digit and 3-digit number using an empty number line, eg 823 + 56 as 823 + 50 = 873, 873 + 6 = 879 		
	2	Adding 2-digit and 3-digit numbers mentally using place value understanding (jump strategy)	 mentally solve addition problems involving 2-digit and 3-digit numbers using a jump strategy, eg 823 + 56 as 823 + 50 = 873, 873 + 6 = 879 record and explain the use of the strategy check calculations using the inverse operation 		
	3	Choosing efficient addition strategies when adding 2-digit and 3-digit numbers	 solve 2-digit and 3-digit addition problems using efficient and effective strategies depending on the numbers in the problem, eg use rounding and compensating, jump strategies, split strategies, place value strategies or bridging strategies record and explain the strategy using numerals, models and/or diagrams check the solution using a different strategy;- compare with own and others' strategies, discuss and compare the efficiency of strategies 		
Subtract 2-digits from 3-digits crossing 10 or 100	1	Subtracting a 2-digit number from a 3-digit number using place value partitioning on a number line (jump strategy)	 model and solve the subtraction of a 2-digit number from a 3-digit number using an empty number line, eg 823 – 56 as 823 – 50 = 773, 773 – 6 = 767 		
	2	Subtracting a 2-digit number from a 3-digit number mentally using place value understanding (jump strategy)	 mentally solve subtraction problems involving 2-digit and 3- digit numbers using place value partitioning, eg 823 - 56 as 823 - 50 = 773, 773 - 6 = 767 record and explain the use of the strategy check calculations using the inverse operation 		
	3	Choosing efficient subtraction strategies when subtracting 2-digit and 3-digit numbers	 solve 2-digit and 3-digit subtraction problems using efficient and effective strategies depending on the numbers in the problem, eg use rounding and compensating, jump strategies, split strategies, place value strategies or bridging strategies record and explain the strategy using numerals, models and/or diagrams check the solution using a different strategy;- compare with own and others' strategies, discuss and compare the efficiency of strategies 		
Add two 3-digit numbers - not	1	Using a formal written algorithm for addition calculations of 2 three-digit numbers (no carrying)	 add two 3-digit numbers using models, eg base 10, part-whole models, bar models 		
crossing 10 or 100	2	Adding two 3-digit numbers using columnar addition, not crossing the 10 or 100	 add two 3-digit numbers using columnar addition, not crossing the 10 or 100 		
Add two 3-digit numbers - crossing 10 or 100	1	Using a formal written algorithm for addition calculations of two three- digit numbers (with carrying)	 apply algorithms to solve problems with carrying in 1 or more places;- include opportunities for students to write their own algorithms with digits in correct place value positions;- include word problems use estimation or reverse operation to check the reasonableness of solutions 		



Understanding Practice and Fluency (UPF)

Addition and Subtraction

Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction				
Learning Journey	Steps	Content	Detail	
Subtract 3-digit numbers - no exchange	1	Subtracting 2 three-digit numbers using efficient methods with no exchange	 subtract 2 three-digit numbers using bar models and number lines subtract 2 three-digit numbers using base 10 representation subtract 2 three-digit numbers using column method 	
Subtract 3-digit numbers - exchange	1	Subtracting 2 three-digit numbers using efficient methods with no exchange (column method)	 subtract 2 three-digit numbers using column method using visual representation of calculation, eg place value, bar model, number line 	
Est	imate t	he answer to a calculation and us	e inverse operations to check answers	
		Quest: Addition and S	ubtraction Y3A2	
Estimate answers to calculations	1	Estimating additions	 round numbers to the nearest multiple of 100 to estimate additions, eg 546 + 789 as 500 + 800 round numbers to the nearest multiple of 10 or 100 to estimate additions, eg 546 + 789 as 540 + 800 explain the reason for the estimation used and whether the estimation is higher or lower than the actual answer 	
	2	Estimating subtractions	 round numbers to the nearest multiple of 100 to estimate subtractions, eg 546 - 189 as 500 - 200 round numbers to the nearest multiple of 10 or 100 to estimate subtractions, eg 746 - 389 as 740 - 400 explain the reason for the estimation used and whether the estimation is higher or lower than the actual answer 	
Check answers	1 Checking accuracy of addition and subtraction calculations		 check solutions to problems by using the inverse operation round numbers appropriately when obtaining estimates to numerical calculations use estimation to check the reasonableness of answers to addition and subtraction calculations 	
Solve problems	s, includ	ling missing number problems, us addition and su	sing number facts, place value, and more complex btraction	
		Quest: Addition and S	ubtraction Y3A2	
 use a bar model as a tool to represent an addition or subtraction problems using a bar model use a bar model as a tool to represent an addition or subtraction problem select an appropriate mental or written strategy to solve the problem 				



Understanding Practice and Fluency (UPF)

Multiplication and division – A

Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables				
Quest: Multiplication and Division Y3A3				
Learning Journey	Steps	Content	Detail	
Multiplication - Equal groups	1	Solving multiplication problems using fair shares or equal grouping (within 100)	 solve fair share multiplication or division problems (with unknown in any position), eg '20 flowers are to be placed in 4 bunches, how many flowers will be in each bunch?' solve equal grouping multiplication or division problems (with unknown in any position), eg 'There are 9 tables in a cafeteria. Each table has 5 chairs. What is the total number of chairs in the cafeteria?' write equations using a symbol, eg a box or a blank, to represent the unknown number compare their own and others' methods of solution 	
Multiply by 3	1	Exploring multiplication by 3	 relate multiplication by 3 to doubles and 1 more group;- model and describe, eg '3 groups of 4 is the same as double 4 and one more group of 4' explore patterns of the multiplication facts for 3 on a number chart model the 2 related multiplication facts, eg 3 x 4 and 4 x 3 	
	2	Recalling multiplication facts for 3 (up to 12x)	• recall the multiplication facts for 3	
	3	Using multiplication facts for 3 (up to 12x)	 solve and create multiplication problems in context (using multiplication facts for 3), including word problems and models 	
Divide by 3	1	Dividing by 3	 model and describe the related multiplication and division facts for 3 using models, drawings or manipulatives, eg 5 x 3 = 15 and 15 divided by 3 = 5 relate division to how many (whole) times the divisor goes into the dividend 	
	2	Using division facts for 3 up to 36	 solve and create division problems in context (using multiplication facts for 3), including word problems and models 	
The 3 times- table	1	Multiplying and dividing by 3	 recall the multiplication facts and related division facts for 3 solve multiplication and division problems with 3, including word problems 	
	1	Exploring multiplication by 4 up to 48	 relate multiplication by 4 to double multiplication by 2 explore patterns of the multiplication facts for 4 on a number chart model the 2 related multiplication facts, eg 3 x 4 and 4 x 3 	
Multiply by 4	2	Recalling multiplication facts for 4 (up to 12x)	• recall the multiplication facts for 4	
	3	Using multiplication facts for 4	 solve and create multiplication problems in context (using multiplication facts for 4), including word problems 	
	1	Dividing by 4 up to 48	 model and describe the related multiplication and division facts for 4 using models, drawings or manipulatives, eg 4 x 3 = 12 and 12 divided by 3 = 4 relate division to how many (whole) times the divisor goes into the dividend 	
Struce by 4	2	Recalling division facts for 4 up to 48	• recall the division facts for 4 using models	
	3	Using division facts for 4 up to 48	 solve and create division problems in context (using multiplication facts for 4), including word problems and models 	



Understanding Practice and Fluency (UPF)

Multiplication and division – A

Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables			
Quest: Multiplication and Division Y3A3			
Learning Journey	Steps	Content	Detail
The 4 times- tables	1	Multiplying and dividing by 4 up to 48	 recall the multiplication facts and related division facts for 4 solve multiplication and division problems with 4, including word problems
Multiply by 8	1	Exploring multiplication by 8 up to 96	 use concrete materials, models, drawings, number lines/ charts to skip count by 8 from zero;- explore patterns of the multiplication facts for 8 on a number chart relate multiplication by 8 to double multiplication by 4
	2	Recalling and using multiplication facts for 8 (up to 96)	 recall the multiplication facts for 8 solve multiplication problems with 8 including word problems
Divide by 8	1	Dividing by 8 up to 96	 model and describe the related multiplication and division facts for 8 using models, drawings or manipulatives, eg 8 x 3 = 24 and 24 divided by 3 = 8 relate division to how many (whole) times the divisor goes into the dividend
	2	Recalling and using division facts for 8 up to 96	 recall the division facts for 8 solve division problems with 8 including word problems
The 8 times- table	1	Multiplying and dividing by 8 up to 96	 recall the multiplication facts and related division facts for 8 solve multiplication and division problems with 8, including word problems



Understanding Practice and Fluency (UPF)

Multiplication and division

Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods

Quest: Multiplication and division – Sp			
Learning Journey	Steps	Content	Detail
Comparing statements	1	Solving word problems involving comparisons	solve word problems involving comparisons
	1	Using the commutative law of multiplication up to 12 x 12	• use the commutative law of multiplication, eg, $7 \times 12 = 12 \times 7$
calculations	2	Using place value and related calculations to solve multiplication problems	• use place value and related calculations to solve problems, eg, $6 \times 2 = 12$, $60 \times 2 = 120$. Because one number is ten times bigger, the answer will be ten times bigger
Multiply 2-digits by 1-digit (not bridging 10)	1	Multiplying 2-digit numbers by 1-digit numbers using the contracted algorithm (no carrying)	• multiply the ones, then the tens, without regrouping
	2	Multiplying 2-digit numbers by 1-digit numbers using the columnar contracted algorithm (2, 3, 4, 5, 8) no regrouping	 multiply 2-digit numbers by 1-digit numbers using the columnar contracted algorithm (2, 3, 4, 5, 8) no regrouping, eg multiply the ones, then the tens
Multiply 2-digits by 1-digit (bridging 10)	1	Multiplying 2-digit numbers by 1-digit numbers using the contracted algorithm (with regrouping)	 multiply 2-digit numbers by 1-digit numbers using the contracted algorithm (with regrouping)
Divide 2-digit by 1-digit-no exchange or remainder	1	Dividing 2-digit numbers by a 1-digit number by partitioning (no exchange, no remainders)	 divide 2-digit numbers by a 1-digit number using partitioning and place value grids, part-whole models etc
Divide 2-digit by 1-digit-exchange, no remainder	1	Dividing 2-digit numbers by a 1-digit number by partitioning (with exchange, no remainders)	 divide 2-digit numbers by a 1-digit number using partitioning and place value grids, part whole models etc
	2	Selecting efficient strategies to solve division problems	 select and use a variety of mental and informal written strategies to solve division problems apply the inverse relationship of multiplication and division to justify answers check the answer to a word problem using digital technologies record mental strategies accurately
Divide 2-digits by 1-digit (with a remainder)	1	Dividing 2-digit numbers by a 1-digit number by partitioning (with remainders)	 divide 2-digit numbers by a 1-digit number using partitioning and number lines, place value grids, part–whole models etc
	2	Solving division problems with 2-digit and 1-digit numbers, with remainders	 problem solve using 2-digit and 1-digit numbers by comparing statements



Understanding Practice and Fluency (UPF)

Multiplication and division – Sp

Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

Quest: Multiplication and division – Sp1b			
Learning Journey	Steps	Content	Detail
Scaling	1	Describing comparisons using the language of multiplication	 describe comparisons using the language of multiplication, eg 35 = 5 x 7 as 35 is 5 times as many as 7 and 7 times as many as 5
How many ways?	1	Using skip counting to solve multiplication problems up to 1,000 (by 25s, 50s, 100s)	 use skip counting to solve multiplication problems use rectangular displays or tree diagrams to find the total number of combinations possible when given 2 characteristics, eg find the total number of possible outfits given 3 pants and 2 t-shirts relate multiplication to finding the total number of possible combinations



Understanding Practice and Fluency (UPF)

Measurement – Sp(1)

Add and subtract amounts of money to give change, using both ${\tt f}$ and p in practical contexts				
		Que	est: Money Sp2	
Learning Journey	Steps	Content	Detail	
Pounds and pence	1	Using notes and coins to make amounts and calculate change, United Kingdom	- calculate cost of multiple items in pence and calculate change required from $\pounds 1$	
	2	Counting and ordering notes and coins United Kingdom	 calculate total of coins up to £1 and divide evenly into groups Ordering amounts of money shown in pounds and pence 	
Convert pounds and pence	1	Converting between pounds and pence	 convert between pounds and pence using the knowledge that £1 is 100p, eg, 165p = £1 and 65p (no decimals) 	
Add and subtract money	1	Adding 2 amounts of money using pictorial representation, partitioning and models (no decimals) United Kingdom	 add 2 amounts of money using pictorial representation, partitioning and models eg part-whole model and bar models (no decimals) subtract 2 amounts of money using jump strategy and number lines to calculate the difference between the two amounts (no decimals) 	
Give change	1	Calculating change using models (no decimals) United Kingdom	 calculate change and select the correct coins using part–whole models and number lines 	

Understanding Practice and Fluency (UPF)

Statistics

Interpret and present data using bar charts, pictograms and tables			
Quest: Statistics Y3Sp3			
Learning Journey	Steps	Content	Detail
Pictograms	1	Collecting, recording and interpreting data in tables and pictograms	 choose effective ways to collect and record data in a table read and interpret data in tables choose effective ways to collect and record data using pictogram read and interpret data in pictograms
Bar charts	1	Reading and interpreting grouped and/or ordered data in a bar chart	 become familiar with grouped/ordered data in a bar chart ask and answer questions related to grouped or ordered data in a bar chart
Tables	1	Reading and interpreting tables and bar charts/ graphs (block style)	 read data from tables and bar charts/graphs interpret data from tables and bar charts/graphs draw conclusions related to the data in the display

Mathletics



Understanding Practice and Fluency (UPF)

Measurement – Sp(2)

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)				
Quest: Length Y3Sp4				
Learning Journey	Steps	Content	Detail	
Measure length	1	Measuring in metres and centimetres	 estimate and measure lengths and distances using metres and centimetres explain strategies used to estimate lengths and distances, such as by referring to a known length, eg 'My handspan is 10 cm and my desk is 8 handspans long, so my desk is about 80 cm long' record lengths and distances using abbreviations for metres and centimetres, eg 1 m 25 cm 	
	2	Selecting appropriate units of measurement: metres, centimetres, millimetres	 explore the appropriateness of units when measuring length select and justify the most appropriate metric unit to measure given lengths and distances 	
	3	Converting between centimetres and millimetres (mixed numerals and fractions)	 convert between centimetres and millimetres using mixed numerals and fractions 	
Equivalent lengths - m and cm	1	Converting between metres and centimetres (whole numbers only)	 describe 1 m as 100 cm convert between metres and centimetres using whole numbers, eg 3 m is the same as 300 cm record measurement equivalents in a table explain the relationship between the size of a unit and the number of units needed 	
Equivalent lengths - mm and cm	1	Converting between centimetres and millimetres (whole numbers only)	 describe 1 cm as 10 mm convert between centimetres and millimetres using whole numbers record measurement equivalents in a table explain the relationship between the size of a unit and the number of units needed 	
Compare lengths	1	Comparing lengths in millimetres and centimetres	 compare lengths and distances using millimetres and centimetres 	
	2	Ordering lengths in millimetres and centimetres	order lengths and distances using millimetres and centimetres	
	3	Comparing lengths of mixed units	• measure and compare lengths of mixed units, eg 1 m 45 cm	
Add and subtract	1	Adding and subtracting lengths	• add and subtract lengths of a single unit	
lengths	2	Adding and subtracting lengths of mixed units	 add and subtract lengths of mixed units, eg 1 m 45 cm + 2 m 15cm 	

Understanding Practice and Fluency (UPF)

Measurement – Sp(2)

Measure the perimeter of simple 2-D shapes			
Quest: Perimeter Y3Sp4			
Learning Journey	Steps	Content	Detail
Measure perimeter	1	Measuring perimeter in centimetres	 calculate the perimeter of 2D shapes placed on centimetre squares
Calculate perimeter	1	Calculating the perimeter of a regular shape in centimetres	 calculate the perimeter of a regular shape in centimetres using mental strategies such as repeated addition where all lengths are shown calculate the perimeter of a regular shape in cm using mental strategies such as repeated addition where one or more lengths are missing

Mathletics



Understanding Practice and Fluency (UPF)

Fractions, decimals and percentages – Sp

Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators				
Quest: Fractions Y3Sp5				
Learning Journey	Steps	Content	Detail	
Unit and non- unit fractions	1	Using estimation and addition strategies to find simple unit fractions of sets (denominators 2, 3, 4, 5, 6, 8)	 estimate the value of a given unit fraction of a set or quantity;- check using repeated addition use trial and improvement with repeated addition and grouping, eg 1/3 of 18 as 5 + 5 + 5 = 15 so let's try 6 + 6 + 6 = 18 	
	2	Using estimation and addition strategies to find simple proper fractions of sets (denominators 2, 3, 4, 5, 6, 8)	 estimate the value of a given proper fraction of a set or quantity;- check using repeated addition use trial and improvement with repeated addition and equal sharing, eg 2/3 of 18 as 5 + 5 + 5 = 15 so let's try 6 + 6 + 6 = 18 so 2/3 is 6 + 6 explore equivalence between halves, quarters, eighths and thirds and sixths 	
	1	ldentifying simple fractions that are equivalent to 1 whole	 use models to identify fractions that are equivalent to one whole record equivalences eg 3/3 = 1 	
Making the whole	2	Using models to find the whole given the unit fraction of a set (denominators 2, 3, 4, 5, 6, 8)	 find the whole given the fraction of a set, eg Anne has 4 stickers. She has 1/3 of the sticker collection. How many stickers are there in the sticker collection? use addition and subtraction strategies 	
Count up and d	own in	tenths; recognise that ter dividing one-digit	nths arise from dividing an object into 10 equal parts and in numbers or quantities by 10	
		Quest:	Fractions Y3Sp5	
Count in tenths	1	Introducing tenths	 recognise that tenths come from 10 equal parts find tenths of objects, sets and shapes find the whole from the part use language 'one tenth', 'two tenths' etc use symbols to represent fractions 1/10, 2/10 etc recognise that tenths come from dividing 1-digit numbers or quantities by 10 	
	2	Counting in tenths	 count up in tenths using proper fractions and mixed numbers (starting from any multiple of tenths), including on a number line count down in tenths using proper fractions and mixed numbers (starting from any multiple of tenths), including on a number line represent counting in tenths using number lines and models 	
	3	Ordering tenths (up to 1 whole)	• order tenths in symbols and words	
Fractions on a number line	1	Counting and representing mixed numbers on a number line up to 3 (halves, quarters, eighths)	 count in mixed numbers on a number line locate and represent mixed numbers on a number line, including on a partially-completed number line 	
	2	Counting and representing mixed numbers on a number line up to 3 (thirds)	 count in mixed numbers on a number line up to 3 locate and represent mixed numbers on a number line, including on a partially-completed number line 	



Understanding Practice and Fluency (UPF)

Fractions, decimals and percentages – Sp

Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators			
Quest: Fractions Y3Sp5			
Learning Journey	Steps	Content	Detail
Fraction of a set	1	Finding the fraction of an amount by dividing into equal groups with models, within 100 (denominators up to 10)	 find the unit fraction of an amount by dividing an amount into equal groups find the proper fraction of an amount by dividing an amount into equal groups

Fractions, decimals and percentages – Su

Recognise and show, using diagrams, equivalent fractions with small denominators					
		Quest: Frac	tions Y3Su1		
Learning Journey	Steps	Content	Detail		
Equivalent fractions	1	Investigating equivalent fractions up to and including 1 whole using a number line (denominators 2, 4 and 8; 3 and 6; 5 and 10 and 100)	 model, compare and represent equivalent fractions with related denominators using a number line create equivalent fractions using a number line solve word problems using equivalent fractions to make comparisons, including using measurements of length, eg Which is longer, 1/2 a metre or 3/4 of a metre? 		
	2	Investigating equivalent fractions greater than 1 using a number line (denominators 2, 4 and 8; 3 and 6; 5 and 10 and 100)	 model, compare and represent the equivalence of fractions with related denominators using a number line create equivalent fractions using a number line solve word problems relating to equivalent fractions, including using measurements of length, eg Which is longer, half a metre or 3/4 of a metre? 		
	3	Investigating equivalent fractions, including fractions greater than 1 whole using a number line (denominators 2, 4 and 8; 3 and 6; 5 and 10 and 100)	 model, compare and represent the equivalence of proper, mixed or improper fractions with related denominators using a number line create equivalent fractions using a number line solve word problems relating to equivalent fractions, including using measurements of length, eg Which is longer, half a metre or 3/4 of a metre? 		
	4	Investigating equivalent fractions up to and including 1 whole using multiplication (denominators of 2, 4 and 8; 3 and 6; 5, 10 and 100)	 model, compare and represent the equivalence of fractions by recognising the factorial relationship between the numerators and denominators create equivalent fractions using multiplication 		
Compare and order unit fractions, and fractions with the same denominators					
		Quest: Frac	tions Y3Su1		
Compare and order fractions	1	Ordering and comparing simple proper fractions with different denominators using models as a scaffold (denominators 2, 3, 4, 5, 6, 7, 8)	 order fractions with different denominators, including on a number line marked with 0, 1/2, 1;- use models to support decisions compare fractions using models and 1/2 as a reference, eg 3/8 and 6/7, '3/8 is closer to one half and 6/7 is closer to one whole so 6/7 is larger' 		



Understanding Practice and Fluency (UPF)

Fractions, decimals and percentages – Su

Compare and order unit fractions, and fractions with the same denominators				
Quest: Fractions Y3Su1				
Learning Journey	Steps	Content	Detail	
Compare and order fractions	2	Comparing and ordering simple fractions with the same numerator up to 1	 compare simple fractions with the same numerator up to 1 order simple fractions with the same numerator up to 1 	
Add and sub	tract fra	actions with the same der	nominator within one whole [for example, 5/7 + 1/7 = 6/7]	
		Quest	: Fractions Y3Su1	
Add fractions	1	Adding unit fractions with the same denominators (2, 4, 8) to make fractions up to and including 1 whole (with models)	 add unit fractions with the same denominator (2, 4, 8) to make fractions up to and including 1 whole using models solve problems involving adding fractions with the same denominator (2, 4, 8) 	
	2	Adding unit fractions with the same denominator (2, 4, 8) to make fractions up to and including 1 whole (without models)	 add unit fractions with the same denominator (2, 4, 8) to make fractions up to and including 1 whole without models solve unit fraction problems where the parts are unknown, eg 1/4 plus missing fraction equals 1 whole 	
	3	Adding proper fractions with the same denominator using models to make fractions up to 1 whole	 add 2 or more fractions with the same denominator up to one whole (with and without models) 	
Subtract fractions	1	Subtracting unit fractions with the same denominator (2, 4, 8) including subtracting from 1 whole (with models)	 subtract unit fractions with the same denominator (2, 4, 8) up to 1 whole with the use of models solve problems involving subtracting unit fractions with the same denominator (2, 4, 8) from 1 whole 	
	2	Subtracting unit fractions with the same denominator (2, 4, 8) including subtracting from 1 whole (without models)	 subtract unit fractions with the same denominator (2, 4, 8) up to 1 whole without the use of models solve unit fraction problems where the parts are unknown, eg 1 whole minus missing fraction equals 1/4 	
	3	Subtracting proper fractions with the same denominator using models to make fractions within 1 whole	 subtract 2 or more fractions with the same denominator up to one whole (with and without models) 	
	4	Subtracting simple fractions with the same denominator using models, including subtracting from 1 whole	 use models to subtract 2 or more fractions with the same denominator (including subtracting from one whole) solve problems involving adding fractions with the same denominator 	



Understanding Practice and Fluency (UPF)

Measurement – Su(1)

Know the number of seconds in a minute and the number of days in each month, year and leap year				
	Quest: Time Y3Su2			
Learning Journey	Steps	Content	Detail	
Months and years	1	Using calendars to solve problems	 locate any given date, including today's date, on a calendar use a calendar to locate the date to match a given description, eg if today is Monday 8th April, then what is the date on Thursday?; find the date of the third Thursday in March use a calendar to determine the number of days, weeks or months until a future event or between events use a calendar to calculate and describe lengths of time in days/ weeks 	
Hours in a day	1	Introducing formal units for time: hours	 establish the need for formal units (hours) to measure time identify situations where hours are an appropriate unit for measuring the duration of time identify the relationship between half hours and hours know that there are 24 hours in one day introduce the abbreviation h to record time in hours compare durations in hours 	
Estimate and re of seconds, m	ad time ninutes	e with increasing accurac and hours; use vocabular	y to the nearest minute; record and compare time in terms y such as o'clock, am/pm, morning, afternoon, noon and midnight	
		Que	st: Time Y3Su2	
Telling the time to 5 minutes	1	Telling time to five minutes (analogue)	 observe and describe the movement of the minute hand as time passes, including the time it takes for the minute hand to move from one numeral to the next and the time it takes for the minute hand to complete one revolution observe and describe the movement of the hour hand as time passes, including the time it takes for the hour hand to move from 1 numeral to the next and the time it takes for the hour hand to complete 1 revolution read time on analogue clocks to 5 minutes using the terms 'o'clock', 'past' and 'to', including 'half past', 'quarter past' and 'quarter to' and write in words position or draw the hands on an analogue clock to show time to 5 minutes where the time is given using the terms 'o'clock', 'past' and 'to,' including 'half past' and 'quarter to' 	
	2	Telling the time five minutes using Roman Numeral clocks	• observe and describe the movement of the minute hand as time passes, including the time it takes for the minute hand to move from 1 numeral to the next and the time it takes for the minute hand to complete 1 revolution	



Understanding Practice and Fluency (UPF)

Measurement – Su(1)

Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight

	Quest: Time Y3Su2			
Learning Journey	Steps	Content	Detail	
	1	Telling time to the minute (analogue)	 read time on analogue clocks to the minute using the terms 'o'clock', 'past' and 'to', including 'half-past', 'quarter past' and 'quarter to' observe and describe the position or draw the hands of an analogue clock when reading time to the minute, including the hour hand, minute hand and second hand position or draw the hands on an analogue clock to show time to the minute where the time is given using the terms 'o'clock', 'past' and 'to', including 'half-past', 'quarter past' and 'quarter to' 	
Telling the time to the minute	2	Telling time to the minute (Roman numeral clocks)	 read time on analogue clocks with Roman numerals to the minute using the terms 'o'clock', 'past' and 'to', including 'halfpast', 'quarter past' and 'quarter to' record times on analogue clocks with Roman numerals to the minute in 12-hour digital format observe and describe the position or draw the hands of an analogue clock with Roman numerals when reading time to the minute, including the hour hand, minute hand and second hand position or draw the hands on an analogue clock with Roman numerals to show time to the minute where the time is given using the terms 'o'clock', 'past' and 'to', including 'half-past', 'quarter past' and 'quarter to' position or draw the hands on an analogue clock with Roman numerals to show time to the minute where the time is given using the terms 'o'clock', 'past' and 'to', including 'half-past', 'quarter past' and 'quarter to' position or draw the hands on an analogue clock with Roman numerals to show time to the minute where the time is given in 12-hour digital format connect 12-hour digital displays for times, to the minute, to their corresponding display on an analogue clock with Roman numerals 	
Using a.m. and p.m.	1	Using am and pm notation	 know that there are 24 hours in a day recognise that midday/noon divides the day into two equal parts of 12 hours each establish the need to distinguish between times in the first 12 hours of the day and the second 12 hours of the day, and introduce am and pm notation know and record midday/noon as 12pm and 12:00pm, and midnight as 12am and 12:00am use am and pm notation to record times in relation to midday/ noon and midnight read times written using am and pm notation using 'past', 'to', morning, afternoon, evening and night appropriately', eg 3:40pm is 'twenty to four in the afternoon' 	
24-hour clock	1	Matching 24-hour notation to 12-hour notation	 convert between 24-hour time notation and 12-hour time notation 	



Understanding Practice and Fluency (UPF)

Measurement – Su(1)

Compare durations of events [for example, to calculate the time taken by particular events or tasks]			
		Que	st: Time Y3Su2
Learning Journey	Steps	Content	Detail
Finding the duration	1	Calculating elapsed time within one unit of measurement	 estimate and determine elapsed time in hours only estimate and determine elapsed time in minutes only, without crossing an hour estimate and determine elapsed time in minutes only, including crossing an hour
Comparing durations	1	Comparing durations in hours, minutes and seconds	 compare and sequence durations given in a combination hours, minutes and seconds. measure and compare time intervals in mixed units (h, min, s)
Start and end times	1	Calculating start and end times (12 and 24 hour)	 calculate the end time of events using start and elapsed times using models and tables calculate the start time of events using elapsed and finishing times using models and tables
Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight			
Quest: Time Y3Su2			
Measuring time in seconds	1	Comparing and ordering time in terms of seconds and minutes	 order time in terms of seconds and minutes compare time in terms of seconds and minutes using <, > or =



Understanding Practice and Fluency (UPF)

Geometry - Properties of shape

Recognise angles as a property of shape or a description of a turn			
Quest: Properties of shape Y3Su3			
Learning Journey	Steps	Content	Detail
Turns and angles	1	Recognising angles as a description of a turn	 recognise angles as a measure of a turn (1/2, 1/4, 3/4) and use appropriate language to describe the rotation such as quarter turn, half turn, clockwise and anticlockwise
Identify right an cor	gles, re nplete	cognise that 2 right angle turn; identify whether an	es make a half-turn, 3 make three-quarters of a turn and 4 a gles are greater than or less than a right angle
		Quest: Prop	perties of shape Y3Su3
Right angles in shapes	1	Introducing right angles	 identify right angles on 2D shapes and 3D shapes identify right angles in pictures, designs and the environment identify right angles in line diagrams use and interpret the symbol [] in diagrams to represent a right angle define perpendicular lines and identify them in pictures, designs and the environment recognise that a pair of perpendicular lines form 4 right angles
Compare angles	1	Classifying angles in relation to a right angle	 classify angles as 'less than a right angle', 'about the same as a right angle', 'greater than a right angle'
lde	entify ho	orizontal and vertical line	s and pairs of perpendicular and parallel lines
		Quest: Prop	perties of shape Y3Su3
Draw accurately	1	Drawing lines accurately in cm and mm	draw lines measuring accurately in cm and mm
Horizontal and	1	Identifying horizontal and vertical lines on shapes and objects	 identify horizontal and vertical lines on shapes and objects, eg, alphabet letters, numbers, shapes and environmental shapes
vertical	2	Sorting horizontal and vertical lines on shapes and objects	• sort objects in a table based on properties
Develletered	1	Classifying plane shapes by their spatial features	 classify plane shapes by the nature and number of sides, angles and symmetry;- including parallel/perpendicular sides, right, obtuse, acute angles
Parallel and perpendicular	2	Identifying parallel sides in quadrilaterals	 manipulate and compare the special quadrilaterals;- identify parallel sides identify and sort quadrilaterals by their number of parallel lines (if any)
Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different			
		Quest: Prop	perties of shape Y3Su3
Recognise and describe 2-D shapes	1	Comparing and describing 2D shapes, including special quadrilaterals	 identify and name a shape given a description of its features sort two-dimensional shapes using given attributes, eg number of sides, number of parallel sides compare similarities and differences between two-dimensional shapes, including the special quadrilaterals



Understanding Practice and Fluency (UPF)

Geometry - Properties of shape

Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them				
		Quest: Prop	perties of shape Y3Su3	
Learning Journey	Steps	Content	Detail	
Recognise and describe 3-D shapes	1	Comparing, sorting and naming prisms and pyramids	 compare and sort prisms and pyramids by their geometric properties, eg number of edges, number of vertices describe and name prisms and pyramids by the shape of their base 	
	2	Comparing 3D shapes including pyramids, prisms, cones, spheres and cylinders	 describe similarities and differences between prisms (including cubes), pyramids, cylinders, cones and spheres, eg, surfaces, faces, edges and vertices recognise and describe the use of 3D shapes in a variety of contexts, eg, buildings, packaging identify and name 3D shapes as prisms (including cubes), pyramids, cylinders, cones and spheres 	
Make 3-D shapes	1	Making basic models of 3D shapes	 use a variety of materials to make models of prisms (including cubes), pyramids, cylinders, cones and spheres, given a 3D shape, picture or photograph to view identify and describe the 2D shapes that can be found in a 3D shape, eg, build a structure using concrete materials and describe it using geometric terms so that a partner will be able to build it 	



Understanding Practice and Fluency (UPF)

Measurement – Su(2)

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)					
	Quest: Mass Y3Su4				
Learning Journey	Steps	Content	Detail		
Measure mass using kg & g	1	Measuring mass in kilograms	 compare and order 2 or more objects by mass measured to the nearest kilogram using carried scales estimate the number of objects that have a total mass of 1 kilogram and check by measuring estimate mass using a personal reference for a kilogram record mass using the abbreviation 'kg' compare masses using uniform informal units and the symbols >, =, < compare masses using simple scaling by integers, eg 'five times as heavy' 		
	2	Measuring in grams	 estimate mass using personal references for grams and 'guess and check' measure mass in grams by using and interpreting varied scales and images of scales record mass in grams using the appropriate abbreviation (g) 		
	3	Measuring in grams and kilograms	 estimate mass using personal references for grams and kilograms choose appropriate standard units to estimate and measure (g/kg) measure mass in grams and kilograms by using and interpreting varied scales record mass in grams, kilograms and mixed units using the appropriate abbreviations (g), (kg), eg 5 kg and 500 g 		
Compare and order mass	1	Comparing and ordering masses using standard metric units	 measure mass by using and interpreting varied scales compare and order masses using grams and kilograms and justify comparisons represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale compare masses using uniform informal units and the symbols >, =, < 		
Add and subtract mass	1	Solving addition and subtraction problems involving masses of the same unit	 solve addition and subtraction problems involving masses of the same unit 		



Understanding Practice and Fluency (UPF)

Measurement – Su(2)

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)				
Quest: Capacity Y3Su4				
Learning Journey	Steps	Content	Detail	
Measure capacity	1	Introducing formal units for volume and capacity: litres	 recognise and explain the need for formal units to measure volume and capacity develop a personal reference for one litre and fractions of 1 litre (quarters and halves);- relate the litre to familiar everyday containers, eg milk cartons recognise that one-litre containers can be a variety of shapes record volumes and capacities using the abbreviation for litres (l) 	
	2	Introducing formal units for volume and capacity: millilitres	 recognise the need for a formal unit smaller than the litre to measure volume and capacity recognise that there are 1,000 millilitres in 1 litre, ie 1,000 millilitres = 1 litre relate the millilitre to familiar everyday containers and familiar informal units, eg, 250 ml fruit juice containers, 1 teaspoon is approximately 5 ml 	
	3	Reading scales with 100 millilitre markings	 read a scale where every 100 ml is marked and labelled read a scale where every 100 ml is marked and half and l litre are labelled read a scale where every 100 ml is marked and every other 100 ml is labelled 	
Compare capacity	1	Estimating, comparing and measuring in litres	 estimate and measure capacities to the nearest litre compare and order 2 or more containers by capacity measured in litres, including the capacity of commercially packaged objects whose capacity is stated in litres record volumes and capacities using the abbreviation for litres (l) 	
	2	Estimating, comparing and measuring in mixed units of volume (l and ml)	• estimate and measure capacities to the nearest litre and millilitre	
	3	Comparing and ordering mixed units of volume (l and ml)	 compare and order 2 or more containers by capacity measured in litres, including the capacity of commercially packaged objects whose capacity is stated in litres and millilitres using inequality symbols (<, > or =) 	
Add and subtract	1	Adding and subtracting litres or millilitres	add and subtract litre measurementsadd and subtract millilitre measurements	
capacity	2	Adding and subtracting litres and millilitres	 add and subtract measurements in litres and millilitres eg 5 l and 300 ml + 3 l and 200 ml 	



Understanding Practice and Fluency (UPF)

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				
		Quest:	Place Value Y4A1	
Learning Journey	Steps	Content	Detail	
	1	Reading and writing Roman numerals to 100 (I to C)	 read and write Roman numerals to 100 (I to C) understand that over time the number system changed to include the concept of 0 and place value 	
to 100	2	Solving addition and subtraction problems using Roman numerals	 solve addition problems involving Roman numerals eg 10 more, 1 more solve subtraction problems involving Roman numerals eg 10 less, 1 less 	
		Round any number	to the nearest 10, 100 or 1,000	
		Quest:	Place Value Y4A1	
Davia d ta tha	1	Rounding numbers up to 1,000 to the nearest 10	• round numbers up to 1,000 to the nearest 10	
Round to the nearest 10	2	Rounding Roman numerals up to 100 to the nearest 10	• round a Roman numeral to the nearest 10	
Round to the nearest 100	1	Rounding numbers up to 1,000 to the nearest 100	 model a 3-digit number and recognise which hundred it is nearer to; explain reasoning round a 3-digit number to the nearest 100, recognise the digit in the tens column as the key digit 	
	2	Rounding Roman numerals up to 1000 to the nearest 100	• model a Roman numeral to the nearest 100	
		Count in multip	oles of 6, 7, 9, 25 and 1,000	
		Quest:	Place Value Y4A1	
Count in 1,000s	1	Counting by skip counting forwards or backwards by 1,000s to 10,000	 use Base 10, models, drawings, number lines/charts to skip count forwards or backwards by 1,000s from zero to 10,000 recognise an error in the skip counting sequence 	
Count in multiples of 6, 7, 9, 25 and 1,000	1	Counting in multiples of 6, 7, 9, 25 and 1,000	• count in multiples of 6, 7, 9, 25 and 1,000	
Recognise th	ne place	e value of each digit in a fo	our-digit number (thousands, hundreds, tens, and ones)	
		Quest:	Place Value Y4A1	
1,000s, 100s, 10s and 1s	1	Identifying the place value of digits in 4-digit numbers	 write the numeral for a 4-digit number modelled using place value equipment identify the digit in the thousands, hundreds, tens or ones column for a given 4-digit number identify, record and model a number using place value clues, eg 'an 8 in the thousands, 5 in the hundreds and a 2 in the ones' as 8502 recognise the role of zero as a placeholder create the smallest and largest numbers possible using 4 digits 	



Understanding Practice and Fluency (UPF)

Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)				
Quest: Place Value Y4A1				
Learning Journey	Steps	Content	Detail	
Partitioning	1	Using place value to partition 4-digit numbers	 use place value equipment to partition a given 4-digit number into thousands, hundreds, tens and ones describe a 4-digit number using words, eg, 9,523 as '9 thousands, 5 hundreds, 2 tens and 3 ones' write a 4-digit number in expanded notation, eg, 7,523 as 7,000 + 500 + 20 + 3 write the numeral for a number represented by expanded notation recognise zero as a placeholder 	
	2	Partitioning 4-digit numbers using non- standard partitioning	 use place value equipment to partition a given 4-digit number using non-standard partitioning, eg, 2,375 as 2 thousands, 1 hundred and 275 ones or 2,000 + 100 + 275 model and identify a number from non-standard partitioning, eg, recognise 3 hundreds, 4 tens and 27 ones or 300 + 40 + 27 as 367 	
	Identi	y, represent and estimate	e numbers using different representations	
		Quest:	Place Value Y4A1	
	1	ldentifying numbers before and after up to 4-digit numbers (within 10,000)	 identify the number that comes before a given 2-, 3- or 4-digit number up to 10,000; describe this number as 'one more than' identify the number that comes after a given 2-, 3- or 4-digit number up to 10,000; describe this number as 'one less than' identify the number that comes before or after a given 2-, 3- or 4-digit number up to 10,000; describe this number as 'one more than' or 'one less than' 	
	2	Reading and writing 4-digit numbers using words and numerals	 write a given 4-digit number in words, eg 4567 as four thousand, four hundred and sixty-seven write the numerals for a 4-digit number given in words 	
Number line to 10,000	3	Counting by tens and hundreds using models, number lines and charts	 count forwards and backwards in tens, on and off the decade, with 2-digit, 3-digit and 4-digit numbers using number lines and number charts count forwards and backwards in hundreds, on the decade, with 3-digit and 4-digit numbers using number lines and number charts count forwards and backwards in hundreds, on and off the decade, with 3-digit and 4-digit numbers using number lines and number charts 	
	4	Representing 4-digit numbers using words, numerals and objects	 model a given 4-digit number using concrete materials, pictures or drawings write the numerals in words, eg 'seven thousand, three hundred and fifty three' for a 4-digit number represented using place value equipment or using pictures, drawings 	

Understanding Practice and Fluency (UPF)

Number and Place value

Find 1,000 more or less than a given number			
Quest: Place Value Y4A1			
Learning Journey	Steps	Content	Detail
1,000 more or less	1	Finding the number 1,000 more or 1,000 less than a given number	 apply an understanding of place value to find the number 1,000 more or 1,000 less
		Order and comp	are numbers beyond 1,000
		Quest:	Place Value Y4A1
Compare 4-digit	1	Comparing numbers to	 model and compare two 4-digit numbers using place value equipment compare two numbers of up to 4 digits and describe using the
numbers		10,000	terms and symbols: greater than (>) or less than (<); explain the comparison using place value reasoning
	1	Ordering numbers to	 order up to 4 consecutive 2-digit, 3-digit or 4-digit numbers within 10,000 in ascending order or descending order; explain the reason for the order given
Order numbers up to 4-digits	I	10,000	 order up to 4 non-consecutive 2-digit, 3-digit or 4-digit numbers within 1,000 in ascending or descending order; explain the reason for the order given using place value reasoning
	2	Ordering numbers up to 5 digits	 arrange numbers of up to 5 digits in ascending and descending order
		Round any number	to the nearest 10, 100 or 1,000
		Quest:	Place Value Y4A1
	1	Rounding numbers up to 10,000 to the nearest	 model a 4-digit number and recognise which thousand it is nearer to; explain reasoning round a 4-digit number to the nearest 1 000; recognise the digit
Round to the nearest 1 000		1,000	in the hundreds column as the key digit
	2	Rounding numbers up to 10,000 to the nearest 10, 100 or 1,000	 round a 4-digit number to the nearest 10, 100 or 1,000; explain the rounding
		Count in multip	bles of 6, 7, 9, 25 and 1,000
		Quest:	Place Value Y4A1
Count in 25s	1	Counting by skip counting forwards by 25s from any multiple of 25 up to	 use concrete materials, models, drawings, number lines/charts to skip count by 25s from any multiple of 25 use knowledge of the number sequence to count in 25s from any multiple of 25
		10,000	recognise an error in the skip counting sequence
	2	Counting by skip counting backwards by 25s from	 use concrete materials, models, drawings, number lines/charts to skip count backwards by 25s use knowledge of the number sequence to count backwards in
	_	any multiple of 25 from 10,000	25s from any multiple of 25recognise an error in the skip counting sequence
	3	Counting by skip counting forwards or backwards by 25s from any multiple of 25 from zero to 10 000	 use concrete materials, models, drawings, number lines/charts to skip count by 25s use knowledge of the number sequence to count forwards or backwards in 25s from any multiple of 25
			 recognise an error in the skip counting sequence

Mathletics

Mathletics

Understanding Practice and Fluency (UPF)

Count backwards through zero to include negative numbers			
Quest: Place Value Y4A1			
Learning Journey	Steps	Content	Detail
Negative numbers	1	Introducing negative integers	• count backwards through 0 to include negative numbers
	2	Investigating integers in context	 interpret integers in everyday contexts, eg temperature count forwards and backwards with positive and negative whole numbers, including through 0 (in context)



Understanding Practice and Fluency (UPF)

Addition and Subtraction

Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate			
Quest: Addition & Subtraction Y4A2			
Learning Journey	Steps	Content	Detail
Add and subtract 1s, 10s, 100s and 1,000s	1	Adding and subtracting multiples of 1000	 add multiples of 1000 subtract multiples of 1000
Add two 4-digit numbers - no exchange	1	Using a formal written algorithm for addition calculations up to four-digit numbers (no carrying)	 apply algorithms to solve problems without carrying, with the same number of places and with a different number of places use estimation or reverse operation to check the reasonableness of solutions
Add two 4-digit numbers - one exchange	1	Using a formal written algorithm for addition calculations for two 4-digit numbers (with one exchange)	 apply algorithms to solve problems with one exchange, with the same number of places and with a different number of places using models (bar models, place value models, place value grid, bar models) solve problems using models (bar models, place value models, place value grid, bar models)
Add two 4-digit numbers - more than one exchange	1	Using a formal written algorithm for addition calculations up to four- digit numbers (with carrying)	 apply algorithms to solve problems with carrying in 1 or more places, with the same number of places and with a different number of places;- include opportunities for students to write their own algorithms with digits in correct place value positions;-include word problems use estimation or reverse operation to check the reasonableness of solutions
Subtract two 4-digit numbers - no exchange	1	Using a formal written algorithm to record subtraction calculations involving up to four- digit numbers (without decomposing)	 apply algorithms to solve problems without trading (decomposing), with the same number of places for both numbers, with fewer places in the second number (subtrahend) and with and without 1 or more zeros in the first number (minuend);- include opportunities for students to write their own algorithms with digits in correct place value positions and with the larger number first;- include word problems use estimation or reverse operation to check the reasonableness of solutions
Subtract two 4-digit numbers - one exchange	1	Using a formal written algorithm for subtraction calculations for two 4-digit numbers (with one exchange)	 apply algorithms to solve problems with one exchange, with the same number of places and with a different number of places. Use models to support calculation, eg place value model, place value grid, bar model use estimation or reverse operation to check the reasonableness of solutions
Subtract two 4-digit number- more than one exchange	1	Using a formal written algorithm to record subtraction calculations involving up to four- digit numbers (with decomposing)	 apply algorithms to solve problems with trading (decomposing) in 1 or more places, with the same number of places for both numbers, with fewer places in the second number (subtrahend) and with and without 1 or more zeros in the first number (minuend);- include opportunities for students to write their own algorithms with digits in correct place value positions and with the larger number first;- include word problems use estimation or reverse operation to check the reasonableness of solutions

Understanding Practice and Fluency (UPF)

Addition and Subtraction

Estimate and use inverse operations to check answers to a calculation				
		Quest: Addit	ion & Subtraction Y4A2	
Learning Journey	Steps	Content	Detail	
Efficient subtraction	1	Solving word problems using efficient mental subtraction strategies with numbers up to five digits	solve subtraction word problems using mental strategies	
	2	Subtracting a 4-digit number from a 4-digit number using place value partitioning and efficient methods	 subtract a 4-digit number from a 4-digit number using the bar model method subtract a 4-digit number from a 4-digit number using a part- whole model subtract a 4-digit number from a 4-digit number using a number line 	
Estimate answers	1	Estimating additions to the nearest 1000	 round numbers to the nearest multiple of 1000 to estimate additions, eg 3546 + 2789 as 4000 + 3000 (with models) 	
	2	Estimating subtractions to the nearest 1000	• round numbers to the nearest multiple of 1000 to estimate additions, eg 3812 + 1489 as 4000 + 1000 (with models)	
Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.				
Quest: Addition & Subtraction Y4A2				
Checking strategies	1	Checking accuracy of addition and subtraction calculations up to two 4-digit numbers	 use estimation to check the reasonableness of answers to addition and subtraction calculations 	

Mathletics

Mathletics

Understanding Practice and Fluency (UPF)

Measurement – A

Convert between different units of measure [for example, kilometre to metre; hour to minute]							
Quest: Length and perimeter Y4A3							
Learning Journey	Steps	Content	Detail				
Kilometres	1	Converting between kilometres and metres (whole numbers only)	 describe 1 km as 1000 m convert between kilometres and metres using whole numbers record measurement equivalents in a table explain the relationship between the size of a unit and the number of units needed 				
	2	Comparing lengths in metres and kilometres, up to 10 km using inequality symbols (whole numbers only)	 compare lengths in metres and kilometres, up to 10 km using inequality symbols 				
	3	Solving problems involving kilometres, up to 10 km (whole numbers only)	 solve problems using kilometres, eg, Tim and Peter walk 15 km together. Peter walks double the distance that Tim walks. How far does Peter walk? 				
Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres							
Quest: Length and perimeter Y4A3							
Perimeter on a grid	1	Calculating the perimeter of rectilinear shapes on a grid (informal units)	 calculate the perimeter of rectilinear shapes by counting squares on a grid 				
	2	Solving problems involving perimeters on a grid	 solve problems involving perimeter (informal units) eg, which shape has the longest perimeter, create a shape with the longest/shortest perimeter 				
Perimeter of a rectangle	1	Calculating the perimeters of rectangles	 use the term 'dimensions' to describe the 'lengths' and 'widths' of rectangles and squares measure and calculate the perimeter of a large rectangular section of the school recognise that rectangles with the same perimeter may have different dimensions recognise that rectangles with dimensions given in different units may have the same perimeter explore different methods of finding the perimeter of rectangles create a rule to find the perimeter of any rectangle 				
	2	Calculating the side length of a rectangle given the perimeter	 find the length of 1 unknown side of a rectangle given the perimeter find possible length combinations of 2 unknown sides of a rectangle given the perimeter 				
Perimeter of rectilinear shapes	1	Calculating the perimeter of rectilinear shapes using a formula	• calculate the perimeters of rectilinear shapes using a formula				



Understanding Practice and Fluency (UPF)

Multiplication and division – A

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1; dividing by 1; multiplying together three numbers							
Quest: Multiplication and Division Y4A4							
Learning Journey	Steps	Content	Detail				
Multiply by 10	1	Using place value to multiply (x 10)	 model the multiplication of a 1-digit number and a multiple of 10 using place value equipment or models, eg model 4 groups of 30 using tens rods relate to known facts and place value understanding, eg 4 x 3 = 12 so 4 x 3 tens = 12 tens or 120 				
	2	Multiplying by a multiple of 10	 relate to known facts and place value understanding, eg 4 x 3 = 12 so 4 x 3 tens = 12 tens or 120 use skip counting to solve, eg 4 x 30 as 30 + 30 + 30 + 30 multiply by factorising the multiple and represent with drawings or models, eg 4 x 30 as 4 x 3 x 10 				
Multiply by 100	1	Using place value to multiply (x 100)	 model the multiplication of a 1-digit number and a multiple of 100 using place value equipment or models, eg model 4 groups of 300 using hundreds blocks relate to known facts and place value understanding, eg 4 x 3 = 12 so 4 x 3 hundreds = 12 hundreds or 1200 				
	2	Multiplying by a multiple of 100	 relate to known facts and place value understanding, eg 4 x 3 = 12 so 4 x 3 hundreds = 12 hundreds or 1200 use skip counting to solve, eg 4 x 300 as 300 + 300 + 300 + 300 multiply by factorising the multiple and represent with drawings or models, eg 4 x 30 as 4 x 3 x 100 				
Divide by 10	1	Using division facts for 10	 solve and create division problems in context (using multiplication facts for 10), including word problems 				
	2	Dividing a multiple of 10 by 10 where answer is a whole number	 relate to known facts and place value understanding, eg 40 / 10 = 4 so 400 / 10 = 40 				
Divide by 100	1	Dividing a multiple of 100 by 100 where answer is a whole number	 relate to known facts and place value understanding, eg 42 divided by 1 = 42 and 420 divided by 10 = 42, so 4,200 divided by 100 = 42 				
Multiply by 1 and 0	1	Multiplying by 1 or 0	• identify the effect of multiplication by 1 or 0				
Divide by 1 and itself	1	Dividing by 1 using bar models	• identify the effect of division by 1 using bar models				
Recall multiplication and division facts for multiplication tables up to 12 × 12							
Quest: Multiplication and Division Y4A4							
Multiply and divide by 6	1	Exploring multiplication by 6 up to 72	 use concrete materials, models, drawings, number lines/ charts to skip count by 6 from zero;- explore patterns of the multiplication facts for 6 on a number chart relate multiplication by 6 to double multiplication by 3 				
	2	Recalling and using multiplication facts for 6 (up to 72)	 recall the multiplication facts for 6 solve multiplication problems with 6 including word problems 				
	3	Dividing by 6 up to 72	 model and describe the related multiplication and division facts for 6 using models, drawings or manipulatives, eg 6 x 3 = 18 and 18 divided by 3 = 6 relate division to how many (whole) times the divisor goes into the dividend 				

a and derived facts to multiply and divide mentally, including, multiplying by 0 and



Understanding Practice and Fluency (UPF)

Multiplication and division – A

Recall multiplication and division facts for multiplication tables up to 12 × 12						
Quest: Multiplication and Division Y4A4						
Learning Journey	Steps	Content	Detail			
Multiply and divide by 6	4	Recalling and using division facts for 6 up to 72	recall the division facts for 6solve division problems with 6 including word problems			
6 times table and division facts	1	Multiplying and dividing by 6 up to 72	 recall the multiplication facts and related division facts for 6 solve multiplication and division problems with 6, including word problems 			
Multiply and divide by 9	1	Exploring multiplication by 9 up to 108	 use concrete materials, models, drawings, number lines/ charts to skip count by 9 from zero;- explore patterns of the multiplication facts for 9 on a number chart relate multiplication by 9 to multiplication by 10 (multiply by 10 and then subtract the extra group) 			
	2	Recalling and using multiplication facts for 9 (up to 108)	 recall the multiplication facts for 9 solve multiplication problems with 9, including word problems 			
	3	Dividing by 9 up to 108	 model and describe the related multiplication and division facts for 9 using models, drawings or manipulatives, eg 9 x 3 = 27 and 27 divided by 3 = 9 relate division to how many (whole) times the divisor goes into the dividend 			
	4	Recalling and using division facts for 9 up to 108	 recall the division facts for 9 solve division problems with 9, including word problems 			
9 times table and division facts	1	Multiplying and dividing by 9 up to 108	 recall the multiplication facts and related division facts for 9 solve multiplication and division problems with 9, including word problems 			
Multiply and divide by 7	1	Exploring multiplication by 7 up to 84	 use concrete materials, models, drawings, number lines/ charts to skip count by 7 from zero;- explore patterns of the multiplication facts for 7 on a number chart 			
	2	Recalling and using multiplication facts for 7 (up to 84)	 recall the multiplication facts for 7 solve multiplication problems with 7, including word problems 			
	3	Dividing by 7 up to 84	 model and describe the related multiplication and division facts for 7 using models, drawings or manipulatives, eg 7 x 3 = 21 and 21 divided by 3 = 7 relate division to how many (whole) times the divisor goes into the dividend 			
	4	Recalling and using division facts for 7 up to 84	 recall the division facts for 7 solve division problems with 7, including word problems 			
7 times table and division facts	1	Multiplying and dividing by 7 up to 84	 recall the multiplication facts and related division facts for 7 solve multiplication and division problems with 7, including word problems 			


Understanding Practice and Fluency (UPF)

Multiplication and division

Recall multiplication and division facts for multiplication tables up to 12 $ imes$ 12				
Quest: Multiplication and Division Y4Sp1				
Learning Journey	Steps	Content	Detail	
	1	Multiplying by 11 (up to 12x)	recall the multiplication facts for 11	
	2	Dividing by 11	recall the division facts for 11solve division problems with 11, including word problems	
	3	Multiplying by 12 (up to 12x)	recall the multiplication facts for 12	
11 and 12 times tables	4	Dividing by 12	recall the division facts for 12solve division problems with 12, including word problems	
	5	Multiplying and dividing by 11	 recall the multiplication facts and related division facts for 11 solve multiplication and division problems with 11, including word problems recall the multiplication facts and related division facts for 12 solve multiplication and division problems with 12, including word problems 	
Multiply 3 numbers	1	Multiplying 3 or more single-digit numbers using the commutative and associative laws	 apply the commutative law of multiplication explore and apply the associative law of multiplication, eg, 2 x 3 x 5 = 2 x 5 x 3 = 10 x 3 = 30 	
	Reco	ognise and use factor pairs	and commutativity in mental calculations	
		Quest: Multipl	ication and Division Y4Sp1	
Factor pairs	1	Finding factors for whole numbers up to 100	 determine all 'factors' of a given whole number up to 100 determine the 'highest common factor' (HCF) of 2 whole numbers determine whether a particular number is a factor of a given number using digital technologies recognise that when a given number is divided by 1 of its factors, the result must be a whole number 	
Efficient multiplication	1	Selecting efficient strategies to solve multiplication problems	 select and use a variety of mental and informal written strategies to solve multiplication problems apply the inverse relationship of multiplication and division to justify answers check the answer to a word problem using digital technologies record mental strategies accurately 	
Written methods	1	Multiplying a 2-digit number by a 1-digit number using an area model	 use area model to solve multiplication problems explain and justify the use of the strategy 	

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Understanding Practice and Fluency (UPF)

Multiplication and division

Multiply two-digit and three-digit numbers by a one-digit number using formal written layout					
Quest: Multiplication and Division Y4Sp1					
Learning Journey	Steps	Content	Detail		
Multiply 2-digits by 1-digit	1	Multiplying 2-digit numbers by 1-digit numbers using the contracted algorithm	 multiply the ones, then the tens, with and without regrouping use inverse operations or digital technologies to check solutions 		
Multiply	1	Multiplying 3-digit numbers by 1-digit numbers using an area model	 use an area model for 3-digit by 1-digit multiplication check answers to mental calculations using digital technologies use inverse operations to justify solutions 		
1-digit	2	Multiplying 3-digit numbers by 1-digit numbers using the contracted algorithm	 multiply the ones, then the tens, then the hundreds, with and without regrouping use inverse operations or digital technologies to check solutions 		
	1	Dividing a 2-digit number by a 1-digit number using the inverse relationship of multiplication and division (no remainders)	• divide a 2-digit number by a 1-digit number using the inverse relationship of multiplication and division, eg $63 \div 9 = 7$ because $7 \times 9 = 63$		
Divide 2-digits by 1-digit - no remainders	2	Dividing a 2-digit number by a 1-digit divisor using the contracted algorithm, no remainders or zeros in answers	 apply the written algorithm to divide a 2-digit number by a 1-digit number, without remainders and without zeros in the answer 		
	3	Solving problems involving division of a 2-digit number by a one-digit number, with no remainders	 recognise and use different notations to indicate division use the term 'quotient' to describe the result of a division calculation check answers to mental calculations using digital technologies use inverse operations to justify solutions to problems use estimation to check the reasonableness of answers to division calculations 		
Divide 2-digits by 1-digit - with remainders	1	Dividing a 2-digit number by a 1-digit divisor using the contracted algorithm, with remainders but without zeros in answers	 apply the written algorithm to divide a 2-digit number by a 1-digit number, with remainders but without zeros in the answer 		
	2	Dividing a 2-digit number by a 1-digit divisor using the contracted algorithm, with and without remainders and zeros in answers	 apply the written algorithm to divide a 2-digit number by a 1-digit number, with and without remainders and zeros in the answer 		
Divide 3-digits	1	Dividing a 3-digit number by a 1-digit number using partitioning and using models for support	• partition a 3-digit number to divide using models for support		
by 1-digit	2	Dividing a 3-digit number by a 1-digit number using partitioning	• partition a 3-digit number to divide		



Understanding Practice and Fluency (UPF)

Multiplication and division

Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Quest: Multiplication and Division Y4Sp1			
Learning Journey	Steps	Content	Detail
Correspondence problems	1	Solving two-step multiplication and/or division word problems, including correspondence problems	 solve two-step word problems in context involving multiplication and division;- choose the appropriate operation
	2	Solving multi-step multiplication and/or division word problems	solve multi-step word problems involving multiplication and divisionrepresent unknown with a letter

Understanding Practice and Fluency (UPF)

Measurement

Find the area of rectilinear shapes by counting squares				
Quest: Area Y4Sp2				
Learning Journey	Steps	Content	Detail	
What is area?	1	Exploring the attribute of area	 define area as an attribute identify areas in the environment describe areas using everyday language, such as 'surface', 'inside', 'outside' understand that the area remains the same if a given area is divided up and rearranged into a new configuration (conservation) 	
	2	Comparing areas using direct comparison	 compare areas by positioning one area over another area compare areas by tracing one area and placing it over the top another area describe one area as larger than, the same as (about the same as), or smaller than another area 	
Counting squares	1	Measuring area using informal units	 compare use of non-uniform units with uniform units to measure area tile units to completely cover an area consider effect of gaps and overlaps when measuring area recognise iteration and structure in arrangement of uniform informal units to measure the area identify features that determine whether chosen units will be good units to measure area;- ie units must be the same size, units need to tile without gaps or overlaps estimate areas in uniform informal units 	
	2	Measuring and estimating areas of rectangles using a square unit	 establish usefulness of using a square unit to find an area as it allows for an array structure and does not have gaps or overlaps compare the same area measured using different sized square unit understand that the larger the unit square, the smaller the number of units needed and likewise the smaller the square unit, the larger the number of units needed 	
	3	Estimating and measuring areas of rectangles using efficient strategies and counting in square centimetres or metres	 measure the area of rectangles (including squares) using square centimetres and/or square metres (both tiling and using grid overlay) using whole number side lengths only estimate areas of rectangles (including squares) in square centimetres and/or square metres and then check by measuring develop efficient strategies for counting square centimetres/metres when measuring areas of rectangles draw possible rectangles on a grid to represent a given whole number rectangular area 	
	4	Developing an additive formula for area of a rectangle	 connect arrays with side lengths through repeated addition leading to multiplication 	

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Understanding Practice and Fluency (UPF)

Measurement

Find the area of rectilinear shapes by counting squares			
Quest: Area Y4Sp2			
Learning Journey	Steps	Content	Detail
Making shapes	1	Measuring and estimating areas of rectilinear shapes using a square unit	 establish usefulness of using a square unit to find an area as it allows for an array structure and does not have gaps or overlaps compare the same area measured using different sized square unit understand that the larger the unit square, the smaller the number of units needed and likewise the smaller the square unit, the larger the number of units needed
Comparing area	1	Comparing and ordering areas using uniform informal units (indirect comparison)	 compare two areas by measuring using uniform informal units order three or more areas by measuring using uniform informal units make statements of comparison about the relative size of three areas, eg if A is larger than B and B is larger than C, then A is larger than C

Mathletics



Understanding Practice and Fluency (UPF)

Recognise and show, using diagrams, families of common equivalent fractions				
	Quest: Fractions Y4Sp3			
Learning Journey	Steps	Content	Detail	
	1	Matching fractions in different representations	 match fractions using different representations, eg, written, model, fraction symbol, number line, multilink, Numicon 	
What is a fraction?	2	Identifying and representing simple fractions of an object or shape (denominators 1-12)	 find any fraction, eg 5 squares shaded out of 12 is 5/12 recognise larger denominator = smaller parts recognise that objects and shapes can be partitioned in various ways eg recognise that shading 5 squares out of 12 can be done in many ways explore equivalences 	
	3	Expressing whole numbers as fractions	express whole numbers as fractions	
Equivalent	1	Investigating simple equivalent fractions less than 1 using concrete materials and/or models (denominators 2, 3, 4, 5, 6, 8, 10)	 use models such as number lines, bar models to identify equivalent fractions use concrete materials or models to show equivalent fractions, eg, folding a strip of paper 	
Tractions (T)	2	Finding simple equivalent proper fractions (denominators 2, 3, 4, 5, 6, 8, 10)	 recognise and show, using diagrams simple equivalent fractions with small denominators — eg 4/8 and 1/2 	
Equivalent fractions (2)	1	Investigating equivalent fractions up to and including 1 whole using area models (denominators 2, 4 and 8; 3 and 6; 5 and 10 and 100)	 model, compare and represent the equivalence of fractions with related denominators by redividing the whole, using identical area models fraction walls and bar models 	
Fractions greater than 1	1	Introducing mixed numbers for fractions with denominators 2, 3, 4, 5, 6, 8	 use mixed numbers to describe models of fractions between 1 and 3; identify the wholes and fractional parts (no conversion from improper to proper fractions) identify and describe 'mixed numbers' as having a whole- number part and a fraction part 	
Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10				
Quest: Fractions Y4Sp3				
	1	Counting with halves and quarters and eighths on a number line up to 3	 count in proper and improper fractions on a number line identify equivalence to 1: 2/2 = 1, 4/4 = 1, 8/8 = 1 	
Count in fractions	2	Counting in fractions on a number line (denominators up to 12)	 count in proper and improper fractions (starting on any fraction) using number lines and models, eg, 7/8, 8/8, 9/8, 10/8 create sequences of fractions following the pattern provided 	

Understanding Practice and Fluency (UPF)

Fractions, decimals and percentages

Add and subtract fractions with the same denominator			
Quest: Fractions Y4Sp3			
Learning Journey	Steps	Content	Detail
	1	Using models to add unit fractions with the same denominators (1-20) to make fractions up to and including 1 whole	 use models to add unit fractions with the same denominator to make fractions up to and including one whole, eg 1/3 + 1/3 + 1/3
Add 2 or more fractions	2	Adding simple fractions with the same denominator using models to make fractions up to and including 1 whole	 use models to add 2 or more fractions with the same denominator (up to and including one whole) solve problems involving adding fractions with the same denominator
	3	Adding simple fractions with the same denominator using models (up to 3 wholes)	 use models to add 2 or more fractions with the same denominator solve problems involving adding fractions with the same denominator record answers greater than 1 as an improper fraction
Subtract 2 fractions	1	Subtracting proper fractions with the same denominator (denominators 2, 3, 4, 5, 6, 7, 8)	 subtract proper fractions with the same denominator model and represent strategies, including using diagrams and written representations
Subtract from whole amounts	1	Subtracting simple fractions with the same denominator using models (up to 3 wholes)	 use models to subtract 2 or more fractions with the same denominator solve problems involving adding fractions with the same denominator record answers greater than 1 as an improper fraction
Solve probler q	ns invol uantitie	ving increasingly harder frac s, including non-unit fractio	ctions to calculate quantities, and fractions to divide ns where the answer is a whole number
		Quest: Fra	ctions Y4Sp3
Calculate fractions of a quantity	1	Finding a unit fraction of a quantity using multiplication and division facts (denominators 2-10 and multiples of the denominators only)	 find a unit fraction of a quantity/collection using multiplication and division facts (denominators 2-10 and multiples of the denominators only)
	2	Finding a simple fraction of a quantity	 calculate a simple fraction of a collection/quantity explain how unit fractions can be used in the calculation of simple fractions of collections/quantities, eg 'To calculate 3/8 of a quantity, I found 1/8 of the collection first and then multiplied by 3'
Problem solving - calculate quantities	1	Solving problems using bar models and tables to calculate the whole (including unit and non-unit proper fractions)	 calculate the whole through counting the quantity of parts (using bar models), eg, 1/4 = 5, 2/4 =10, 3/4 = 15, 4/4 or 1 whole = 20 calculate the whole through completing a table of whole, unit fraction and non-unit fraction, eg, the whole is 24, 1/6 of 24 = 4, 5/6 of 24 = 20
	2	Solving word problems using proper fractions including unit and non-unit fractions (denominator less than 10)	 solve word problems using proper fractions including unit and non-unit fractions (denominator less than 10)

Mathletics

Mathletics

Understanding Practice and Fluency (UPF)

Recognise and write decimal equivalents of any number of tenths or hundredths					
Quest: Decimals Y4Sp4					
Learning Journey	Steps	Content	Detail		
Recognise tenths and hundredths	1	Introducing hundredths	 recognise that hundredths come from 100 equal parts find hundredths of objects, sets and shapes find the whole from the part use language 'one hundredth', 'two hundredths' etc use symbols to represent fractions 1/100, 2/100 etc recognise that hundredths come from dividing 1-digit numbers or quantities by 100 		
	2	Counting in hundredths	 count up in hundredths using proper fractions and mixed numerals (starting from any multiple of tenths), including on a number line count down in hundredths using proper fractions and mixed numerals (starting from any multiple of tenths), including on a number line represent counting in hundredths using number lines and models 		
	3	Reading and writing tenths and hundredths	 read, write and represent tenths and hundredths in words, symbols and models, eg show 5 hundredths on a hundreds chart 		
	4	Connecting tenths and hundredths	 recognise that hundredths are tenths divided into 10 equal parts and that 10/100 is equal to 1/10 model and represent hundredths and tenths, eg 4/10 and 3/100 on a hundreds chart 		
Rec	Recognise and write decimal equivalents of any number of tenths or hundredths				
		Quest: De	cimals Y4Sp4		
Tenths as decimals	1	Counting in decimal tenths	• count forwards and backwards by tenths from any decimal number expressed to 1 decimal place, using concrete materials and number lines, eg use base ten materials to represent 3.7 and count forward: 3.8, 3.9, 4.0, 4.1,		
	2	Connecting decimal fractions to common fractions involving tenths	 understand the relationship between decimal fractions and common fractions involving tenths recognise and apply decimal notation to express whole numbers and tenths as decimals, eg 0.1 is the same as 1/10 investigate equivalences using various methods, eg use a number line or a calculator to show that 1/2 is the same as 0.5 and 5/10 		
Tenths on a place value grid	1	Reading and representing tenths on a place value grid	• read and represent tenths on a place value grid		
Tenths on a number line	1	Counting in tenths	 count up in tenths using proper fractions and mixed numbers (starting from any multiple of tenths), including on a number line count down in tenths using proper fractions and mixed numbers (starting from any multiple of tenths), including on a number line represent counting in tenths using number lines and models 		



Understanding Practice and Fluency (UPF)

Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths			
		Quest: Dec	cimals Y4Sp4
Learning Journey	Steps	Content	Detail
Divide 1-digit by 10	1	Dividing 1-digit numbers by 10 (decimal answers)	 divide 1-digit numbers by 10 and demonstrate that the answer is 10 times smaller by using place value models (Gattegno chart and place value model) eg, 7 ÷ 10 = 0.7
Divide 2-digit by 10	1	Dividing 2-digit numbers by 10 (decimal answers)	 divide 2-digit numbers by 10 and demonstrate that the answer is 10 times smaller by using place value models (Gattegno chart and place value model) eg, 72 ÷ 10 = 7.2
Hundredths	1	Counting in hundredths as fractions	 count up in hundredths using proper fractions (starting from any multiple of hundredth), including on a number line count down in hundredths using proper fractions (starting from any multiple of hundredth), including on a number line
Rec	cognise	and write decimal equivaler	nts of any number of tenths or hundredths
		Quest: Dec	cimals Y4Sp4
Hundredths as decimals	1	Connecting decimal fractions to common fractions involving hundredths	 understand the relationship between decimal fractions and common fractions involving hundredths recognise and apply decimal notation to express whole numbers and hundredths as decimals, eg 0.15 is the same as 15/100
Hundredths on a place value grid	1	Introducing decimal hundredths	 recognise that the place value system can be extended to tenths and hundredths recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10 state the place value of digits in decimal numbers of up to 2 decimal places read decimal fractions correctly, ie 'six point one nine' rather than 'six point nineteen'
Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths			
		Quest: Dec	cimals Y4Sp4
Divide 1 or 2-digits by 100	1	Dividing 1- or 2- digit numbers by 100 using models	 use models to divide whole numbers by 100, eg, 7,000 ÷ 100, 700 ÷ 100, 70 ÷ 100, 7 ÷ 100 (place value tables and number sentences)



Understanding Practice and Fluency (UPF)

Recognise and write decimal equivalents to 1/4, 1/2, 3/4				
	Quest: Decimals Y4Su1			
Learning Journey	Steps	Content	Detail	
	1	Making a whole from any number of tenths and hundredths up to 1 whole (using models)	 make a whole from any number of tenths using models, eg hundred square, 100-bead rekenrek, part-whole models make a whole from any number of hundredths using models, eg hundred square, 100-bead rekenrek, part-whole models 	
Make a whole	2	Making a whole from any number of tenths and hundredths up to 5 wholes (using models)	 make a whole from any number of tenths using models, eg hundred square, 100-bead rekenrek, part-whole models make a whole from any number of hundredths using models, eg hundred square, 100-bead rekenrek, part-whole models make a whole from any number of tenths and hundredths using models, eg hundred square, 100-bead rekenrek, part-whole models 	
Write decimals	1	Modelling and representing decimal fractions up to 2 decimal places	 model decimal fractions using concrete materials represent decimal fractions, eg as fractions (tenths and hundredths), on number lines, using hundreds grids, in place value models and charts 	
	2	Partitioning decimal hundredths more than 1 (using models)	• partition decimals of up to 2 decimal places using models eg, 5.37 = 5 + 0.37	
Comp	are nun	nbers with the same numbe	r of decimal places up to two decimal places	
		Quest: De	cimals Y4Su1	
Compare and	1	Comparing and ordering decimal tenths	 compare and order tenths using >, < and = 	
order decimals	2	Comparing and ordering decimal hundredths	• compare numbers with the same number of decimal places up to 2 decimal places	
	Roun	d decimals with one decima	al place to the nearest whole number	
		Quest: De	cimals Y4Su1	
Round decimals	1	Rounding decimal tenths	round tenths to the nearest whole number	
Recognise and write decimal equivalents to 1/4, 1/2, 3/4				
		Quest: De	cimals Y4Su1	
Halves and quarters	1	Connecting fraction and decimal equivalences for 1/2, 1/4 and 3/4	 connect fraction and decimal equivalences for 1/2, 1/4 and 3/4 using models, decimal and fraction notation 	

Understanding Practice and Fluency (UPF)

Measurement

Estimate, compare and calculate different measures, including money in pounds and pence				
Quest: Money Y4Su2				
Learning Journey	Steps	Content	Detail	
Pounds and pence	1	Using notes and coins to make amounts United Kingdom	 determine the total amount of money by counting the value of notes of the same denomination combine amounts of notes and coins to make a given amount of money shown in pounds and pence (no decimal point) calculate the total value of a group of notes and coins and record this value in pounds and pence using the correct symbols (no decimal point) generate and recognise different combinations of coins that have the same value (combining coins of the same denominations and different denominations) and record these using the symbol p generate and recognise different combinations of notes that have the same value (combining notes of the same denominations and different denominations) and record these using the symbol p 	
Ordering money	1	Comparing amounts of money using inequality symbols United Kingdom	 compare amounts of money using inequality symbols, eg 6,209p > £60.09 	
	2	Ordering amounts of money (up to four items) United Kingdom	 order amounts of money in ascending or descending sequence, represented in the same format, eg 4,234p and 4,142p or £42.34 and £41.42 	
Estimating money	1	Rounding and estimating amounts of money to the nearest pound using decimal notation United Kingdom	 round one amount of money to the nearest pound using a number line round and estimate the total of two amounts of money to the nearest pound using a number line 	
Four operations	1	Solving simple word problems involving money (pounds and pence) United Kingdom	 solve word problems using coins, eg would you rather have five 50p coins or twelve 20p coins? 	
		Using money to make purchases	 calculate the total cost of purchasing two items given their values and record the value in pounds and pence separately (no decimal point) determine the exact notes and coins needed to purchase two items given their values 	
		Using money: Addition and subtraction problems	 use addition and subtraction to solve a variety of problems involving purchases of two or more items, including calculating change, and record the value using a decimal point and the symbol £ use estimation to check the reasonableness of solutions to problems involving purchases and calculation of change 	
		Using money: Multiplication and division problems United Kingdom	 use multiplication and division to solve a variety of problems involving money and record the value using a decimal point and the symbol £ use estimation to check the reasonableness of solutions to problems involving purchases and calculation of change 	

Mathletics

Mathletics

Understanding Practice and Fluency (UPF)

Measurement

Estimate, compare and calculate different measures, including money in pounds and pence						
	Quest: Money Y4Su2					
Learning Journey	Steps	Content	Detail			
	2	Using money to make purchases United Kingdom	 calculate the total cost of purchasing two items given their values and record the value in pounds and pence separately (no decimal point) determine the exact notes and coins needed to purchase two items given their values 			
Four operations	3	Using money: Addition and subtraction problems I United Kingdom	 use addition and subtraction to solve a variety of problems involving purchases of 2 or more items, including calculating change, and record the value using a decimal point and the symbol £ use estimation to check the reasonableness of solutions to problems involving purchases and calculation of change 			
Convert b	etween	different units of measur	e [for example, kilometre to metre; hour to minute]			
	·	Ques	t: Time Y4Su3			
Units of time Solve problems	1 2	Recalling relationships between units of time Converting between units of time (multiplicative conversions only) g converting from hours t	 know and recall that 1 hour = 60 minutes, 1 minute = 60 seconds know and recall that 1 day = 24 hours know and recall that 1 year = 365 days and that 1 leap year = 366 days and relate this to the rotation of the earth know and recall that 1 week = 7 days, 1 fortnight = 2 weeks solve problems relate to the relationship between units of time calculate the number of seconds in a whole number of minutes calculate the number of days in a whole number of weeks calculate the number of months in a whole number of years solve problems involving conversion between units of time 			
		Solving problems relating	, use the 4 operations to solve word problems involving			
Solving time problems	3	to elapsed time involving the four operations (to five minutes)	fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit			
Rea	Read, write and convert time between analogue and digital 12- and 24-hour clocks					
		Ques	t: Time Y4Su3			
Analogue to digital - 12 hour	1	Telling time to five minutes (digital)	 read time on 12-hour digital clocks to 5 minutes using the terms 'o'clock', 'past' and 'to', including 'half past', 'quarter past' and 'quarter to' record times on analogue clocks to 5 minutes in 12-hour digital format position or draw the hands on an analogue clock to show time to 5 minutes where the time is given in 12-hour digital format connect 12-hour digital displays for times to 5 minutes to their corresponding display on an analogue clock 			

Mathletics

Understanding Practice and Fluency (UPF)

Measurement

Read, write and convert time between analogue and digital 12- and 24-hour clocks				
		Ques	t: Time Y4Su3	
Learning Journey	Steps	Content	Detail	
Analogue to digital - 12 hour	2	Telling time to the minute (digital)	 read time on 12-hour digital clocks to the minute using the terms 'o'clock', 'past' and 'to', including 'half-past', 'quarter past' and 'quarter to' and write in words record times on analogue clocks to the minute in 12-hour digital format position or draw the hands on an analogue clock to show time to the minute where the time is given in 12-hour digital format connect 12-hour digital displays for times, to the minute, to their corresponding display on an analogue clock 	
Analogue to digital - 24 hour	1	Using 24-hour notation	 recognise 24-hour time notation as an alternative to 12-hour time notation describe familiar situations in which 24-hour time is used such as transport timetables, armed forces, on household appliances identify whether a time expressed in 24-hour time notation represents a time before or after midday/noon convert between 24-hour time notation and 12-hour time notation convert between analogue and 24-hour digital clocks record 24-hour time using necessary conventions read and write time on 24-hour digital clocks to the minute using the terms o'clock, past and to, including half-past, quarter past, and quarter to 	

Mathletics

Understanding Practice and Fluency (UPF)

Statistics

Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs			
		Ques	st: Statistics Y4Su4
Learning Journey	Steps	Content	Detail
Interpret charts - tables	1	Representing and reading category data in a table	 represent primary or secondary data in a given table using appropriate headings and layout interpret data in a table;- ask and answer summative and comparative questions
	2	Collecting and recording category data in tables	 create a list of categories for efficient data collection and present in a table format, eg 'Which sport is the most popular with members of our class?' sort data from a simple survey and create a list or table to organise the data, eg sort data on the number of children in a class. determine which data should be collected and presented in the table
	3	Constructing and interpreting tables	 represent given or collected categorical data in tables using appropriate headings and structure interpret data in tables to solve problems;- answer comparative and summative questions
Interpret charts - pictograms	1	Reading data in a pictogram with a scale of 1, 2, 5, or 10	 ask and answer one step and two step questions, eg, 'how many more students like reading than art?' make conclusions about data presented in a bar chart, eg, 'Football is the most popular sport for students in Year 3 at our school' compare bar charts with pictograms evaluate simple statements made by others relating to data in a pictogram
	2	Representing data in a pictogram with a scale of 1, 2, 5 or 10	 construct vertical and horizontal pictograms with equal spacing choose an appropriate title and label the axis choose an appropriate picture or symbol for a pictogram and state the key used (1, 2, 5 or 10) solve comparison, sum and difference (one-step and two-step problems) problems related to the data display; make conclusions
	1	Reading data in a bar chart with a scale of 1, 2, 5 or 10	 ask and answer one-step and two-step questions, eg, 'How many more students like reading than art?' make conclusions about data presented in a bar chart, eg, 'Football is the most popular sport for students in Year 3 at our school' compare bar charts with pictograms evaluate simple statements made by others relating to data in a bar chart
Interpret charts - bar charts	2	Representing data in a bar chart with a scale of 1, 2, 5 or 10	 construct a vertical or horizontal bar chart using grid paper for support, where appropriate use a scale of eg, 2, 5, or 10 to 1 use graphing software to enter data and create bar charts that represent data mark equal spaces on axes, name and label axes, and choose appropriate titles for bar charts; use the terms 'horizontal axis', 'vertical axis' and 'axes' appropriately ask and answer one-step and two-step questions, eg, 'How many more students like reading than art?'; make conclusions about data presented in a bar chart, eg, 'Football is the most popular sport for students in Year 3 at our school'



Understanding Practice and Fluency (UPF)

Statistics

Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs			
		Ques	t: Statistics Y4Su4
Learning Journey	Steps	Content	Detail
Solving problems using charts	1	Solving problems using bar charts, pictograms, tables	 solve comparison, addition and subtraction problems using a range of data displays
Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.			
Quest: Statistics Y4Su4			
Comparison, sum & difference	1	Solving problems using bar charts, pictograms, tables	 solve comparison, addition and subtraction problems using a range of data displays
		Comparing basic data displays (tables, lists, pictograms, bar charts)	 represent the same data set using more than one type of display (tables, lists, pictograms or bar charts) and compare the displays discuss the advantages and/or disadvantages of different representations of the same data describe information and make conclusions about data presented in different data displays, eg, 'Football is the most popular sport for students in Year 3 at our school'
Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs			
		Ques	t: Statistics Y4Su4
Line graphs	1	Introducing and reading line graphs	 become familiar with the structure of a line graph read and interpret a basic line graph displaying time series data



Understanding Practice and Fluency (UPF)

Geometry - Properties of shape

Identify acute and obtuse angles and compare and order angles up to two right angles by size				
	Quest: Properties of shape Y4Su5			
Learning Journey	Steps	Content	Detail	
Identify angles	1	Classifying angles as acute, right or obtuse	 identify and name angles as acute, right or obtuse categorise angles as acute, right or obtuse draw and create angles of a given size: acute, right, obtuse (no protractors) 	
Compare and order angles	1	Comparing and ordering angles in a shape using statements and inequality symbols	 compare and order angles using statements and inequality symbols, eg Angle A is [<, > or =] Angle B 	
Compare and c	lassify g	jeometric shapes, inclu	uding quadrilaterals and triangles, based on their properties and sizes	
		Quest: Pro	operties of shape Y4Su5	
Triangles	1	Classifying triangles by their sides and angles	 identify and name right-angled, equilateral, isosceles and scalene triangles compare and describe features of the sides and angles of equilateral, isosceles and scalene triangles identify triangles that are right-angled as well as scalene or isosceles explore, by measurement, side and angle properties of equilateral, isosceles and scalene triangles 	
	1	Identifying side length properties of quadrilaterals	 measure and describe the side properties of the special quadrilaterals, including parallelograms, rectangles, rhombuses, squares, trapeziums and kites identify and sort quadrilaterals by their side lengths and number of parallel sides 	
	2	Identifying right angles in quadrilaterals	identify right angles in quadrilateralssort quadrilaterals by those with and without right angles	
Quadrilaterals	3	Sorting and naming quadrilaterals	 sort the special quadrilaterals; explain the attribute used to sort, eg, angle, parallel sides, side lengths; classify quadrilaterals into categories and subcategories identify and name the special quadrilaterals in different orientations, including parallelograms, rectangles, rhombuses, squares, trapezia and kites explore and explain the given names of the quadrilaterals, eg, parallelogram 	
	dentify	lines of symmetry in 2	-D shapes presented in different orientations	
		Quest: Pro	operties of shape Y4Su5	
Lines of symmetry	1	Recognising line symmetry of shapes	 define the line of symmetry of a 2D shape as a line across which the shape can be folded into 2 matching parts identify a line of symmetry in 2D shapes sort 2D shapes according to whether they are symmetrical or not 	

Mathletics

Understanding Practice and Fluency (UPF)

Geometry - Properties of shape

Complete a simple symmetric figure with respect to a specific line of symmetry.			
Quest: Properties of shape Y4Su5			
Learning Journey	Steps	Content	Detail
Symmetric figures	1	Drawing lines of symmetry on given designs and shapes	 recognise that some designs and shapes may have more than 1 line of symmetry identify and draw all lines of symmetry on designs and shapes determine the total number of lines of symmetry on designs and shapes determine whether or not a given line through designs and shapes is a line of symmetry
	2	Completing symmetrical designs	 complete symmetrical designs and shapes given their line of symmetry and one half of the design or shape

Geometry - Position and direction

Describe positions on a 2-D grid as coordinates in the first quadrant			
		Quest: Pos	sition & direction Y4Su6
Learning Journey	Steps	Content	Detail
Describe position	1	Recording the position of points on a coordinate plane using x and y coordinates	 record the position of points on a Cartesian plane using x and y coordinates
	2	Plotting points in the Cartesian coordinate system in the first quadrant only	• plot points on a Cartesian plane using x and y coordinates
	Plo	t specified points and	draw sides to complete a given polygon
		Quest: Pos	sition & direction Y4Su6
Draw on a grid	1	Finding the missing coordinate of a figure in the first quadrant only	 find the missing coordinate of a figure with a Cartesian plane (first quadrant only)
	2	Plotting points from coordinates to create a shape, first quadrant only	 plot a sequence of coordinates to create a shape in the first quadrant
Move on a grid	1	Translating points on the Cartesian plane in the first quadrant only	 follow two-step instructions to translate points or shapes on a Cartesian plane eg, 1 up 2 right follow three step instructions to translate points or shapes on a Cartesian plane eg, 1 up 2 right, 1 up



Understanding Practice and Fluency (UPF)

Geometry - Position and direction

Describe movements between positions as translations of a given unit to the left/right and up/down			
Quest: Position & direction Y4Su6			
Learning Journey	Steps	Content	Detail
Describe movement on a grid	1	Describing the translation and movement of points and shapes on the Cartesian plane	 describe the translation and movement of a point or shape on the Cartesian plane using specific language such as: left/right/up/ down



Understanding Practice and Fluency (UPF)

Number and place value

Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit				
Quest: Place Value Y5A1				
Learning Journey	Steps	Content	Detail	
Numbers to 10,000	1	Reading and writing numbers up to 5 digits	 apply an understanding of place value to read numbers up to 5 digits apply an understanding of place value to write numbers up to 5 digits 	
	2	Identifying the place value of digits in numbers up to 5 digits	 state the place value of digits in numbers of up to 5 digits pose and answer questions that extend place value understanding of numbers, eg, 'What happens if I rearrange the digits in the number 12,345?', 'How can I rearrange the digits to make the largest number?' represent and describe whole numbers to 10,000 pictorially and symbolically 	
	3	Using place value to partition 6-digit numbers	 use place value to partition numbers of up to 6 digits, eg, 672,012 is 600,000 + 70,000 + 2,000 + 10 + 2 	
	4	Using non-standard partitioning with 6-digit numbers	• partition numbers of up to 6 digits in non-standard forms, eg, 670,000 as 500,000 + 170,000	
Compare and	1	Comparing 5-digit numbers using words and symbols	- compare two 5-digit numbers using words and symbols <, =, >	
100,000	2	Ordering 5-digit numbers	• arrange numbers up to 5 digits in ascending and descending order	
Roun	d any n	umber up to 1,000,000) to the nearest 10, 100, 1000, 10,000 and 100,000	
		Ques	t: Place Value Y5A1	
Round numbers within 100,000	1	Rounding 5-digit numbers	• round to the nearest 10, 100, 1,000 or 10,000	
Read, write, o	order an	d compare numbers to	o at least 1,000,000 and determine the value of each digit	
		Ques	t: Place Value Y5A1	
Numbers to a million	1	Reading and writing numbers of any size	 apply an understanding of place value to read numbers of any size apply an understanding of place value to write numbers of any size 	
	2	Identifying the place value of numbers of any size	 state the place value of digits in numbers of any size pose and answer questions that extend place value understanding of numbers, eg, 'What happens if I rearrange the digits in the number 2,312,345?', 'How can I rearrange the digits to make the largest number?' recognise different abbreviations of numbers used in everyday contexts, eg, £35 M represents £35,000,000 understand the role of zero as a placeholder use place value understanding to count by 10,000 and 100,000 	
	3	Using place value to partition numbers of any size	 use place value understanding and models to partition numbers of any size 	



Understanding Practice and Fluency (UPF)

Number and place value

Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit			
		Ques	t: Place Value Y5A1
Learning Journey	Steps	Content	Detail
	4	Using non-standard partitioning with numbers of any size	• partition numbers of any size in non-standard forms
million	5	Using numbers of any size	 use numbers of any size in real-life situations, including in money problems interpret information from the internet, the media, the environment and other sources that use large numbers
Count fo	rwards	or backwards in steps o	of powers of 10 for any given number up to 1,000,000
		Ques	t: Place Value Y5A1
Counting in powers of 10	1	Understanding the role of place value when increasing or decreasing a digit in a number	 find numbers 1, 10, 100, 1000, 10,000, 10,000 before or after a given number by applying place value knowledge count in steps of powers of 10
Read, write, c	order an	d compare numbers to	o at least 1,000,000 and determine the value of each digit
		Ques	t: Place Value Y5A1
	1	Comparing two 6-digit numbers	- compare two 6-digit numbers using words and symbols <, =, >
Compare and	2	Ordering 6-digit numbers	• arrange numbers up to 6 digits in ascending and descending order
one million	3	Comparing 2 numbers of any size	- compare 2 numbers of any size using words and symbols <, =, >
	4	Ordering numbers of any size	• arrange numbers of any size in ascending and descending order
Roun	d any n	umber up to 1,000,000) to the nearest 10, 100, 1000, 10,000 and 100,000
		Ques	t: Place Value Y5A1
Round numbers to one million	1	Rounding 6-digit numbers	• round 6-digit numbers to any place value
Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0			
		Ques	t: Place Value Y5A1
Negative numbers in context	1	Interpreting negative integers in context	 interpret negative integers in context eg, difference in temperature, or when finding the difference between two numbers, or halfway point
s	olve nu	mber problems and pr	ractical problems that involve all of the above



Understanding Practice and Fluency (UPF)

Number and place value

Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.			
Quest: Place Value Y5A1			
Learning Journey	Steps	Content	Detail
Roman numerals to 1,000	1	Reading and writing Roman numerals to 1,000 (M)	 read and write Roman numerals to 1,000 (M) recognise years written in Roman numerals
	2	Adding and subtracting 1s and 10s using Roman numerals to 1,000 (M)	• add and subtract 1s and 10s using Roman numerals to 1,000 (M)



Understanding Practice and Fluency (UPF)

Addition and Subtraction

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)			
Quest: Addition and Subtraction Y5A2			
Learning Journey	Steps	Content	Detail
Add whole numbers with more than 4 digits	1	Using a formal written algorithm for addition calculations up to five-digit numbers (no carrying)	 apply algorithms to solve problems without carrying, with the same number of places and with a different number of places;-include opportunities for students to write their own algorithms with digits in correct place value positions;- include word problems use estimation or reverse operation to check the reasonableness of solutions
	2	Using a formal written algorithm for addition calculations up to five- digit numbers (with carrying)	 apply algorithms to solve problems with carrying in 1 or more places, with the same number of places and with a different number of places;- include opportunities for students to write their own algorithms with digits in correct place value positions;- include word problems use estimation or reverse operation to check the reasonableness of solutions
Subtract whole numbers with more than 4 digits	1	Using a formal written algorithm to record subtraction calculations involving up to five-digit numbers (without decomposing)	 apply algorithms to solve problems without trading (decomposing), with the same number of places for both numbers, with fewer places in the second number (subtrahend) and with and without 1 or more zeros in the first number (minuend);- include opportunities for students to write their own algorithms with digits in correct place value positions and with the larger number first;- include word problems use estimation or reverse operation to check the reasonableness of solutions
	2	Using a formal written algorithm to record subtraction calculations involving up to five-digit numbers (with decomposing)	 apply algorithms to solve problems with trading (decomposing) in 1 or more places, with the same number of places for both numbers, with fewer places in the second number (subtrahend) and with and without 1 or more zeros in the first number (minuend);- include opportunities for students to write their own algorithms with digits in correct place value positions and with the larger number first;- include word problems use estimation or reverse operation to check the reasonableness of solutions
	Add a	and subtract numbers	mentally with increasingly large numbers
Use rounding	g to che	ck answers to calculati	ions and determine, in the context of a problem, levels of accuracy
		Quest: Addit	ion and Subtraction Y5A2
Round to estimate and approximate	1	Rounding 4 and 5-digit numbers to the nearest 10, 100 or 1,000 to estimate sums	 round 4- and 5-digit numbers to the nearest 10, 100 or 1,000 to estimate sums
	2	Rounding 4 and 5-digit numbers to the nearest 10, 100 or 1,000 to estimate differences	 round 4 and 5-digit numbers to the nearest 10, 100 or 1,000 to estimate differences using models eg, number lines



Understanding Practice and Fluency (UPF)

Addition and Subtraction

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why			
		Quest: Addit	ion and Subtraction Y5A2
Learning Journey	Steps	Content	Detail
Inverse operations (addition and subtraction)	1	Checking accuracy of addition and subtraction calculations	 check solutions to problems by using the inverse operation round numbers appropriately when obtaining estimates to numerical calculations use estimation to check the reasonableness of answers to addition and subtraction calculations
	2	Checking accuracy of addition and subtraction calculations with 4-digit and 5-digit numbers	 check solutions to problems by using the inverse operation round numbers appropriately when obtaining estimates to numerical calculations use estimation to check the reasonableness of answers to addition and subtraction calculations
Multi-step addition and subtraction problems	1	Solving addition and subtraction two-step problems in context (max sum 1,000)	 read and interpret a word problem decide which operations and strategies to use and explain why solve an addition and subtraction two-step problem
	2	Solving addition and subtraction two-step problems in context (max sum 10,000)	 read and interpret a word problem decide with operations and strategies to use and explain why solve an addition and subtraction two-step problem



Understanding Practice and Fluency (UPF)

Statistics

Solve comparison, sum and difference problems using information presented in a line graph				
Quest: Statistics Y5A3				
Learning Journey	Steps	Content	Detail	
Read and interpret line graphs	1	Representing and reading data in a given line graph	 complete a line graph using a given data set answer and ask questions relating to data in a line graph including sum, comparison and difference questions 	
Draw line graphs	1	Constructing a line graph using a scale of many-to-one correspondence	 construct a line graph using a scale of many-to-one correspondence, with and without the use of digital technologies name and label the horizontal and vertical axes when constructing graphs choose an appropriate title to describe the data represented in a data display determine an appropriate scale of many-to-one correspondence to represent the data in a data display mark equal spaces on the axes when constructing graphs, and use the scale to label the markers interpret data in line graph representing primary data;- ask and answer questions related to the data in the display;- draw conclusions 	
Use line graphs to solve problems	1	Interpreting primary and secondary data in a line graph	 interpret line graphs using the scales on the axes describe and interpret data presented in line graphs identify and describe relationships that can be observed in data displays 	
	Compl	ete, read and interpret	information in tables including timetables	
		Que	st: Statistics Y5A3	
Read and interpret tables	1	Interpreting data and solving problems using data in tables	 describe and interpret data presented in tables, eg maximum and minimum values;- total number of responses;- differences between values identify and describe relationships;- draw conclusions and ask questions interpret data presented in two-way tables that represent two categorical variables ask and answer comparative and relational questions related to data in a two-way table 	
Two-way tables	1	Representing bivariate data in a two-way table	 create a two-way table to organise data involving 2 categorical variables ask and answer comparative and relational questions related to data in a two-way table 	
Timetables	1	Using timetables (12- hour time)	 use real-world timetables (12-hour time only) to determine arrival time given the desired departure time, including when the exact departure time is not listed exactly in the timetable, ie needing to use an earlier departure time use real-world timetables (12-hour time only) to determine departure time given the desired arrival time, including when the arrival time is not listed exactly in the timetable create timetables using given information 	



Understanding Practice and Fluency (UPF)

Multiplication and division – A

Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers				
Quest: Multiplication and Division Y5A4				
Learning Journey	Steps	Content	Detail	
Multiples	1	Introducing multiples up to 100	• find 'multiples' for a given whole number	
	1	Introducing factors for numbers up to 100	 determine 'factors' for a given whole number connect number relationships involving multiplication to factors of a number 	
Factors and common factors	2	Finding common factors for two numbers	• find common factors for two numbers	
	3	Solving problems using factors and multiples	 solve problems using knowledge of factors and multiples, eg 'There are 48 people at a party. In how many ways can you set up the tables and chairs, so that each table seats the same number of people and there are no empty chairs?' 	
Know and us	e the vo	cabulary of prime num	nbers, prime factors and composite (non-prime) numbers	
Esta	ablish w	hether a number up to	0 100 is prime and recall prime numbers up to 19	
		Quest: Multip	olication and Division Y5A4	
Prime numbers	1	Introducing prime and composite numbers	 establish and define prime numbers establish and define composite numbers know and recall all prime numbers up to 19 	
Recognise an	d use sq	uare numbers and cub	be numbers, and the notation for squared $(^2)$ and cubed $(^3)$	
		Quest: Mult	iplication & Division Y5A4	
Square numbers	1	Describing square numbers	 model square numbers and record each number group in numerical and diagrammatic form explain how square numbers are created explore square numbers using arrays, grid paper or digital technologies recognise and explain the relationship between the name 'square' number and the way the pattern of numbers is created 	
	2	Introducing square numbers	 establish and define the concept of square numbers, including the index notation generate square numbers up to at least 100 know and recall square numbers up to and including 100 	
Cube numbers	1	Introducing cube numbers	 establish and define the concept of cube numbers, including the index notation generate cube numbers up to at least 125 know and recall cube numbers up to and including 125 	
	2	Describing cube numbers	 model cube numbers and record each number group in numerical and diagrammatic form explain how cube numbers are created explore cube numbers using cubes, grid paper or digital technologies recognise and explain the relationship between the name 'cube' number and the way the pattern of numbers is created 	



Understanding Practice and Fluency (UPF)

Multiplication and division – A

Learning

Journey

Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000

Quest: Multiplication & Division Y5A4 Steps Content Detail 1 Representing and using known facts to multiply two 2-digit multiples of 10, eg using the known fact of 30 x 4 to solve 30 x 40 as (30 x 4) x 10 • represent with models/diagrams and use known facts and place value understanding to multiply two 2-digit multiples of 10, eg using the known fact of 30 x 4 to solve 30 x 40 as (30 x 4) x 10

Multiply by 10, 100 and 1,000	I	two 2-digit multiples of 10	 using the known fact of 30 x 4 to solve 30 x 40 as (30 x 4) x 10 know that multiplying by 10 shifts the digits 1 place to the left
	2	Representing and using known facts to multiply 2 multiples of 100	 represent with models/diagrams and use known facts and place value understanding to multiply 2 multiples of 100, eg 300 x 400 = 3 x 4 = 12 so 300 x 400 = 1200 know that multiplying by 100 shifts the digits 2 places to the left
	3	Representing and using known facts to multiply 2 multiples of 10 or 100	 represent with models/diagrams and use known facts and place value understanding to multiply 2 multiples of 10 or 100, eg using the known fact of 30 x 4 to solve 30 x 400 as (30 x 4) x 100 know that multiplying by 10 shifts the digits 1 place to the left and multiplying by 100 shifts the digits 2 places to the left
	4	Multiplying any numbers by 10, 100, 1,000 and their multiples	 use mental strategies to multiply by 10, 100, 1,000 and their multiples
	5	Comparing statements using <, >, or = when multiplying by 10, 100 and 1,000	 compare statements using <, > or = when multiplying by 10, 100 and 1,000 eg, 71 x 1,000 [?] 71 x 100
Divide by 10, 100 and 1,000	1	Representing and using known facts to divide two 2-digit multiples of 10	 represent with models/diagrams and use known facts and place value understanding to divide two 2-digit multiples of 10, eg using the known fact of 60 ÷ 2 = 30 to solve 60 ÷ 20 as (60 ÷ 2) ÷ 10 know that dividing by 10 shifts the digits 1 place to the right
	2	Representing and using known facts to divide two 2-digit multiples of 10 or 100	 represent with models/diagrams and use known facts and place value understanding to divide two 2-digit multiples of 10, eg using the known fact of 600 ÷ 2 = 300 to solve 600 ÷ 20 as (600 ÷ 2)÷ 10 know that dividing by 10 shifts the digits 1 place to the right and dividing by 100 shifts the digits 2 places to the right
	3	Dividing any numbers by 10, 100, 1000 and their multiples	 use mental strategies to divide by 10, 100, 1,000 and their multiples
	4	Comparing statements when dividing by 10, 100 and 1,000 using inequality symbols	 compare statements using <, > or = when dividing by 10, 100 and 1,000, eg, 57,000 ÷ 10 [?] 5,700 ÷ 100



Understanding Practice and Fluency (UPF)

Multiplication and division – A

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000				
Quest: Multiplication & Division Y5A4				
Learning Journey	Steps Content Detail		Detail	
Multiples of 10, 100 and 1,000	1	Representing and using known facts to multiply or divide two 2-digit multiples of 10	 represent with models/diagrams and use known facts and place value understanding to multiply or divide two 2-digit multiples of 10, eg using the known fact of 60 ÷ 2 = 30 to solve 60 ÷ 20 as (60 ÷ 2) ÷ 10 know that dividing by 10 shifts the digits 1 place to the right 	
	2	Representing and using known facts to multiply or divide two 2-digit multiples of 10 or 100	 represent with models/diagrams and use known facts and place value understanding to multiply or divide two 2-digit multiples of 10, eg using the known fact of 600 ÷ 2 = 300 to solve 600 ÷ 20 as (600 ÷ 2) ÷ 10 know that dividing by 10 shifts the digits 1 place to the right and dividing by 100 shifts the digits 2 places to the right;- know that multiplying by 10 shifts the digits 1 place to the left and multiplying by 100 shifts the digits 2 places to the left 	
	3	Using known facts to solve multiplication and division problems with multiples of 10 and 100	 use known facts and place value understanding to solve multiplication problems with multiples of 10 or 100, eg 3 x 6 = 18 so 3 x 600 = 1800 use known facts and place value understanding to solve division problems with multiples of 10 or 100, eg 18 ÷ 6 = 3 so 1800 ÷ 600 = 3 explain and justify the use of the strategy 	
	4	Using known facts to multiply 1-digit numbers with multiples of 1,000	 use known facts and place value understanding to solve multiplication problems with multiples of 1000, eg, 3 x 6 = 18 so 3 x 6,000 = 18,000 explain and justify the use of the strategy 	
	5	Using known facts divide 1-digit numbers with multiples of 1,000	 use known facts and place value understanding to solve multiplication or division problems with multiples of 1,000, eg, 3 x 6 = 18 so 3 x 6,000 = 18,000 	



Understanding Practice and Fluency (UPF)

Measurement – A

Measure and calculate the perimeter of composite rectilinear shapes in cm and m				
Quest: Perimeter & Area Y5A5				
Learning Journey	Steps	Content	Detail	
Measure and calculate perimeter	1	Introducing perimeter	 use the term 'perimeter' to describe the total distance around a 2D shape estimate and measure the perimeters of 2D shapes describe when a perimeter measurement might be used in everyday situations 	
	2	Calculating the perimeters of common 2D shapes	 explain that the perimeters of 2D shapes can be determined by calculating the sum of all the side lengths record calculations used to find the perimeters of 2D shapes "find the length of 1 unknown side of a shape given the perimeter " 	
	3	Calculating the perimeters of composite rectilinear shapes	 explain that the perimeters of composite rectilinear shapes can be determined by calculating the sum of all the side lengths calculate the lengths of any unknown side lengths using lengths of other sides record calculations used to find the perimeters of composite rectilinear shapes 	
Calculate and co	ompare	the area of rectangles m² and estimat	(including squares), and including using standard units, cm², the area of irregular shapes	
		Quest: P	Perimeter & Area Y5A5	
Area of rectangles	1	Introducing formal units for area: the square centimetre	 establish the need for a formal unit to measure area and introduce square centimetres develop a sense of the area of 1 square centimetre and identify surfaces that have area 'about 1 square centimetre', 'less than 1 square centimetre' and 'greater than 1 square centimetre' identify everyday situations where square centimetres are an appropriate unit for measuring area introduce the abbreviation cm² for recording area in square centimetres 	
	2	Comparing and ordering rectangular areas using counting of standard metric units	 compare two areas by measuring using standard metric units order three or more areas by measuring using standard metric units choose the most appropriate unit cm² or m² and justify selection 	
	3	Comparing areas and perimeters of rectangles	 construct different rectangles with the same area and compare their perimeters construct different rectangles with the same perimeters and compare their areas investigate the relationship between the side lengths of a rectangle and its perimeter and area investigate the relationship between the side lengths of a square and its perimeter and area 	
	4	Solving problems relating to perimeter and area of rectangles and squares	 pose and solve problems that require the distinction between perimeter and area draw a number of rectangles of differing areas with the same perimeter;- compare with squares determine that only one square is possible if given the area of a square;- compare with rectangles investigate what happens to the area of the shape if the length of one pair of opposite sides of the shape are doubled or halved 	



Understanding Practice and Fluency (UPF)

Measurement – A

Calculate and compare the area of rectangles (including squares), and including using standard units, cm ² , m ² and estimate the area of irregular shapes				
		Quest: P	Perimeter & Area Y5A5	
Learning Journey	Steps	teps Content Detail		
Area of compound shapes	1	Calculating the area of composite shapes using small measurements in cm and m	 calculate the area of a rectangular composite shape by splitting the shape and calculating each area 	
Area of irregular shapes	1	Estimating and comparing areas of non-rectilinear shapes using a square grid	 use a square grid to approximate and compare the areas of non-rectilinear shapes compare how different placements of the grid make approximation easier or more difficult find and explain the area of irregular shapes by counting squares or part squares 	
	2	Approximating and comparing areas of non-rectilinear shapes using a square centimetre grid	 use a square-centimetre grid to approximate and compare the areas of non-rectilinear shapes compare how different placements of the grid make approximation easier or more difficult find and explain the area of irregular shapes by counting squares or part squares 	



Understanding Practice and Fluency (UPF)

Multiplication and division – Sp

Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for 2-digit numbers				
Quest: Multiplication and Division Y5Sp1				
Learning Journey	Steps	Content	Detail	
Multiply 4-digits by 1-digit	1	Multiplying 4-digit numbers by 1-digit numbers using an area model	 use an area model for 4-digit by 1-digit multiplication check answers to mental calculations using digital technologies use inverse operations to justify solutions 	
	2	Multiplying 4-digit numbers by 1-digit numbers using the expanded algorithm	 multiply the ones, then the tens, then the hundreds and then the thousands, with and without regrouping model the method with place value models or diagrams;- relate to the area model check answers to mental calculations using inverse solutions or digital technologies 	
	3	Multiplying 4-digit numbers by 1-digit numbers using the contracted algorithm	 multiply the ones, then the tens, then the hundreds and then the thousands, with and without regrouping use inverse operations or digital technologies to check solutions 	
Multiply 2-digits (area model)	1	Multiplying 2-digit numbers by 2-digit numbers using an area model	 use an area model for 2-digit by 2-digit multiplication check answers to mental calculations using digital technologies use inverse operations to justify solutions 	
Multiply 2-digits by 2-digits	1	Multiplying 2-digit numbers by 2-digit numbers using the extended form of the formal algorithm	 multiply 2-digit by 2-digit numbers using extended form, with and without regrouping check answers to mental calculations using digital technologies use inverse operations to justify solutions 	
Multiply 3-digits by 2-digits	1	Multiplying 3-digit numbers by 2-digit numbers using the extended form of the formal algorithm	 multiply 3-digit by 2-digit numbers using extended form, with and without regrouping check answers to mental calculations using digital technologies use inverse operations to justify solutions 	
Multiply 4-digits by 2-digits	1	Multiplying 4-digit numbers by 2-digit numbers using the expanded algorithm	 multiply the ones, then the tens, then the hundreds and then the thousands, with and without regrouping model the method with place value models or diagrams;- relate to the area model check answers to mental calculations using inverse solutions or digital technologies 	
	2	Multiplying 4-digit numbers by 2-digit numbers using the contracted algorithm	 multiply the ones, then the tens, then the hundreds and then the thousands, with and without regrouping use inverse operations or digital technologies to check solutions 	



Understanding Practice and Fluency (UPF)

Multiplication and division – Sp

interpret remainders appropriately for the context					
Quest: Multiplication and Division Y5Sp1					
Learning Journey	Steps	Content	Detail		
	1	Dividing a 3-digit number by a 1-digit divisor using the contracted algorithm, no remainders or zeros in answers	 apply the written algorithm to divide a 3-digit number by a 1-digit number, without remainders and without zeros in the answer apply the written algorithm to divide a 3-digit number by a 1-digit number, with and without remainders and zeros in the answer 		
Divide 4-digits by 1-digit (no	2	Dividing a 4-digit number by a 1-digit divisor using the extended algorithm, no remainders or zeros in answers	 apply the written algorithm to divide a 4-digit number by a 1-digit number, without remainders and without zeros in the answer 		
remainders)	3	Dividing a 4-digit number by a 1-digit divisor using the contracted algorithm, no remainders or zeros in answers	 apply the written algorithm to divide a 4-digit number by a 1-digit number, without remainders and without zeros in the answer 		
	4	Comparing 4-digit numbers by a 1-digit number division problems using inequality symbols	 compare 4-digit numbers by a 1-digit number division problems using inequality symbols (<, > or =) 		
Divide with remainders	1	Introducing remainders in division problems	 model division, including where the answer involves a remainder, using concrete materials explain why a remainder is obtained in answers to some division problems use mental strategies to divide a 2-digit number by a 1-digit number in problems for which answers include a remainder record remainders to division problems in words interpret the remainder in the context of a word problem 		
	2	Dividing a 4-digit number by a 1-digit divisor using the contracted algorithm, with remainders but without zeros in answers	 apply the written algorithm to divide a 4-digit number by a 1-digit number, with remainders but without zeros in the answer 		
	3	Dividing a 4-digit number by a 1-digit divisor using the contracted algorithm, with and without remainders and zeros in answers	 apply the written algorithm to divide a 4-digit number by a 1-digit number, with and without remainders and zeros in the answer 		



Understanding Practice and Fluency (UPF)

Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths				
Quest: Fractions Y5Sp2				
Learning Journey	Steps	Content	Detail	
Equivalent fractions	1	Using multiplicative strategies to recognise and find equivalent fractions with related denominators up to 1 whole (denominators 2, 3, 4, 5, 6, 8, 10)	 develop mental strategies for generating equivalent fractions, such as multiplying or dividing the numerator and the denominator by the same number explain or demonstrate why 2 fractions are or are not equivalent use multiplication and division to make equivalent fractions with a given related denominator eg 1/2 = ?/16 	
	2	Using multiplicative strategies to recognise and find equivalent fractions greater than 1 with related denominators (denominators 2, 3, 4, 5, 6, 8, 10)	 develop mental strategies for generating equivalent fractions, such as multiplying or dividing the numerator and the denominator by the same number explain or demonstrate why 2 fractions are or are not equivalent use multiplication and division to make equivalent fractions with a given related denominator eg, 1 and 1/2 = ?/16 work with proper fractions, mixed numbers and improper fractions 	
Recognise mi matl	ixed nui hematic	mbers and improper fractions a cal statements > 1 as a mixed nu	and convert from one form to the other and write umber [for example, 2/5 + 4/5 = 6/5 = 1 1/5]	
		Quest: Fracti	ons Y5Sp2	
Improper fractions to mixed numbers	1	Developing strategies to convert from improper fractions to mixed numbers using models and diagrams	 express improper fractions as mixed numbers through the use of diagrams and number lines develop strategies for converting between mixed numbers and improper fractions connect equivalent fractions >1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions 	
Mixed numbers to improper fractions	1	Developing strategies to convert from mixed numbers to improper fractions using models and diagrams	 express mixed numbers as improper fractions through the use of diagrams and number lines develop strategies, including multiplication strategies for converting between mixed numbers and improper fractions 	
Number sequences	1	Counting and representing fractions using a number line (any denominator)	 count and represent fractions using a number line (any denominator) 	



Understanding Practice and Fluency (UPF)

Compare and order fractions whose denominators are all multiples of the same number				
Quest: Fractions Y5Sp2				
Learning Journey	Steps	Content	Detail	
1 Compare and order fractions less than 1 3 4	1	Comparing unit fractions with different denominators (denominators of 2, 3, 4, 5, 6, 8, 10, 12)	 model, compare and order common unit fractions locate and represent unit fractions on a number line compare the relative value of unit fractions by placing them on a number line between 0 and 1 investigate and explain the relationship between the value of a unit fraction and its denominator compare using <,>, = 	
	2	Comparing and ordering common fractions with different denominators using models and diagrams	 compare and order common fractions using models and diagrams for support compare and order common fractions with different denominators (halves, thirds, quarters, fifths, sixths, sevenths, eighths) 	
	3	Comparing and ordering proper fractions with the same numerators but different denominators (denominators of 2, 3, 4, 5, 6, 8, 10, 12)	 compare and order proper fractions using a benchmark fraction for support, eg half or quarter compare and order fractions using the relationship between the size of the denominator and the size of the parts record comparisons using >, < or = recognise that comparisons are only valid when the 2 fractions refer to the same whole 	
	4	Comparing and ordering proper fractions with different numerators and denominators (denominators of 2, 3, 4, 5, 6, 8, 10, 12)	 compare and order proper fractions using a benchmark fraction for support, eg half or quarter record comparisons using >, < or = recognise that comparisons are only valid when the 2 fractions refer to the same whole 	
Compare and order fractions greater than 1	1	Using common denominators to compare and order proper fractions with related denominators	 find a common denominator to compare fractions compare and order using <, >, = 	
	2	Comparing and ordering improper fractions whose denominators are all multiples of the same number (greater than 1) using models	 order simple improper fractions whose denominators are all multiples of the same number using models, eg bar models compare simple proper fractions whose denominators are all multiples of the same number using models, eg bar model 	



Understanding Practice and Fluency (UPF)

Add and subtract fractions with the same denominator and denominators that are multiples of the same number				
Quest: Fractions Y5Sp2				
Learning Journey	Steps	Content	Detail	
Add and subtract	1	Adding and subtracting proper fractions with the same denominator (denominators 2, 3, 4, 5, 6, 7, 8)	 add and subtract proper fractions with the same denominator model and represent strategies, including using diagrams and written representations 	
fractions	2	Subtracting proper fractions with the same denominator (denominators 2, 3, 4, 5, 6, 7, 8)	 subtract proper fractions with the same denominator model and represent strategies, including using diagrams and written representations 	
	1	Adding proper fractions with the same denominator (denominators 2, 3, 4, 5, 6, 7, 8)	 add proper fractions with the same denominator model and represent strategies, including using diagrams and written representations 	
Add fractions within 1	2	Adding proper fractions with related denominators and answers less than 1 whole	 add proper fractions where the denominators are related model and represent strategies, including using diagrams and written representations use knowledge of equivalence to simplify answers when adding fractions 	
Add 3 or more fractions	1	Adding 3 or more fractions where the denominators are multiples using models	 add 3 or more fractions where the denominators are multiples using models eg, bar model 	
	1	Adding proper fractions with common denominators	add proper fractions with common denominators	
Add fractions	2	Adding simple fractions with related denominators	 add fractions where the denominators are related use knowledge of equivalence to simplify answers when adding fractions where the answer is greater than 1 convert the fraction to a mixed number 	
	1	Adding a whole number and a proper fraction	 add a whole number and a proper fraction model and represent strategies, including using diagrams and written representations 	
	2	Adding mixed numbers with the same denominator	 add mixed numbers with the same denominator model and represent strategies, including using diagrams and written representations 	
Add mixed numbers	3	Adding fractions, including mixed numbers, with related denominators	 add fractions, including mixed numbers, where the denominators are related convert an answer that is an improper fraction to a mixed number use knowledge of equivalence to simplify answers when adding fractions recognise that improper fractions may sometimes make calculations involving mixed numbers easier 	



Understanding Practice and Fluency (UPF)

number					
Quest: Fractions Y5Sp2					
Learning Journey	Steps	Content	Detail		
Subtract fractions	1	Subtracting proper fractions with common denominators	• subtract proper fractions with common denominators		
	2	Subtracting proper fractions with related denominators and answers less than 1 whole	 subtract proper fractions where the denominators are related model and represent strategies, including using diagrams and written representations use knowledge of equivalence to simplify answers when subtracting fractions 		
	3	Subtracting simple fractions with related denominators	 subtract fractions where the denominators are related use knowledge of equivalence to simplify answers when subtracting fractions where the answer is greater than 1 convert the fraction to a mixed number 		
Subtract mixed numbers (1)	1	Subtracting fractions from 1 using models	 subtract fractions from one whole using models (part- whole, bar model, number line) eg, 1 - 2/8 = 		
	1	Subtracting a proper fraction from a whole number	 use diagrams, and mental and written strategies, to subtract a proper fraction from any whole number including 1 model and represent strategies, including using diagrams and written representations 		
Subtract mixed numbers (2)	2	Subtracting mixed numbers with the same denominator	 subtract mixed numbers with the same denominator model and represent strategies, including using diagrams and written representations 		
	3	Subtracting fractions and mixed numbers with the same denominator	 use models to subtract 2 or more fractions and mixed numbers with the same denominator subtract fractions and mixed numbers with the same denominator without models solve problems involving subtracting fractions and mixed numbers with the same denominator 		
Subtract 2 mixed	1	Subtracting mixed numbers with common denominators	subtract mixed numbers with common denominators		
numbers	2	Subtracting mixed numbers with related denominators	• subtract mixed numbers with related denominators		



Understanding Practice and Fluency (UPF)

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams			
Quest: Fractions Y5Sp2			
Learning Journey	Steps	Content	Detail
Multiply unit fractions by an integer	1	Multiplying unit fractions by whole numbers using models and diagrams	 apply and extend previous understandings of multiplication to multiply a unit fraction by a whole number use repeated addition to represent and multiply unit fractions by whole numbers, eg 1/5 × 3 = 1/5 + 1/5 + 1/5 = 3/5 develop a rule for multiplying unit fractions by whole numbers, eg multiply the numerator by the whole number solve word problems involving multiplication of unit fractions by whole numbers, including area and length problems
Multiply non-unit fractions by an integer	1	Multiplying proper fractions by whole numbers using models and diagrams	 apply and extend previous understandings of multiplication to multiply a fraction by a whole number supported by models and/or diagrams, eg 2/5 × 3 = 2/5 + 2/5 + 2/5 = 6/5 = 1 1/5 use repeated addition to multiply simple fractions by whole numbers, eg 2/5 × 3 = 2/5 + 2/5 + 2/5 = 6/5 = 1 1/5 develop a rule for multiplying simple fractions by whole numbers, eg 2/5 × 3 = 2 × 3 /5 = 6/5 = 1 1/5 solve word problems involving multiplication of fractions by whole numbers, including area and length problems
Multiply mixed numbers by integers	1	Multiplying mixed numerals by whole numbers using models and diagrams	 convert the mixed numeral to an improper fraction and then multiply by a whole number supported by models and/or diagrams, eg 1 and 2/3 x 6 as 5/3 x 6 = 30/3 or 10 solve word problems involving multiplication of fractions by whole numbers, including area and length problems
Fraction of an amount	1	Finding a unit fraction of a quantity using multiplication and division facts (denominators 2–10 and multiples of 10)	 calculate unit fractions of collections where the result is a whole number, eg calculate 1/5 of 30 as 5 x ? = 30 or 30 divided by 5 = ? model and explain solutions
	2	Finding a simple fraction of a quantity with and without the use of digital technologies	 calculate a simple fraction of a collection/quantity, with and without the use of digital technologies explain how unit fractions can be used in the calculation of simple fractions of collections/quantities, eg 'To calculate 3/8 of a quantity, I found 1/8 of the collection first and then multiplied by 3'
	3	Solving word problems involving fractions of a collection including mixed numbers, proper and improper fractions	 solve word problems involving a fraction of a collection/ quantity
Using fractions as operators	1	Using fractions as operators	 link understanding of fractions of amounts and multiplying fractions to using fractions as operators use knowledge of commutativity
	2	Solving real world problems involving multiplication of fractions and mixed numbers	 solve real world problems involving multiplication of fractions and mixed numbers
	3	Solving word problems involving both proper fractions and mixed numbers with the same denominator	 solve word problems involving adding and subtracting fractions with the same denominator model and represent strategies, including using diagrams and written representations


Understanding Practice and Fluency (UPF)

Read and write decimal numbers as fractions [for example, 0.71 = 71/100]			
Quest: Decimals & Percentages Y5Sp3			
Learning Journey	Steps	Content	Detail
Decimals up to 2 d.p. and number sequence	1	Counting in decimal hundredths	 count forwards and backwards by hundredths from any decimal number expressed to 2 decimal place, using concrete materials and number lines
Decimals as fractions	1	Connecting decimal fractions to common fractions involving tenths and hundredths	 understand the relationship between decimal fractions and common fractions involving tenths and hundredths recognise and apply decimal notation to express whole numbers, tenths and hundredths as decimals, eg 0.1 is the same as 1/10 investigate equivalences using various methods, eg use a number line or a calculator to show that 1/2 is the same as 0.5 and 5/10
	2	Connecting decimal fractions to common fractions involving halves, fifths, tenths and hundredths	 understand the relationship between decimal fractions and common fractions involving halves, fifths, tenths and hundredths
	3	Connecting decimal fractions to common fractions involving halves and quarters	 understand the relationship between decimal fractions and common fractions involving halves and quarters
Recognise	and use	thousandths and relate them	to tenths, hundredths and decimal equivalents
		Quest: Decimals & P	ercentages Y5Sp3
Understand thousandths	1	Introducing decimal thousandths	 recognise that the place value system can be extended beyond hundredths express thousandths as decimals interpret decimal notation for thousandths, eg, 0.123 = 123/1,000 state the place value of digits in decimal numbers of up to 3 decimal places model thousandths using concrete materials represent decimal fractions, eg, as fractions (tenths, hundredths and thousandths), using concrete materials and in diagrams
Thousandths as decimals	1	Partitioning decimal thousandths	 use place value to partition decimals of up to 3 decimal places partition decimals of up to 3 decimal places in non-standard forms partition fractions up to thousandths into decimals and fractions



Understanding Practice and Fluency (UPF)

Round decimals with two decimal places to the nearest whole number and to one decimal place				
	Quest: Decimals & Percentages Y5Sp3			
Learning Journey	Steps	Content	Detail	
	1	Rounding decimal tenths and hundredths	 round a number with 1 or 2 decimal places to the nearest whole number 	
Rounding decimals	2	Rounding decimal hundredths	round hundredths to the nearest whole numberround hundredths to the nearest tenth	
	3	Round decimals to tenths or hundredths	 round decimal thousandths to the nearest tenths or hundredths 	
	Read, w	vrite, order and compare numb	pers with up to three decimal places	
		Quest: Decimals & P	ercentages Y5Sp3	
Order and compare decimals	1	Comparing and ordering decimal fractions of up to 3 decimal places	 place decimal numbers of up to 3 decimal places on a number line between 0 and 1 compare and order decimals with 3 decimal places using >, < and = compare and order decimals with a different number of decimal places, up to 3 decimal places 	
Recognise the p a	er cent nd writ	symbol (%) and understand th e percentages as a fraction wit	at per cent relates to 'number of parts per hundred', h denominator 100, and as a decimal	
		Quest: Decimals & P	ercentages Y5Sp3	
Understand percentages	1	Introducing percentages	 recognise that the symbol % means 'percent' understand that 'percent' relates to 'number of parts per one hundred' write fractions with a denominator of 100 as percentages and vice versa model percentages with concrete materials/ drawings, eg using 10x10grid identify real-life contexts where percentages are used find a percent of a quantity as a rate per 100, eg 30% of a quantity means 30/100 times the quantity 	
Percentages as fractions and decimals	1	Investigating the relationships between fractions, decimals and percentages	 investigate using concrete materials, drawings and calculators, the relationships between decimals, percentages and fractions with denominators of 2, 4, 5, 10, 20, 25, 50 and 100 record relationships between decimals, percentages and fractions (with denominators 2, 4, 5, 10, 20, 25, 50, 100) demonstrate understanding using symbolic representation 	
Equivalent F.D.P	1	Representing common equivalent fractions, decimals and percentages	 recall the relationships between decimals, percentages and fractions with denominators of 2, 4, 5, 10, 20, 25, 50 and 100 recognise fractions, decimals and percentages as different representations of the same value interpret and explain the use of fractions, decimals and percentages in everyday contexts relate equivalence to proportion 	



Understanding Practice and Fluency (UPF)

Solve problems involving number up to three decimal places			
		Quest: Deci	mals Y5Su1
Learning Journey	Steps	Content	Detail
Add decimals within 1	1	Adding decimals within 1 using models (up to 3 decimal places)	 add decimals within 1 using models (up to 3 decimal places) eg, split method
Subtracting decimals within 1	1	Subtracting decimals within 1 using models (up to 3 decimal places)	 subtract decimals within 1 while using models (up to 3 decimal places)
Compliments to 1	1	Investigating decimal complements of 1	 use addition and subtraction to explore decimal complements of 1, eg 0.83 + 0.17 = 1
Adding decimals - crossing the whole	1	Adding decimals beyond 1 using models (up to 3 decimal places)	 add decimals beyond 1 using models (up to 3 decimal places) eg, split method
Add decimals, same place value, crossing the whole	1	Adding decimals to 1 decimal place using place value partitioning and models for support	 apply place value partitioning to add tenths and whole numbers or just tenths eg 3.4 + 5.2 as 3 + 5 and 4 tenths + 2 tenths apply bridging to 10 to add tenths and whole numbers or just tenths eg 3.8 + 0.5 as 3.8 + 0.2 + 0.3
	2	Adding decimals to 1 decimal place using mental strategies	 select and apply efficient mental strategies to solve addition problems, including compensation, bridging to 1, using place value record strategies using numbers, models and diagrams relate decimals to fractions to aid mental strategies solve word problems using mental strategies, including problems involving measurement
	3	Adding decimals to 2 decimal places using mental strategies	 select and apply efficient mental strategies to solve addition problems, including compensation, bridging to 1, using place value estimate sums record strategies using numbers, models and diagrams relate decimals to fractions to aid mental strategies solve word problems using mental strategies, including problems involving measurement and money
	4	Adding decimals to 3 decimal places using mental strategies	 select and apply efficient mental strategies to solve addition problems, including compensation, bridging to 1, using place value record strategies using numbers, models and diagrams relate decimals to fractions to aid mental strategies solve word problems using mental strategies, including problems involving measurement and money

Understanding Practice and Fluency (UPF)

Fractions, decimals and percentages – Sp

Solve problems involving number up to three decimal places				
Quest: Decimals Y5Su1				
Learning Journey	Steps	Content	Detail	
	1	Subtracting decimals up to 3 decimal places with the same number of decimal places using place value partitioning and models	 apply place value partitioning to subtract decimals and whole numbers eg, 6.4 – 5.2 as 6 – 5 and 4 tenths + 2 tenths 	
in the same place value	2	Subtracting decimals with 3 decimal places using bridging to 10 and models	 apply bridging to 10 to subtract decimals and whole numbers eg, 3.8 – 0.5 as 3.8 – 0.2 – 0.3 	
	3	Subtracting decimals with 3 decimal places using rounding and compensating and models	 apply rounding and compensating to subtract decimals and whole numbers eg, 9.9 – 5.2 as 10 – 5.2 = 4.8, 4.8 – 0.1 = 4.7 	
Add decimals in different place values	1	Adding decimals to hundredths	 add a whole number and a decimal (to hundredths) add 2 decimal numbers in tenths add 2 decimals numbers in hundredths add decimal numbers to 2 places (mixed place value) 	
Subtract decimals in different place values	1	Subtracting decimals in different place values	 subtract numbers with different numbers of decimal places eg, 4.543 - 2.34 	
Adding and subtracting	1	Adding a decimal number up to 3 decimal places to a whole number	• add a decimal number and whole numbers eg, 143.0 + 1.34	
wholes and decimals	2	Subtracting decimal numbers up to 3 decimal places from a whole number	 subtract decimal numbers from whole numbers eg, 12.0 – 1.3 	
Decimal sequences	1	Identifying and creating simple rules for decimal sequences	 identify and create simple rules for decimal sequences eg, add 0.15 	
Multiplying decimals by 10, 100 and 1,000	1	Multiplying decimals by 10	 use PV equipment to multiply decimals by 10 recognise that the digits move one place to the left use zero as a place holder 	
	2	Multiplying decimals by 100	 recognise that the digits move two places to the left use zero as a place holder use PV equipment to multiply decimals by 100 	
	3	Multiplying decimals by 1,000	 recognise that the digits move three places to the left use zero as a place holder use PV equipment to multiply decimals by 1,000 	
	4	Multiplying decimals by 10, 100, 1,000	• multiply decimals by 10, 100, 1,000	

Mathletics



Understanding Practice and Fluency (UPF)

Solve problems involving number up to three decimal places				
		Quest: Deci	mals Y5Su1	
Learning Journey Steps Content Detail				
Dividing decimals by 10, 100 and 1,000	1	Dividing decimals by 10	 recognise that the digits move one place to the right use zero as a place holder use PV equipment to divide decimals by 10 	
	2	Dividing decimals by 100	 recognise that the digits move two places to the right use zero as a place holder use PV equipment to divide decimals by 100 	
	3	Dividing decimals by 1,000	 recognise that the digits move three places to the right use zero as a place holder use PV equipment to divide decimals by 1000 	
	4	Dividing decimals by 10, 100, 1,000	• divide decimals by 10, 100, 1,000	



Understanding Practice and Fluency (UPF)

Geometry - Properties of shape

Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles				
	Quest: Properties of shape Y5Su2			
Learning Journey	Steps	Content	Detail	
Measuring angles in degrees	1	Classifying angles by their size in degrees	 connect the term 'right angle' with 90°, 'straight angle' with 180° and 'angle of revolution' with 360° establish and recall the angle size in degrees for each of the classifications: acute, obtuse and reflex classify angles with a specified size in degrees as acute, right, obtuse, straight, reflex or a revolution draw angles that are acute, right, obtuse, straight, reflex or a revolution using a ruler only 	
Draw given ang 360°), a	gles, and nales at	d measure them in degrees (°) t a point on a straight line and) identify: angles at a point and one whole turn (total d 1/2 a turn (total 180°), other multiples of 90°	
	<u></u>	Quest: Propertie	s of shape Y5Su2	
Measuring with a protractor (1)	1	Measuring and estimating angles of up to 180° in degrees	 measure angles of up to 180° using a protractor estimate angles of up to 180° and check by measuring 	
Identify: angles a	at a poir	nt and one whole turn (total 3 (total 180°), othe	60°), angles at a point on a straight line and 1/2 a turn r multiples of 90°	
		Quest: Propertie	s of shape Y5Su2	
Calculating angles on a straight line	1	Calculating supplementary angles	• calculate the size of an unknown angle in a diagram and explain how this is done (using supplementary angles)	
Calculating angles around a point	1	Classifying angles as acute, right, obtuse, straight, reflex or a revolution	 understand and describe angles greater than or equal to 180° identify and name angles as acute, right, obtuse, straight, reflex and revolution categorise angles as acute, right, obtuse, straight, reflex and revolution draw and create angles of a given size: acute, right, obtuse, straight, reflex and revolution (no protractors) 	
	2	Calculating angles that total 360° or a complete turn, using knowledge of a straight line	 calculate pairs of angles that total a complete turn, eg, x + 227° = 133° calculate more than two angles that total a complete turn, eg, 115° + x + 157° = 360° 	
Use the p	oropertie	es of rectangles to deduce rel	ated facts and find missing lengths and angles	
		Quest: Propertie	s of shape Y5Su2	
Deputer of t	1	Sorting among polygons, regular polygons and other 2D shapes	 explain the difference between regular and irregular shapes identify 2D shapes that are not polygons 	
Regular and irregular polygons	2	Classifying quadrilaterals using a variety of strategies	 classify 2D shapes in a hierarchy based on properties interpret a hierarchy diagram of 2D shapes and their properties use Venn diagrams to record classifications interpret classifications represented using Venn diagrams 	



Understanding Practice and Fluency (UPF)

Geometry - Properties of shape

Identify 3-D shapes, including cubes and other cuboids, from 2-D representations			
		Quest: Propertie	s of shape Y5Su2
Learning Journey	Steps	Content	Detail
Reasoning about 3D shapes	1	Comparing, describing and naming prisms	 identify and determine the number of pairs of parallel faces of 3D shapes, eg, 'A cuboid has three pairs of parallel faces' identify the 'base' of prisms recognise that the base of a prism is not always the face where the prism touches the ground name prisms according to the shape of their base, eg, cuboid recognise a cube as a special type of prism
	2	Comparing, describing and naming pyramids	 identify and determine the number of faces of 3D shapes identify the 'base' of pyramids recognise that the base of a pyramid is not always the face where the prism touches the ground name pyramids according to the shape of their base, eg, square-based pyramid
	3	Connecting prisms and pyramids with their nets	 examine a diagram to determine whether it is or is not the net of a prism or pyramid explain why a given net will not form a prism or pyramid visualise and sketch nets for a given prism or pyramid recognise whether a diagram is a net of a particular prism or pyramid visualise and name prisms and pyramids, given diagrams of their nets select the correct diagram of a net for a given prism or pyramid from a group of similar diagrams where the others are not valid nets of the object



Understanding Practice and Fluency (UPF)

Geometry - Position and direction

Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.			
		Quest: Position 8	direction Y5Su3
Learning Journey	Steps	Content	Detail
Position in the first quadrant	1	Representing and solving problems using coordinates in the first quadrant of the Cartesian plane	 represent real-world and mathematical problems by graphing points in the first quadrant of the Cartesian plane interpret coordinate values in the context of the situation
	1	Identifying 2D reflections on a grid or coordinate grid (first quadrant only)	• identify 2D shapes in diagrams and on coordinate grid
Reflection with coordinates	2	Plotting reflections of shapes and points on a coordinate grid	• plot reflections of shapes and points on a coordinate grid
	3	Recording the positions of reflected points using coordinates	 record the positions of reflected points using coordinates eg, (3,5)
Translation with coordinates	1	Investigating translations in the first quadrant	 identify the one-step transformation used to move a shape from 1 position to another follow instructions to position a shape on a grid identify the instructions required to translate a shape on a grid using suitable language such as left/right, up/down, number of squares moved
	2	Translating coordinates in the first quadrant	record the new position of a coordinate after translationrecord the new position of a coordinate after translation



Understanding Practice and Fluency (UPF)

Measurement – Su

Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml]			
Quest: Converting units Y5Su4			
Learning Journey	Steps	Content	Detail
Kilograms and kilometres	1	Converting between grams and kilograms (whole numbers only)	 describe 1 gram as 1/1,000 of a kilogram apply place value understanding to modelling, describing and recording metric units of measurement convert between grams and kilograms using whole numbers and record measurement equivalents in a two-column table explain the relationship between the size of a unit and the number of units needed convert between mass written in grams and mixed units (kg and g), eg, 1,250g = 1 kg 250g or 7kg 320g = 7,320g
	2	Converting between kilometres and metres (whole numbers only)	 describe 1 km as 1000 m convert between kilometres and metres using whole numbers record measurement equivalents in a table explain the relationship between the size of a unit and the number of units needed
	3	Comparing lengths in millimetres, centimetres, metres and kilometres	 compare lengths and distances using millimetres, centimetres, metres and kilometres
	4	Ordering lengths in millimetres, centimetres, metres and kilometres	 order lengths and distances using millimetres, centimetres, metres and kilometres
	5	Recording lengths using mixed units	 record lengths and distances using combinations of millimetres, centimetres, metres and kilometres
Millimetres and millilitres	1	Converting between units of volume and capacity (whole numbers only)	 convert between millilitres and litres using whole numbers and record measurement equivalents in a two-column table
	2	Converting between standard metric units of volume and capacity with whole numbers and fractions	 understand the meaning of metric prefixes, eg milli- convert between millilitres and litres and vice versa, including using halves and quarters of litres
	3	Converting between metres and millimetres (whole numbers only)	 describe 1 metre as 1,000 millimetres convert between millimetres and metres using whole numbers and record measurement equivalents in a two- column table explain the relationship between the size of a unit and the number of units needed
Metric units	1	Solving problems involving masses of the same unit	 solve a variety of problems involving masses of the same unit



Understanding Practice and Fluency (UPF)

Measurement – Su

inches, pounds and pints				
Quest: Converting units Y5Su4				
Learning Journey	Steps	Content	Detail	
Imperial units	1	Converting informally between metric and imperial units of length	 understand and use approximate equivalences between metric units and common imperial units such as centimetres and inches, feet and metres, kilometres and miles understand and use approximate equivalences between metric units and common customary units such as litres and pints 	
	2	Converting between pounds and ounces (whole numbers only)	 describe 1 lb as 16 oz convert between pounds and ounces using whole numbers record measurement equivalents in a table explain the relationship between the size of a unit and the number of units needed 	
		Solve problems involving con	verting between units of time	
		Quest: Convert	ing units Y5Su4	
Converting units of time	1	Converting between hours, minutes and seconds (whole numbers only)	 convert between hours and minutes and vice versa (whole numbers only) convert between minutes and seconds and vice versa (whole numbers only) convert between hours, minutes and seconds using whole numbers and record measurement equivalents in a two-column table) 	
	2	Converting between hours, minutes and seconds (including quarter and half hours and minutes)	 convert between hours and minutes and vice versa, including quarter-hour, half-hour and three-quarter-hour conversions convert between minutes and seconds and vice versa, including quarter minute, half minute, and three-quarter minute conversions 	
	3	Converting between units of time (including quarter and half hours and minutes)	 convert between weeks and days (whole number of weeks only) convert between months and years (whole number of years only) convert between all units of time using whole numbers and record measurement equivalents in a two-column table 	
Timetables	1	Using timetables (12-hour and 24-hour time)	 use real-world timetables (12-hour and 24-hour time) to determine arrival time given the desired departure time, including when the departure time is not listed exactly in the timetable use real-world timetables (12-hour and 24-hour time) to determine departure time given the desired arrival time, including when the arrival time is not listed exactly in the timetable use real-world timetables (12-hour and 24-hour time) to determine departure time given the desired arrival time, including when the arrival time is not listed exactly in the timetable use real-world timetables (12-hour and 24-hour time) to determine the duration of a journey solve real-world problems involving timetables 	



Understanding Practice and Fluency (UPF)

Measurement – Su

Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]				
	Quest: Volume Y5Su5			
Learning Journey	Steps	Content	Detail	
What is volume?	1	Measuring with millilitres to the nearest 100 ml	 use the millilitre as a unit to measure volume and capacity, using a device calibrated in millilitres (read to the nearest 100ml with every 100ml or every other 100ml marked) record volumes and capacities using the abbreviation for millilitres (ml) estimate the capacity of a container in millilitres and check by measuring (measure to the nearest 100mL with every 100mL or every other 100ml marked) compare and order the capacities of 2 or more containers measured in millilitres 	
	2	Solving word problems involving volume and capacity	• use the four operations to solve word problems involving volume and capacity including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit	
Comparing	1	Estimating and measuring volume using cubic centimetre blocks	 use the cubic centimetre as a unit to measure volumes by packing small containers with cubic centimetre blocks and describing in terms of layers, eg, '2 layers of 10 cubic centimetre blocks' construct 3D shapes using cubic centimetre blocks and count the blocks to determine the volumes of the objects; devise and explain strategies for counting blocks compare the volumes of 2 or more objects made from cubic centimetre blocks by counting blocks record volumes using the abbreviation for cubic centimetres (cm3) 	
volume	2	Using unit cubes to measure volume	 measure volumes by counting unit cubes, using cubic centimetres, cubic inches, cubic feet and improvised units 	
	3	Using cubic centimetres to measure volume	 measure the volumes of rectangular containers by packing them with cubic-centimetre blocks explain the advantages and disadvantages of using cubic-centimetre blocks as a unit to measure volume describe arrangements of cubic-centimetre blocks in containers in terms of layers connect the layers of blocks with multiplying the dimensions 	
Estimate capacity	1	Estimating given capacities in millilitres and litres	 make appropriate estimations of capacities using millilitres and litres 	



Understanding Practice and Fluency (UPF)

Number and place value

Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit				
Quest: Place value Y6A1				
Learning Journey	Steps	Content	Detail	
	1	Reading and writing numbers to 10 million	 apply an understanding of place value to read numbers to 10 million apply an understanding of place value to write numbers to 10 million 	
	2	Naming the place value for a digit in a number	 name the place value for an underlined digit in a number identify the value of an underlined digit in a number 	
Numbers to ten million	3	Identifying the place value of digits in numbers up to 10 million	 state the place value of digits in numbers of up to 10 million pose and answer questions that extend place value understanding of numbers, eg 'What happens if I rearrange the digits in the number 12 345 678?', 'How can I rearrange the digits to make the largest number?' represent and describe whole numbers to 10 000 000 pictorially and symbolically 	
	4	Using place value to partition 7-digit numbers	 use place value to partition numbers of up to 7 digits, eg, 4,673,012 is 4,000,000 + 600,000 + 70,000 + 3,000 + 10 + 2 	
	5	Using non-standard partitioning with 7-digit numbers	 partition numbers of up to 7 digits in non-standard forms, eg, 5,617,000 as 5,500,000 + 117,000 	
		Quest: Place	e value Y6A1	
Compare and	1	Comparing 7-digit numbers	- compare 7-digit numbers using words and symbols <, =, >	
order any number	2	Comparing 7-digit numbers	• arrange 7-digit numbers in ascending and descending order	
		Round any whole number to	a required degree of accuracy	
		Quest: Place	e value Y6A1	
Round within ten million	1	Rounding numbers to the nearest 10,000, 100,000 or 1,000,000	• round to the nearest 10,000, 100,000 or 1,000,000 with and without models (place value grids, number lines)	
	Use ı	negative numbers in context,	and calculate intervals across zero	
		Quest: Place	e value Y6A1	
Negative numbers	1	Investigating integers	 recognise the location of negative whole numbers in relation to zero and place them on a number line use the term 'integers' to describe positive and negative whole numbers and zero investigate negative whole numbers and the number patterns created when counting backwards on a calculator recognise that negative whole numbers can result from subtraction 	
	Solv	e number and practical prob	lems that involve all of the above.	
		Quest: Place	e value Y6A1	

Mathletics

Understanding Practice and Fluency (UPF)

Addition, subtraction, multiplication and division

Use their knowledge of the order of operations to carry out calculations involving the four operations				
Quest: Four operations Y6A2				
Learning Journey	Steps	Content	Detail	
Add and subtract integers	1	Using a formal written algorithm for addition calculations involving numbers of any size (no carrying)	 apply algorithms to solve problems without carrying, with the same number of places and with a different number of places;-include opportunities for students to write their own algorithms with digits in correct place value positions;- include word problems use estimation or reverse operation to check the reasonableness of solutions 	
	2	Using a formal written algorithm for addition calculations involving numbers of any size (with carrying)	 apply algorithms to solve problems with carrying in 1 or more places, with the same number of places and with a different number of places;- include opportunities for students to write their own algorithms with digits in correct place value positions;- include word problems use estimation or reverse operation to check the reasonableness of solutions 	
	3	Using a formal written algorithm to record subtraction calculations involving numbers of any size (without decomposing)	 apply algorithms to solve problems without trading (decomposing), with the same number of places for both numbers, with fewer places in the second number (subtrahend) and with and without 1 or more zeros in the first number (minuend);- include opportunities for students to write their own algorithms with digits in correct place value positions and with the larger number first;- include word problems use estimation or reverse operation to check the reasonableness of solutions 	
	4	Using a formal written algorithm to record subtraction calculations involving numbers of any size (with decomposing)	 apply algorithms to solve problems with trading (decomposing) in 1 or more places, with the same number of places for both numbers, with fewer places in the second number (subtrahend) and with and without 1 or more zeros in the first number (minuend);- include opportunities for students to write their own algorithms with digits in correct place value positions and with the larger number first;- include word problems use estimation or reverse operation to check the reasonableness of solutions 	
Multiply multi-c	ligit nur	nbers up to 4 digits by a Ion	a 2-digit whole number using the formal written method of generation	
		Quest: F	our operations Y6A2	
Multiply up to a 4-digit number by 2-digit number	1	Multiplying 4-digit numbers by 2-digit numbers using the contracted algorithm, without regrouping (regrouping only when adding the partial products)	 multiply the ones, then the tens, then the hundreds and then the thousands, without regrouping check if a calculation is correct 	
	2	Multiplying 4-digit numbers by 2-digit numbers using the contracted algorithm	 multiply the ones, then the tens, then the hundreds and then the thousands, with and without regrouping use inverse operations or digital technologies to check solutions 	

Understanding Practice and Fluency (UPF)

Addition, subtraction, multiplication and division

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context			
Quest: Four operations Y6A2			
Learning Journey	Steps	Content	Detail
	1	Dividing up to a 4-digit number by a 2-digit divisor using the contracted algorithm, no remainders or zeroes in the answer	 apply the written algorithm to divide up to a 4-digit number by a 2-digit number
Short division	2	Dividing up to a 4-digit number by a 2-digit divisor using the contracted algorithm, with remainders but without zeros in answers	 apply the written algorithm to divide up to a 4-digit number by a 2-digit number, with remainders and without zeros in the answer
	3	Dividing up to a 4-digit number by a 2-digit divisor using the contracted algorithm, with and without remainders and zeros in answers	 apply the written algorithm to divide up to a 4-digit number by a 2-digit number, with and without remainders and zeros in the answer
Division using factors	1	Dividing up to 4-digit numbers by 2-digit multiples of 10 divisors using factors with models	 solve division problems by splitting factors, eg, 540 ÷ 20 as 540 ÷ 10 ÷ 2 using models illustrate and explain the calculation using equations, rectangular arrays and/or area models
Divide numb division, and int	ers up to terpret r	o 4 digits by a two-digit whole r emainders as whole number re for the co	number using the formal written method of long mainders, fractions, or by rounding, as appropriate ontext
		Quest: Four ope	rations Y6A2
Long division (1)	1	Dividing a 3-digit number by a 2-digit divisor using the extended algorithm, no remainders or zeros in answers	 apply the written algorithm to divide a 3-digit number by a 2-digit number, without remainders and without zeros in the answer
Long division (2)	1	Dividing a 4-digit number by a 2-digit divisor using the extended algorithm, no remainders or zeros in answers	 apply the written algorithm to divide a 4-digit number by a 2-digit number, without remainders and without zeros in the answer
Long division (2)	1	Dividing a 3-digit number by a 2-digit divisor using the contracted algorithm, no remainders or zeros in answers	 apply the written algorithm to divide a 3-digit number by a 2-digit number, without remainders and without zeros in the answer
	2	Dividing a 3-digit number by a 2-digit divisor using the contracted algorithm, no remainders or zeros in answers	 apply the written algorithm to divide a 3-digit number by a 2-digit number, with remainders
Long division (4)	1	Dividing a 4-digit number by a 1-digit divisor using the extended algorithm, with and without remainders and zeros in answers	 apply the written algorithm to divide a 4-digit number by a 1-digit number, with and without remainders and zeros in the answer
Long division (4)	2	Dividing up to a 4-digit number by a 2-digit divisor using the division algorithm (extended/long)	 apply the written extended (long) algorithm to divide up to a 4-digit number by a 2-digit number, with and without remainders, with and without zeros in the answer

Mathletics

Mathletics

Understanding Practice and Fluency (UPF)

Addition, subtraction, multiplication and division

Identify common factors, common multiples and prime numbers			
Quest: Four operations Y6A2			
Learning Journey	Steps	Content	Detail
Common factors	1	Finding factors for whole numbers up to 144	 determine all 'factors' of a given whole number up to 144 determine the 'highest common factor' (HCF) of 2 whole numbers determine whether a particular number is a factor of a given number using digital technologies recognise that when a given number is divided by 1 of its factors, the result must be a whole number
	2	Finding the highest common factor using a list	• find the highest common factor using a list
Common	1	Finding multiples up to 144	 determine 'multiples' of a given whole number determine the 'lowest common multiple' (LCM) of 2 whole numbers
multiples	2	Finding the lowest common multiple of 2 whole numbers less than or equal to 12	 find the lowest common multiple of 2 whole numbers less than or equal to 12
Primes to 100	1	Identifying prime and composite numbers	 determine whether a number is prime, composite or neither explain whether a whole number is prime, composite or neither by finding the number of factors, eg '13 has two factors (1 and 13) and therefore is prime', '21 has more than two factors (1, 3, 7, 21) and therefore is composite', '1 is neither prime nor composite as it has only one factor, itself'
Squares and cubes	1	Comparing square and cube numbers using inequality symbols	 compare square and cube numbers using inequality symbols (<, >, =), eg, 3 cubed [?] 4 squared
	Solve pı	oblems involving addition, sub	traction, multiplication and division
		Quest: Four ope	rations Y6A2
	1	Introducing order of operations involving addition and subtraction	 solve number sentences involving addition and subtraction
	2	Introducing order of operations involving multiplication and division	 solve number sentences involving multiplication and division
	3	Introducing order of operations involving all 4 operations	solve number sentences involving all 4 operations
Order of operations	4	Introducing order of operations involving grouping symbols	 explore the use of brackets and the order of operations in number sentences use the term 'operations' to describe collectively the processes of addition, subtraction, multiplication and division recognise that the grouping symbols () and [] are used in number sentences to indicate operations that must be performed first perform calculations involving grouping symbols without the use of digital technologies

Mathletics

Understanding Practice and Fluency (UPF)

Addition, subtraction, multiplication and division

Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.				
		Quest: Four ope	rations Y6A2	
Learning Journey	Steps	Content	Detail	
Mental calculations and estimation	1	Selecting efficient strategies to multiply whole numbers of up to 4 digits by 1- and 2-digit numbers	 apply mental strategies apply efficient use of formal algorithms use digital technologies estimate solutions to problems and check to justify solutions 	
	2	Selecting efficient strategies to divide whole numbers of up to 4 digits by a 1-digit divisor	 apply mental strategies apply efficient use of formal algorithms use digital technologies estimate solutions to problems and check to justify solutions 	
	Solve pr	oblems involving addition, sub	traction, multiplication and division	
		Quest: Four ope	rations Y6A2	
Reason from known facts	1	Solving calculations using related facts and reasoning	• use reasoning and known facts to solve related problems including the four operations, eg, 70 \div ? = 7; 7 0 \div ? = 3.5	
	2	Applying the commutativity law of multiplication to aid mental computation	• apply the commutativity law to aid mental computation	



Understanding Practice and Fluency (UPF)

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination			
Quest: Fractions Y6A3			
Learning Journey	Steps	Content	Detail
Simplify fractions	1	Using common factors to simplify proper fractions to their simplest form	 determine a common factor of the numerator and denominator of a fractions and use to find an equivalent fraction. Repeat until the fraction is reduced to its simplest form write a fraction in its simplest form using the highest common factor know that a fraction is reduced to its simplest form when the only common factor of the numerator and denominator is 1
Fractions on a number line	1	Comparing and ordering fractions with the same or related denominators up to 20 on a number line	 compare fractions with the same or related denominators using <, > or = order fractions with the same or related denominators on a number line
		Compare and order fractior	ns, including fractions > 1
		Quest: Fracti	ons Y6A3
Compare and order (denominator)	1	Using common denominators to compare and order proper fractions with related denominators	 find a common denominator to compare fractions compare and order using <, >, =
	2	Comparing and ordering proper fractions with the same numerators but different denominators (denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100)	 compare and order proper fractions using a benchmark fraction for support, eg half or quarter compare and order fractions using the relationship between the size of the denominator and the size of the parts record comparisons using >, < or = recognise that comparisons are only valid when the 2 fractions refer to the same whole
Compare and order (numerator)	1	Comparing and ordering unit fractions with different denominators using models and diagrams	 compare and order common unit fractions using models and diagrams for support compare and order common fractions with different denominators (halves, thirds, quarters, fifths, sixths, sevenths, eighths)
	2	Using common denominators to compare and order proper fractions with unrelated denominators	 find a common denominator to compare fractions compare and order using <, >, =



Understanding Practice and Fluency (UPF)

Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions			
Quest: Fractions Y6A3			
Learning Journey	Steps	Content	Detail
Add and subtract fractions	1	Adding and subtracting proper fractions with related denominators and answers less than 1 whole	 add and subtract proper fractions where the denominators are related model and represent strategies, including using diagrams and written representations use knowledge of equivalence to simplify answers when adding and subtracting fractions
	2	Adding and subtracting proper fractions with unrelated denominators and answers less than 1 whole	 add and subtract proper fractions where the denominators are unrelated model and represent strategies, including using diagrams and written representations use knowledge of equivalence to simplify answers when adding and subtracting fractions
Add fractions	1	Adding fractions, including mixed numbers, with related denominators	 add fractions, including mixed numbers, where the denominators are related convert an answer that is an improper fraction to a mixed number use knowledge of equivalence to simplify answers when adding fractions recognise that improper fractions may sometimes make calculations involving mixed numbers easier
	2	Adding fractions and mixed numbers with unrelated denominators	 add fractions, including mixed numbers, where the denominators are unrelated by finding common denominators model and represent strategies, including using diagrams and written representations convert an answer that is an improper fraction to a mixed number use knowledge of equivalence to simplify answers when adding fractions recognise that improper fractions may sometimes make calculations involving mixed numbers
Subtract fractions	1	Subtracting fractions, including mixed numbers, with related denominators	 subtract fractions, including mixed numbers, where the denominators are related convert an answer that is an improper fraction to a mixed number use knowledge of equivalence to simplify answers when subtracting fractions recognise that improper fractions may sometimes make calculations involving mixed numbers easier
	2	Subtracting fractions and mixed numbers with unrelated denominators	 subtract fractions, including mixed numbers, where the denominators are unrelated by finding common denominators model and represent strategies, including using diagrams and written representations convert an answer that is an improper fraction to a mixed number use knowledge of equivalence to simplify answers when subtracting fractions recognise that improper fractions may sometimes make calculations involving mixed numbers easier



Understanding Practice and Fluency (UPF)

Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions			
Quest: Fractions Y6A3			
Learning Journey	Steps	Content	Detail
Mixed addition and subtraction	1	Adding and subtracting fractions including mixed numbers, with related denominators	 add and subtract fractions where the denominators are related use knowledge of equivalence to simplify answers when adding and subtracting fractions where the answer is greater than 1 convert the fraction to a mixed number
	2	Adding and subtracting fractions and mixed numbers with unrelated denominators	 add and subtract fractions, including mixed numbers, where the denominators are unrelated by finding common denominators model and represent strategies, including using diagrams and written representations convert an answer that is an improper fraction to a mixed number use knowledge of equivalence to simplify answers when adding and subtracting fractions recognise that improper fractions may sometimes make calculations involving mixed numbers easier
	3	Solving word problems involving fractions and mixed numbers with the unrelated denominators	 solve word problems involving the addition and subtraction of fractions with unrelated denominators
Multiply simple	pairs of	proper fractions, writing the an	swer in its simplest form [for example 1/4 x 1/2 = 1/8]
		Quest: Fracti	ons Y6A3
Multiply fractions by integers	1	Multiplying proper fractions by whole numbers using models and diagrams	 apply and extend previous understandings of multiplication to multiply a fraction by a whole number supported by models and/or diagrams, eg 2/5 × 3 = 2/5 + 2/5 + 2/5 = 6/5 = 1 1/5 use repeated addition to multiply simple fractions by whole numbers, eg 2/5 × 3 = 2/5 + 2/5 + 2/5 = 6/5 = 1 1/5 develop a rule for multiplying simple fractions by whole numbers, eg 2/5 × 3 = 2 × 3 /5 = 6/5 = 1 1/5 solve word problems involving multiplication of fractions by whole numbers, including area and length problems
	2	Multiplying mixed numerals by whole numbers using models and diagrams	 convert the mixed numeral to an improper fraction and then multiply by a whole number supported by models and/or diagrams, eg 1 and 2/3 x 6 as 5/3 x 6 = 30/3 or 10 solve word problems involving multiplication of fractions by whole numbers, including area and length problems
Multiply fractions by fractions	1	Multiplying proper fractions	 determine the effect of multiplying by a number with magnitude less than 1 multiply proper fractions using written methods demonstrate multiplication of a fraction by another fraction using a diagram to illustrate the process solve problems involving multiplying fractions in context calculate fractions of quantities using mental or written strategies



Understanding Practice and Fluency (UPF)

Divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$]			
Quest: Fractions Y6A3			
Learning Journey	Steps	Content	Detail
	1	Dividing a unit fraction by a positive integer	• divide unit fractions by whole numbers, eg $1/3 \div 2 = 1/6$
Divide fractions by integers	2	Dividing a proper fraction by a positive integer	 divide a non-unit proper fraction by a whole number (where the divisor is a factor of the numerator). Use diagrams for support divide a non-unit proper fraction by any whole number
Four rules with fractions	1	Solving word problems involving fractions and mixed numbers with the related denominators	 solve word problems involving the addition and subtraction of fractions where 1 denominator is the same as, or a multiple of, the other
	2	Calculating 2-step problems involving fractions and 1-digit numbers using the four operations (no grouping symbols)	 combine the four operations when calculating fractions with related denominators using models, eg, 3 1/3 + 1/3 2 =
	3	Calculating 2-step problems involving fractions and 1-digit numbers using the four operations (grouping symbols)	• combine the four operations when calculating fractions with related denominators using models, eg, $(2/3 + 2/9) \div 4 = 2/9$
Associate a fr	action v	vith division and calculate decir simple fraction [fo	mal fraction equivalents [for example, 0.375] for a r example, 3/8]
		Quest: Fracti	ons Y6A3
Fraction of an amount	1	Calculating fractions of amounts using bar models not exceeding 1,000 (denominators 3–12)	 calculate the unit fraction of amounts using bar models, eg, 1/5 of 600 = ? calculate the whole amount from a proper fraction of amounts using bar models, eg 11/5 of 240 = ?
		Quest: Fracti	ons Y6A3
Fraction of an amount - find the whole	1	Calculating the whole from the known value of a fraction using bar models (denominators 3–12)	 calculate the whole from the known value of a unit fraction using bar models, eg, 1/3 of ? = £60 calculate the whole from the known value of a proper fraction of amounts using bar models, eg 3/4 of ? = 36



Understanding Practice and Fluency (UPF)

Geometry - Position and direction

Describe positions on the full coordinate grid (all four quadrants)				
	Quest: Position and direction Y6A4			
Learning Journey	Steps	Content	Detail	
The first quadrant	1	Using the Cartesian coordinate system in the first quadrant only	 recognise that the axes are labelled x and y locate and plot points on a Cartesian plane 	
	2	Finding the missing coordinate of a figure	 find the missing coordinate of a figure with a coordinate grid find the missing coordinate of a figure coordinates only 	
Four quadrants	1	Introducing the Cartesian coordinate system	 recognise that the Cartesian plane consists of a horizontal axis (x-axis) and a vertical axis (y-axis), creating 4 quadrants recognise that the horizontal axis and the vertical axis meet at right angles identify the point of intersection of the 2 axes as the origin, having coordinates (0, 0) 	
	2	Locating points on the Cartesian plane	 plot and label points, given coordinates, in all 4 quadrants of the Cartesian plane identify and label each quadrant on a Cartesian plane plot a sequence of coordinates to create a picture identify and record the coordinates of given points in all 4 quadrants of the Cartesian plane recognise that the order of coordinates is important when locating points on the Cartesian plane, eg, (2, 3) is a location different from (3, 2) 	
	3	Drawing polygons in the coordinate grid given coordinate for the vertices	 draw polygons in the coordinate grid given coordinates for the vertices 	
Draw a	nd tran	slate simple shapes on the coor	dinate plane, and reflect them in the axes	
		Quest: Position and	direction Y6A4	
Translations	1	Plotting translations of points on the Cartesian plane	 plot and state the coordinates of the image of a point on the Cartesian plane resulting from 1 or more translations 	
	2	Plotting the transformations of shapes on the Cartesian plane	 plot the position of the image of a given shape on the Cartesian plane resulting from a one-step translation, reflection in the x-axis or y-axis, or rotation about the origin by a multiple of 90° plot the position of the image of a given shape on the Cartesian plane resulting from a combination of translations, reflections in the x-axis or y-axis, and rotations about the origin by a multiple of 90° explore and describe different combinations of transformations that produce the same image of a given shape 	
Reflections	1	Plotting and stating the coordinates of the image of a given point on the Cartesian plane resulting from reflection in either the x-axis or y-axis	 plot and state the coordinates of the image of a given point on the Cartesian plane resulting from reflection in either the x-axis or y-axis investigate and describe the relationship between the coordinates of P and P' following a reflection in the x- or y-axis 	
	2	Plotting points reflected in any line on the Cartesian (number) plane	 plot and state the coordinates of the image of a given point on the Cartesian plane resulting from reflection in any line in the number plane 	



Understanding Practice and Fluency (UPF)

100 and 1,000 giving answers up to 3 decimal places, multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places			
Quest: Decimals Y6Sp1			
Learning Journey	Steps	Content	Detail
Three decimal places	1	Introducing decimal thousandths	 recognise that the place value system can be extended beyond hundredths express thousandths as decimals interpret decimal notation for thousandths, eg, 0.123 = 123/1,000 state the place value of digits in decimal numbers of up to 3 decimal places model thousandths using concrete materials represent decimal fractions, eg, as fractions (tenths, hundredths and thousandths), using concrete materials and in diagrams
	2	Partitioning decimal thousandths	 use place value to partition decimals of up to 3 decimal places partition decimals of up to 3 decimal places in non-standard forms partition fractions up to thousandths into decimals and fractions
	1	Multiplying decimals by 10	 use PV equipment to multiply decimals by 10 recognise that the digits move one place to the left use zero as a place holder
Multiply by 10, 100 and 1.000	2	Multiplying decimals by 100	 recognise that the digits move two places to the left use zero as a place holder use PV equipment to multiply decimals by 100
	3	Multiplying decimals by 1,000	 recognise that the digits move three places to the left use zero as a place holder use PV equipment to multiply decimals by 1,000
	4	Multiplying decimals by 10, 100, 1,000	• multiply decimals by 10, 100, 1,000
Divide by 10, 100 and 1,000	1	Dividing decimals by powers of 10	 use PV equipment to divide decimals by 10 recognise that the digits move one place the right use zero as a place holder
	2	Dividing decimals by powers of 100	 use PV equipment to divide decimals by 100 recognise that the digits move two places the right use zero as a place holder
	3	Dividing decimals by powers of 1,000	 use PV equipment to divide decimals by 100 recognise that the digits move three places to the right use zero as a place holder

Understanding Practice and Fluency (UPF)

Fractions (including decimals and percentages) – Sp

Multiply 1-digit numbers with up to 2 decimal places by whole numbers				
Quest: Decimals Y6Sp1				
Learning Journey	Steps	Content	Detail	
Multiply decimals by integers	1	Representing multiplication of decimals to tenths and whole numbers using objects and pictorial models, including area models	 represent multiplication of decimals to tenths and whole numbers using objects and pictorial models, including area models 	
	2	Representing multiplication of decimals or decimals and whole numbers with products to the tenths using objects and pictorial models, including area models	 represent multiplication of decimals with products to the tenths using objects and pictorial models, including area models 	
	3	Representing multiplication of decimals with products to the hundredths using objects and pictorial models, including area models	 represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models 	
	4	Multiplying tenths and whole numbers using mental strategies	 use efficient mental strategies to multiply tenths and whole numbers use efficient mental strategies to multiply hundredths and whole numbers 	
	5	Multiplying decimals using written method	 multiply decimals up to thousandths using a standard algorithm 	
Usev	written	division methods in cases wher	e the answer has up to 2 decimal places	
		Quest: Decim	als Y6Sp1	
Divide decimals by integers	1	Dividing whole numbers and decimals of up to 2 decimal places using mental strategies	 divide decimals by a one-digit whole number where the result is a terminating decimal, eg 5.25 ÷ 5 = 1.05 solve word problems involving the division of decimals, including those involving money use estimation and rounding to check the reasonableness of answers when dividing decimals 	
	2	Dividing decimals using written method	 divide decimals up to thousandths using a standard algorithm 	
Division to solve problems	1	Applying understanding of division to solve problems involving up to 2 decimal places using models	 apply understanding of division to solve problems involving up to 2 decimal places using models, eg, bar model 	
	1	Comparing decimal fractions up to 2 decimal places	 compare numbers with a different number of decimal places up to 2 decimal places using >, < and = 	
Decimals as fractions	2	Connecting decimal fractions to common fractions	• understand the relationship between decimal fractions and common fractions	
	3	Relating fractions and decimals up to 3 decimal places	 find an equivalent fraction with denominators of 10, 100 or 100 to convert from fractions to decimals 	

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Understanding Practice and Fluency (UPF)

Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]					
	Quest: Decimals Y6Sp1				
Learning Journey	Steps	Content	Detail		
Fractions to decimals	1	Knowing common fraction and decimal equivalences	 know fraction and decimal equivalences for thirds, quarters, fifths and eighths 		
	2	Connecting decimals to equivalent fractions where the denominator is 10, 100 or 1,000	connect decimals to equivalent fractions		
	3	Converting simple fractions to decimals using place value models and short division	 convert simple fractions into decimals using short division and knowledge of tens, eg, 5/8 =5.0 ÷ 8 or 50 tenths divided by 8 = 0.625 		
Recall and use	equival	ences between simple fractions contex	s, decimals and percentages, including in different kts.		
		Quest: Percent	ages Y6Sp2		
Fractions to percentages	1	Representing simple fractions as percentages	 represent simple fractions as percentages and vice versa model percentages with concrete materials/ drawings, eg using 10x10grid 		
	2	Representing common fractions as percentages	 represent common fractions as percentages and vice versa model percentages with concrete materials/ drawings, eg using 10x10grid 		
	3	Converting common fractions to percentages using mental strategies	• use mental strategies to convert fractions to percentages		
	1	Representing percentages and decimals	 write decimals (< 1) to 2 decimal places as percentages model percentages and decimals using diagrams, eg number line or 100 grid write decimals as percentages and vice versa 		
Equivalent FDP	2	Representing common equivalent fractions, decimals and percentages	 recall the relationships between decimals, percentages and fractions with denominators of 2, 4, 5, 10, 20, 25, 50 and 100 recognise fractions, decimals and percentages as different representations of the same value interpret and explain the use of fractions, decimals and percentages in everyday contexts relate equivalence to proportion 		
	3	Representing equivalent fractions, decimals and percentages	 write percentages as fractions in their simplest form write fractions with denominators that are factors of 100 as percentages by multiplying the numerator and denominator by a common value write fractions with denominators that are not factors of 100 as percentages by writing as a decimal first, eg using short division, then x100 to write as a percentage write percentages as decimals and vice versa represent equivalent fractions, decimals and percentages select and justify the most appropriate representation of a quantity — fraction, decimal, percentage 		



Understanding Practice and Fluency (UPF)

Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.				
		Quest: Percent	ages Y6Sp2	
Learning Journey	Steps	Content Detail		
Order FDP	1	Comparing and ordering fractions, decimals and percentages (halves thirds, quarters, fifths, tenths)	 compare and order fractions, decimals and percentages using <, >, = 	
	1	Calculating simple percentages	 estimate 0%, 1%, 10%, 25%, 50% and 100% of an amount including examples in context (exclude discounts), explain estimation model 10%, 25% and 50% of an amount calculate 10%, 25% and 50% of an amount including examples in context (exclude discounts) 	
Percentage of an	2	Using 50%, 10% and 1% to mentally calculate amounts	 use 50%, 10%, and 1% as strategies to mentally calculate amounts 	
amount	3	Calculating with percentages	 find percentages of quantities calculate percentages of quantities using mental, written and calculator methods and explain methods choose an appropriate equivalent form for mental computation of percentages of quantities express 1 quantity as a percentage of another, using mental, written and calculator methods 	
Percentages - missing values	1	Solving problems using complementary percentages	solve problems using complementary percentages	

Understanding Practice and Fluency (UPF)

Algebra

Use simple formulae				
Quest: Algebra Y6Sp3				
Learning Journey	Steps	Content	Detail	
Find a rule - one step	1	Interpreting and creating number patterns involving 1 operation in the term-to-term rule	 complete number patterns involving one operation describe the pattern in a variety of ways and record descriptions in words, eg 'It goes up by ones, starting from four' interpret explanations written by peers and teachers that accurately describe number patterns use the rule to predict the next few terms and predict whether a particular value will be in the pattern find missing terms in the number sequence 	
		Quest: Algeb	ra Y6Sp3	
Find a rule - two step	1	Interpreting and creating a table of values for number patterns involving 2 operations	 "complete a table of values resulting from patterns involving 2 operations " describe the pattern in a variety of ways and record descriptions in words interpret explanations written by peers and teachers that accurately describe shape and number patterns use the rule to predict the next few terms and predict whether a particular value will be in the pattern 	
		Generate and describe line	ear number sequences	
Quest: Algebra Y6Sp3				
Forming expressions	1	Developing and representing the general term of a linear growing pattern	 develop and represent the general term of a linear growing pattern, using algebraic expressions involving 1 operation, eg the general term for the sequence 4, 5, 6, 7, can be written algebraically as n + 3, where n represents the term number;- the general term for the sequence 5, 10, 15, 20, can be written algebraically as 5n, where n represents the term number 	
		Express missing number p	problems algebraically	
		Quest: Algeb	ra Y6Sp3	
Substitution	1	Substituting and finding unknown values represented by letters (values within 10)	 give general algebraic descriptions of the relationship between terms and its position in a sequence and justify the solution generalise a pattern arising from a problem-solving context, using a linear equation, and verify by substitution 	
Formulae	1	Solving problems by substituting into formulas	 solve problems by substituting into formulas, eg, the rule for making a cake is 'use 3 times as much flour (f) as butter (b). Which is the correct formula?' 	
Forming	1	Writing 1-step equations using variables (four operations)	 write 1-step equations using variables to represent a word problem (four operations), eg, 5 + y = 8 	
equations	2	Writing 1-step expressions using variables (four operations)	 write 1-step expressions using variables to represent a word problem (four operations) eg 5 + y 	

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Understanding Practice and Fluency (UPF)

Algebra

Find pairs of numbers that satisfy an equation with two unknowns					
Quest: Algebra Y6Sp3					
Learning Journey	Steps	Content	Detail		
Solve simple one-	1	Matching 1-step equations to bar model representation	• match 1-step equations to bar model representation		
step equations	2	Solving 1-step equations using bar models	• solve 1-step equations using bar models		
Solve two-step	1	Matching 2-step equations to bar model representation	• match 2-step equations to bar model representation		
equations	2	Solving 2-step equations using bar models	• solve 2-step equations using bar models		
	Enumerate possibilities of combinations of two variables.				
		Quest: Algeb	ra Y6Sp3		
Find pairs of values	1	Finding values of a pair of variables using the four operations (positive whole numbers only)	 find values of a pair of variables eg, a + b = 6 		
	2	Finding values of a pair of variables involving 2-step calculations using the four operations (positive whole numbers only)	 find values of a pair of variables involving 2-step calculations eg, 7x + 4 = y 		

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Understanding Practice and Fluency (UPF)

Measurement

Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places

Quest: Converting Units Y6Sp4							
Learning Journey	Steps	ps Content Detail					
Metric measures	1	 Recognising suitable metric measures for length, mass and capacity recognise the most appropriate unit of measure (cm, km, g, tonnes, ml, mm, l) recognise the most appropriate measurement eg 5 m 5cm, 5m, 5km (including simple fractions and decima) 					
Convert metric	1	Converting between metric units of mass up to 3 decimal places using knowledge of multiplying and dividing by 10, 100 and 1,000	 convert between measures of length, mass and capacity using a table 				
measures	2	Comparing mixed metric units of mass up to 3 decimal places	compare measures of length, mass and capacity				
	3	Ordering mixed metric units of mass up to 3 decimal places	order measures of length, mass and capacity				
Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate							
		Quest: Converting	g Units Y6Sp4				
Calculate with metric measures	1	Solving measurement problems where conversion is required for all metric units • solve measurement problems where conversion is required for all metric units					
		Convert between mil	es and kilometres				
Miles and kilometres	1	Converting between imperial and metric units of length (miles and kilometres)	 convert between imperial and metric units of length (miles and kilometres) including real-world examples 				
	1	Converting between imperial units of length (feet and inches)	 convert between imperial units of length (feet and inches) including real-world examples 				
	2	Converting between imperial units of mass (pounds and ounces)	 convert between imperial units of mass (pounds and ounces) including real-world examples 				
Imperial measures	3	Converting between imperial units of mass (stone and pounds)	 convert between imperial units of mass (stone and pounds) including real-world examples 				
	4	Converting between imperial units of capacity (gallons and pints)	 convert between imperial units of capacity (gallons and pints) including real-world examples 				
	5	Converting between imperial and metric units of length (inches and centimetres)	 convert between imperial and metric units of length (inches and centimetres) including real-world examples 				

Understanding Practice and Fluency (UPF)

Measurement

Recognise that shapes with the same areas can have different perimeters and vice versa				
Quest: Perimeter, area and volume Y6Sp5				
Learning Journey	Steps	Content	Detail	
Shapes - same area	1	Exploring rectilinear shapes with the same area	sort rectilinear shapes with the same areadraw rectilinear shapes with the same area	
F	Recognis	se when it is possible to use for	mulae for area and volume of shapes	
		Quest: Perimeter, area	and volume Y6Sp5	
Area and perimeter	1	Calculating the area and perimeter of rectilinear shapes	calculate the area and perimeter of rectilinear shapes	
		Calculate the area of paral	lelograms and triangles	
		Quest: Perimeter, area	and volume Y6Sp5	
Area of a triangle (1)	1	Estimating the area of a triangle by counting the number of squares (cm2)	• estimate the area of a triangle by counting the number of squares (cm2)	
Area of a triangle (2)	1	Calculating area of a right-angled triangle without a formula	 establish that the area of a right-angled triangle is half the area of a rectangle with the same base and perpendicular height calculate the area of right-angled triangles using the relationship that the area is half the area of a rectangle with the same base and perpendicular height calculate the area of right-angled triangles where all three side lengths are given, using the relationship that the area is half the area of a rectangle with the same base and perpendicular height 	
	2	Applying the formula to find the areas of right-angled triangles	 apply the formula to find the areas of right-angled triangles 	
Area of a triangle (3)	1	Applying the formula for the area of a triangle	 use and apply the formula for the area of a triangle establish the formula for the area of a triangle, A = ½ × b × h (also A = ½ bh) apply the formula to find the areas of right-angled triangles apply the formula to find the areas of triangles in which the perpendicular height meets the base within the length of the base apply the formula to find the areas of triangles in which the perpendicular height meets the base outside the length of the base 	
Area of a parallelogram	1	Finding the area of a parallelogram using a formula	 apply the formula to find the area of parallelograms in different orientations apply the formula to find the area of parallelograms in different orientations which include more dimensions than are necessary to calculate the area 	
	2	Solving real-life problems involving calculating the area of parallelograms	 solve real-life problems involving calculating the area of parallelograms 	

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Understanding Practice and Fluency (UPF)

Measurement

Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm ³ , m ³ and extending to other units (mm ³ and km ³).			
Quest: Perimeter, area and volume Y6Sp5			
Learning Journey	Steps	Content	Detail
Volume - counting cubes	1	Introducing formal units for volume: cubic metres	 recognise the need for a formal unit larger than the cubic centimetre construct and use the cubic metre as a unit to measure larger volumes explain why volume is measured in cubic metres in certain situations, eg wood bark, soil or concrete ;- select and justify referents for cubic cm recognise that a cubic metre can have dimensions other than a cube of side 1 metre record volumes using the abbreviation for cubic metres (m³) estimate the size of a cubic metre, half a cubic metre and 2 cubic metres
	2	Estimating volumes using cubic metres and cubic centimetres as referents	 make appropriate estimations of volumes using cubic metres and cubic centimetres as referents
	3	Calculating, estimating and comparing volumes of cubes and cuboids	 estimate, calculate and compare volumes of cubes and cuboids using standard units including mm³ and km³
	Measuring the volumes of 4 rectangular containers by packing them with cubic-centimetre blocks		 measure the volumes of rectangular containers by packing them with cubic-centimetre blocks understand the advantages and disadvantages of using cubic-centimetre blocks as a unit to measure volume describe arrangements of cubic-centimetre blocks in containers in terms of layers, eg 5 layers of 8 cubic-centimetre blocks
	1	Developing the formula for the volume of a cube and cuboid	• develop the formula for the volume of a cube and cuboid
Volume of a cuboid	2	Finding the volume of a cube and cuboid using a formula	 find the volume of a cube and cuboid using a formula given its length, width or height find the length of a cube and cuboid given its volume



Understanding Practice and Fluency (UPF)

Ratio and proportion

integer multiplication and division facts			
Quest: Ratio Y6Sp6			
Learning Journey	Steps	Content	Detail
Using ratio language	1	Introducing the language of ratio	• use the language of ratio
Ratio and fractions	1	Introducing simple ratios	 use ratios to compare quantities measured in the same units represent ratios found in real-life contexts, using concrete materials, drawings, and standard fractional notation write ratios using the : symbol express 1 part of a ratio as a fraction of the whole
	1	Defining ratios	 define ratios understand the symbol :
Introducing the	2	Representing ratios using a bar model	 represent ratios using a bar model eg, 2:3:4 pink:yellow:blue. What fraction of the bar is pink?
5	3	Representing ratios between quantities found in real-life contexts, using concrete materials	represent ratios found in real-life contexts, using concrete materialswrite ratios using the : symbol
Solve probler	ns invol	ving unequal sharing and group	oing using knowledge of fractions and multiples.
		Quest: Ratio	o Y6Sp6
Calculating ratio	1	Calculating ratios from word problems	calculate ratios from word problems
Solve p	roblem	s involving similar shapes where	e the scale factor is known or can be found
		Quest: Ratio	o Y6Sp6
Using scale factors	1	Drawing 2D shapes with a scale factor up to 5	 draw 2D shapes with a scale factor up to 5 expressing enlargements of a 2D shape using the term scale factor
Calculating scale factors	1	Calculating scale factors of similar shapes	• calculate scale factors of similar shapes
Ratio and	1	Solving real world ratio problems using bar models	solve real-world ratio problems using bar models
problems	2	Solving real world proportion problems using bar models	solve real-world proportion problems using bar models

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Understanding Practice and Fluency (UPF)

Statistics

Interpret and construct pie charts and line graphs and use these to solve problems			
Quest: Statistics Sp7a			
Learning Journey	Steps	Content	Detail
Read and interpret line graphs	1	Interpreting primary and secondary data in a line graph	 interpret line graphs using the scales on the axes describe and interpret data presented in line graphs identify and describe relationships that can be observed in data displays
Draw line graphs and solve problems	1	Constructing a line graph using a scale of many-to-one correspondence	 construct a line graph using a scale of many-to-one correspondence, with and without the use of digital technologies name and label the horizontal and vertical axes when constructing graphs choose an appropriate title to describe the data represented in a data display determine an appropriate scale of many-to-one correspondence to represent the data in a data display mark equal spaces on the axes when constructing graphs, and use the scale to label the markers interpret data in line graph representing primary data;- ask and answer questions related to the data in the display;- draw conclusions
Illustrate and	name p	barts of circles, including ra diameter is	dius, diameter and circumference and know that the twice the radius
		Quest: S	tatistics Sp7b
Circles	1	Introducing parts of a circle: centre, radius, diameter and circumference	 identify and name parts of circles create a circle by finding points that are all the same distance from a fixed point
Read and interpret pie charts	1	Introducing pie charts (no percentages)	 become familiar with the structure of a pie chart;- identify the key features of pie charts read and interpret a pie chart using whole numbers and a simple key;- make simple comparisons between categories, eg' There are 2 times as many children who play tennis than soccer' or 'Horror movies are the most popular category' compare pie charts to other displays
	2	Representing data in a simple pie chart (no percentages)	 complete a given pie chart using given or collected data with a selected number of responses interpret data in a pie chart; ask and answer questions related to the data in the display; draw conclusions
	3	Interpreting pie charts	 interpret pie charts using proportional reasoning and percentages find the whole from the parts and vice versa ask and answer comparison questions;- make conclusions;-identify data values
	4	Solving problems using pie charts	 use proportional reasoning and the 4 operations to solve problems related to data in a pie chart

Understanding Practice and Fluency (UPF)

Statistics

Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius				
Quest: Statistics Sp7b				
Learning Journey	Steps	Content	Detail	
Pie charts with percentages	1	Reading and interpreting pie charts with simple percentages	 read data in a pie chart segmented into tenths and with one-to-one correspondence; relate responses to percentages interpret data in a pie chart; ask and answer questions related to the data in the display; draw conclusions identify the whole from the parts and vice versa in a pie chart where each category value is a percentage that is a multiple of 10 	
	2	Representing and reading data in a pie chart with simple percentages	 represent data in a pie chart segmented into tenths using given or collected data with 20 responses; include a key, suitable category labels and appropriate title relate and represent data in a pie chart as percentages interpret data in a pie chart; ask and answer questions related to the data in the display; draw conclusions 	
Draw pie charts	1	Constructing pie charts	 construct pie charts using proportional reasoning and represent sectors as percentages use knowledge of protractors and angles to construct pie charts;- include a suitable title, labels and key ask and answer questions related to data in the pie chart;- draw conclusions 	
		Calculate and interpre	et the mean as an average.	
		Quest: S	tatistics Sp7c	
The mean	1	Understanding the mean	 explore a set of values in data displays and in lists with the aim of summarising all of the values with a single number calculate the mean for a small set of data that would produce a whole number use the mean to describe the shape of the data set across its range of values, using charts, tables, and graphs (eg, 'The data values fall mainly into two groups on both sides of the mean.';-'The set of data is not spread out evenly around the mean.') decide if the mean is the best representative number for the centre of the data set:- justify and discuss 	

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Understanding Practice and Fluency (UPF)

Geometry - Properties of shapes

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.				
Quest: Properties of shape Y6Su1				
Learning Journey	Steps	Content	Detail	
Introduce angles	1	Investigating and relating right angles in other contexts	 investigate right angles and degrees in right angles eg, 90° in a right angle, 180° in a straight line make links between number of right angles and quarter, half, three quarter and whole turns apply to different contexts including on a clock and a compass 	
	1	Exploring adjacent angles that form a right angle	 explore the relationship between angles that form a right angle calculate an unknown angle within a right angle given the other parts 	
Calculate angles	2	Exploring adjacent angles that form a straight angle	 explore the relationship between angles that form a straight angle calculate an unknown angle within a straight angle given the other parts 	
	3	Exploring adjacent angles that form an angle of revolution	 explore the relationship between angles that form an angle of revolution calculate an unknown angle within an angle of revolution given the other parts 	
Vertically opposite angles	1	Exploring vertically opposite angles	 explore the relationship between angles formed when 2 straight lines intersect and identify these as 'vertically opposite angles' use the equality of vertically opposite angles to find the size of unknown angles in diagrams use the equality of vertically opposite angles to find the size of unknown angles represented by variables in diagrams 	
Compare and classify geometric shapes based on their properties and sizes and find unknown angles in				
		Ques	st: Properties of shape Y6Su1	
Angles in a triangle	1	Calculating sum of interior angles of a triangle	 explore through measurement the sum of interior angles of a triangle calculate an unknown angle represented by a variable within a triangle, given the other 2 angles 	
Angles in a triangle - special cases	1	Exploring and proving the interior angle sum of a triangle	 explore, through measurement, the sum of interior angles of a triangle investigate the sum of the angles in a triangle using digital technology calculate an unknown angle represented by a variable within a triangle, given the other 2 angles 	
Angles in a triangle - missing angles	1	Exploring angles in equilateral triangles	 determine that all angles in an equilateral triangle of any size must be 60° prove a triangle is equilateral using angle measurements prove a triangle is not equilateral using angle measurements explore, through measurement, the relationship between the base angles of an isosceles triangle determine an unknown base angle represented by a variable within an isosceles triangle given another base angle calculate the non-base angle represented by a variable within an isosceles triangle given 1 of the base angles, the relationship between the base angles and the angle sum of the triangle calculate the base angle represented by a variable within an isosceles triangle given 1 of the base angles, the relationship between the base angles and the angle sum of the triangle 	



Understanding Practice and Fluency (UPF)

Geometry - Properties of shapes

Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons				
	Quest: Properties of shape Y6Su1			
Learning Journey	Steps	Content	Detail	
Angles in quadrilaterals	1	Exploring interior angles of special quadrilaterals	 use knowledge of properties of shapes to understand the sum of the interior angles in any quadrilateral is 360 degrees identify missing angles in various quadrilaterals (rectangle, square, rhombus, parallelogram, trapezium, kite) 	
Angles in regular polygons	1	Exploring interior angles in regular polygons	 explore the relationship between splitting a polygon into triangles and the sum of the interior angles of the polygon identify patterns in a table of features related to polygons showing number of sides and number of triangles which can be formed 	
	Recog	nise, describe and	build simple 3D shapes, including making nets	
		Ques	t: Properties of shape Y6Su1	
Draw nets of 3-D shapes	1	Connecting 3D shapes with their nets	 examine a diagram to determine whether it is or is not the net of a closed 3D shape explain why a given net will not form a closed 3D shape visualise and sketch nets for given 3D shapes recognise whether a diagram is a net of a particular 3D shape visualise and name prisms and pyramids, given diagrams of their nets select the correct diagram of a net for a given 3D shape (include other regular polyhedrons) 	



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