Mathletics White Rose Maths (WRM)

Skill Quests





May, 2022

Years 3 – 6

Mathletics

WRM Program of Studies Skill Quests May 2022

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Grade 3

1 Number and Place Value

Outcome	Quests	Content
Count from 0 in multiples of 4, 8, 50	Place value A1a	Hundreds
and 100; find 10 or 100 more or		
less than a given number		
Identify, represent and estimate	Place value A1b	Numbers to 1,000
numbers using different		
representations		
Recognise the place value of each	Place value A1c	100s, 10s and 1s
digit in a 3-digit number (100s, 10s,		
1s)		
Count from 0 in multiples of 4, 8, 50	Place value A1d	Number line to 1,000
and 100; find 10 or 100 more or		Find 1, 10 or 100 more or less
less than a given number		than a number
Compare and order numbers up to	Place value A1e	Compare objects to 1,000
1,000		Compare numbers to 1,000
		Order numbers
Count from 0 in multiples of 4, 8, 50	Place value A1f	Count in 50s
and 100; find 10 or 100 more or		
less than a given number		

2 Addition and Subtraction

Outcome	Quests	Content
Add and subtract numbers	Addition and	Add and subtract multiples of
mentally, including: a three-digit	subtraction A2a	100
number and 1s, a three-digit		Add/subtract 3 and 1-digit
number and 10s, a three-digit		numbers-not crossing 10
number and 100s		Add 3-digit and 1-digit
		numbers - crossing 10
		Subtract 1-digit number from
		3-digit - crossing 10
		Add/subtract 3- & 2-digit
		numbers-not crossing 100
		Add 3-digit and 2-digit
		numbers - crossing 100
		Subtract 2 and 3-digit
		numbers - crossing 100
		Add and subtract 100s
		Spot the pattern - making it
		explicit
Add and subtract numbers with up	Addition and	Add/subtract 2/3-digit
to 3 digits, using formal written	subtraction A2b	numbers-not crossing 10/100
methods of columnar addition and		Add 2 and 3-digit numbers -
subtraction		crossing 10 or 100
		Subtract 2-digits from 3-digits
		crossing 10 or 100
		Add two 3-digit numbers - not
		crossing 10 or 100
		Add two 3-digit numbers -
		crossing 10 or 100
		Subtract 3-digit numbers - no
		exchange
		Subtract 3-digit numbers -
		exchange
Estimate the answer to a	Addition and	Estimate answers to
calculation and use inverse	subtraction A2c	calculations
operations to check answers		
Solve problems, including missing	Addition and	Using bar models to represent
number problems, using number	subtraction A2d	problems
facts, place value, and more		
complex addition and subtraction		

3 Multiplication and Division — A

Outcome	Quests	Content
Recall and use multiplication and	Multiplication and	Multiplication – equal groups
division facts for the 3, 4 and 8	division A3	Multiply by 3
multiplication tables		Divide by 3
		The 3 times-table
		Multiply by 4
		Divide by 4
		The 4 times-tables
		Multiply by 8
		Divide by 8
		The 8 times-table

4 Multiplication and Division — Sp

Outcome	Quests	Content
Write and calculate mathematical	Multiplication and	Comparing statements
statements for multiplication and	division Sp1a	Related calculations
division using the multiplication tables that they know, including for		Multiply 2-digits by 1-digit (not bridging 10)
two-digit numbers times one-digit numbers, using mental and		Multiply 2-digits by 1-digit (bridging 10)
progressing to formal written		Divide 2-digit by 1-digit-no
methods		exchange or remainder
		Divide 2-digit by 1-digit-
		exchange, no remainder
		Divide 2-digits by 1-digit (with a remainder)
Solve problems, including missing	Multiplication and	Scaling
number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are	division Sp1b	How many ways?
connected to m objects		

5 Measurement — Sp(1)

Outcome	Quests	Content
Add and subtract amounts of	Money Sp2	Pounds and pence
money to give change, using both £		Convert pounds and pence
and p in practical contexts		Add and subtract money
		Give change

Statistics

Outcome	Quests	Content
Interpret and present data using	Statistics Sp3	Pictograms
bar charts, pictograms and tables		Bar charts
		Tables

7 Measurement — Sp(2)

Outcome	Quests	Content
Measure, compare, add and	Length Sp4	Measure length
subtract: lengths (m/cm/mm); mass		Equivalent lengths - m and cm
(kg/g); volume/capacity (l/ml)		Equivalent lengths - mm and
		cm
		Compare lengths
		Add and subtract lengths
Measure the perimeter of simple 2-	Perimeter Sp4	Measure perimeter
D shapes		Calculate perimeter

8 Fractions, Decimals and Percentages — Sp

Outcome	Quests	Content
Recognise and use fractions as	Fractions Sp5a	Unit and non-unit fractions
numbers: unit fractions and non-		Making the whole
unit fractions with small		
denominators		
Count up and down in tenths;	Fractions Sp5b	Count in tenths
recognise that tenths arise from		Tenths as decimals
dividing an object into 10 equal		Fractions on a number line
parts and in dividing one-digit		
numbers or quantities by 10		
Recognise, find and write fractions	Fractions Sp5c	Fraction of a set
of a discrete set of objects: unit		
fractions and non-unit fractions		
with small denominators		

9 Fractions, Decimals and Percentages — Su

Outcome	Quests	Content
Recognise and show, using	Fractions Su1a	Equivalent fractions
diagrams, equivalent fractions with		
small denominators		
Compare and order unit fractions,	Fractions Su1b	Compare and order fractions
and fractions with the same		
denominators		
Add and subtract fractions with the	Fractions Su1c	Add fractions
same denominator within one		
whole [for example, 5/7 + 1/7 = 6/7]		

10 Measurement — Su(1)

Outcome	Quests	Content
Know the number of seconds in a	Time Su2a	Months and years
minute and the number of days in		Hours in a day
each month, year and leap year		
Estimate and read time with	Time Su2b	Telling the time to 5 minutes
increasing accuracy to the nearest		Telling the time to the minute
minute; record and compare time in		Using a.m. and p.m.
terms of seconds, minutes and		24-hour clock
hours; use vocabulary such as		
o'clock, am/pm, morning, afternoon,		
noon and midnight		
Compare durations of events [for	Time Su2c	Finding the duration
example, to calculate the time		Comparing durations
taken by particular events or tasks]		Start and end times
Estimate and read time with	Time Su2d	Measuring time in seconds
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		

11 Geometry – Properties of Shape

Outcome	Quests	Content
Recognise angles as a property of	Properties of shape	Turns and angles
shape or a description of a turn	Su3a	
Identify right angles, recognise that	Properties of shape	Right angles in shapes
2 right angles make a half-turn, 3	Su3b	Compare angles
make three-quarters of a turn and 4		
a complete turn; identify whether		
angles are greater than or less than		
a right angle		
Identify horizontal and vertical lines	Properties of shape	Draw accurately
and pairs of perpendicular and	Su3c	Horizontal and vertical
parallel lines		Parallel and perpendicular
Draw 2-D shapes and make 3-D	Properties of shape	Recognise and describe 2-D
shapes using modelling materials;	Su3d	shapes
recognise 3-D shapes in different		Recognise and describe 3-D
orientations and describe them		shapes
		Make 3-D shapes

12 Measurement — Su(2)

Outcome	Quests	Content
Measure, compare, add and	Mass Su4	Measure mass using kg & g
subtract: lengths (m/cm/mm); mass		Compare and order mass
(kg/g); volume/capacity (l/ml)		Add and subtract mass
	Capacity Su4	Measure capacity
		Compare capacity
		Add and subtract capacity

Grade 4

1 Number and Place Value

Outcome	Quests	Content
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	Place value A1a	Roman numerals to 100
Round any number to the nearest 10, 100 or 1,000	Place value A1b	Round to the nearest 10 Round to the nearest 100
Count in multiples of 6, 7, 9, 25 and 1,000	Place value A1c	Count in 1,000s Count in multiples of 6, 7, 9, 25 and 1,000
Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	Place value A1d	1,000s, 100s, 10s and 1s Partitioning
Identify, represent and estimate numbers using different representations	Place value A1e	Number line to 10,000
Find 1,000 more or less than a	Place value A1f	1,000 more or less
given number		Compare 4-digit numbers
		Order numbers up to 4-digits
Round any number to the nearest 10, 100 or 1,000	Place value A1h	Round to the nearest 1,000
Count in multiples of 6, 7, 9, 25 and 1,000	Place value A1i	Count in 25s
Count backwards through zero to include negative numbers	Place value A1j	Negative numbers

2 Addition and Subtraction

Outcome	Quests	Content
Add and subtract numbers with up to 4 digits using the formal written	Addition & subtraction A2a	Add and subtract 1s, 10s, 100s and 1,000s
methods of columnar addition and subtraction where appropriate		Add two 4-digit numbers - no exchange
		Add two 4-digit numbers - one exchange
		Add two 4-digit numbers -
		more than one exchange
		Subtract two 4-digit numbers
		- no exchange
		Subtract two 4-digit numbers
		- one exchange
		Subtract two 4-digit number-
		more than one exchange
Estimate and use inverse	Addition & subtraction	Efficient subtraction
operations to check answers to a	A2b	Estimate answers
calculation		
Solve addition and subtraction two-	Addition & subtraction	Checking strategies
step problems in contexts, deciding	A2c	
which operations and methods to		
use and why		

3 Measurement – A

Outcome	Quests	Content
Convert between different units of measure [for example, kilometre to	Length and perimeter A3a	Kilometres
metre; hour to minute]		
Measure and calculate the	Length and perimeter	Perimeter on a grid
perimeter of a rectilinear figure	Y4A3	Perimeter of a rectangle
(including squares) in centimetres		Perimeter of rectilinear shapes
and metres		

4 Multiplication and Division – A

Outcome	Quests	Content
Use place value, known and derived	Multiplication and	Multiply by 10
facts to multiply and divide	division A4a	Multiply by 100
mentally, including: multiplying by 0		Divide by 10
and 1; dividing by 1; multiplying		Divide by 100
together three numbers		Divide by 1 and itself
Recall multiplication and division	Multiplication and	Multiply and divide by 6
facts for multiplication tables up to	division A4b	6 times table and division
12 × 12		facts
		Multiply and divide by 9
		9 times table and division
		facts
		Multiply and divide by 7
		7 times table and division
		facts
Recall multiplication and division	Multiplication and	11 and 12 times tables
facts for multiplication tables up to 12 × 12	division Sp1a	Multiply 3 numbers
Recognise and use factor pairs and	Multiplication and	Factor pairs
commutativity in mental	division Sp1b	Efficient multiplication
calculations		Written methods
Multiply two-digit and three-digit	Multiplication and	Multiply 2-digits by 1-digit
numbers by a one-digit number	division Sp1c	Multiply 3-digits by 1-digit
using formal written layout		Divide 2-digits by 1-digit - no
		remainders
		Divide 2-digits by 1-digit -
		with remainders
		Divide 3-digits by 1-digit
Solve problems involving	Multiplication and	Correspondence problems
multiplying and adding, including	division Sp1d	
using the distributive law to		
multiply two digit numbers by one		
aigit, integer scaling problems and		
nurder correspondence problems		
such as n objects are connected to		
m objects.		

Measurement

Outcome	Quests	Content
Find the area of rectilinear shapes	Area Sp2	What is area?
by counting squares		Counting squares
		Making shapes
		Comparing area

6 Fractions, Decimals and Percentages

Outcome	Quests	Content
Recognise and show, using	Fractions Sp3a	What is a fraction?
diagrams, families of common		Equivalent fractions (1)
equivalent fractions		Equivalent fractions (2)
		Fractions greater than 1
Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10	Fractions Sp3b	Count in fractions
Add and subtract fractions with the	Fractions Sp3c	Add 2 or more fractions
same denominator		Subtract 2 fractions
		Subtract from whole amounts
Solve problems involving increasingly harder fractions to	Fractions Sp3d	Calculate fractions of a quantity
calculate quantities, and fractions to divide quantities, including non- unit fractions where the answer is a whole number		Problem solving - calculate quantities
Recognise and write decimal equivalents of any number of tenths	Decimals Sp4a	Recognise tenths and hundredths
or hundredths	Decimals Sp4b	Tenths as decimals
		Tenths on a place value grid
		Tenths on a number line
Find the effect of dividing a one- or	Decimals Sp4c	Divide 1-digit by 10
two-digit number by 10 and 100,		Divide 2-digit by 10
identifying the value of the digits in the answer as ones, tenths and hundredths		Hundredths
Recognise and write decimal	Decimals Sp4d	Hundredths as decimals
equivalents of any number of tenths or hundredths		Hundredths on a place value grid
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	Decimals Sp4e	Divide 1 or 2-digits by 100
Recognise and write decimal	Decimals Su1a	Make a whole
equivalents to 1/4, 1/2, 3/4		Write decimals
Compare numbers with the same number of decimal places up to two decimal places	Decimals Su1b	Compare and order decimals
Round decimals with one decimal place to the nearest whole number	Decimals Su1c	Round decimals
Recognise and write decimal equivalents to 1/4, 1/2, 3/4	Decimals Su1d	Halves and quarters

7 Measurement

Outcome	Quests	Content
Estimate, compare and calculate	Money Su2	Pounds and pence
different measures, including		Ordering money
money in pounds and pence		Estimating money
		Four operations
Convert between different units of	Time Su3a	Units of time
measure [for example, kilometre to		
metre; hour to minute]		
Solve problems involving converting	Time Su3b	Solving time problems
from hours to minutes; minutes to		
seconds; years to months; weeks to		
days.		
Read, write and convert time	Time Su3c	Analogue to digital - 12 hour
between analogue and digital 12-		Analogue to digital - 24 hour
and 24-hour clocks		

Statistics

Outcome	Quests	Content
Interpret and present discrete and	Statistics Su4a	Interpret charts - tables
continuous data using appropriate		Interpret charts - pictograms
graphical methods, including bar		Interpret charts - bar charts
charts and time graphs		Solving problems using charts
Solve comparison, sum and	Statistics Su4b	Comparison, sum & difference
difference problems using		
information presented in bar charts,		
pictograms, tables and other		
graphs		
Interpret and present discrete and	Statistics Su4c	Line graphs
continuous data using appropriate		
graphical methods, including bar		
charts and time graphs		

9 Geometry – Properties of Shape

Outcome	Quests	Content
Identify acute and obtuse angles	Properties of shape	Identify angles
and compare and order angles up	Su5a	Compare and order angles
to two right angles by size		
Compare and classify geometric	Properties of shape	Triangles
shapes, including quadrilaterals	Su5b	Quadrilaterals
and triangles, based on their		
properties and sizes		
Identify lines of symmetry in 2-D	Properties of shape	Lines of symmetry
shapes presented in different	Su5c	
orientations		
Complete a simple symmetric figure	Properties of shape	Symmetric figures
with respect to a specific line of	Su5d	
symmetry.		

10 Geometry – Position and Direction

Outcome	Quests	Content
Describe positions on a 2-D grid as	Position & direction	Describe position
coordinates in the first quadrant	Su6a	
Plot specified points and draw	Position & direction	Draw on a grid
sides to complete a given polygon	Su6b	Move on a grid
Describe movements between	Position & direction	Describe movement on a grid
positions as translations of a given	Su6c	
unit to the left/right and up/down		

Grade 5

1 Number and Place Value

Outcome	Quests	Content
Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Place value A1a	Numbers to 10,000
Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000	Place value A1b	Round to nearest 10, 100 and 1,000
Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Place value A1c	Numbers to 100,000 Compare and order numbers to 100,000
Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000	Place value A1d	Round numbers within 100,000
Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Place value A1e	Numbers to a million
Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	Place value A1f	Counting in powers of 10
Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Place value A1g	Compare and order numbers to one million
Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000	Place value A1h	Round numbers to one million
Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0	Place value A1i	Negative numbers in context
Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.	Place value A1j	Roman numerals to 1,000

2 Addition and Subtraction

Outcome	Quests	Content
Add and subtract whole numbers	Addition and	Add whole numbers with more
with more than 4 digits, including	subtraction A2a	than 4 digits
using formal written methods		Subtract whole numbers with
(columnar addition and subtraction)		more than 4 digits
Use rounding to check answers to	Addition and	Round to estimate and
calculations and determine, in the	subtraction A2b	approximate
context of a problem, levels of		
accuracy		
Solve addition and subtraction	Addition and	Inverse operations (addition
multi-step problems in contexts,	subtraction A2c	and subtraction)
deciding which operations and		Multi-step addition and
methods to use and why		subtraction problems

Statistics

Outcome	Quests	Content
Solve comparison, sum and	Statistics Y5A3	Read and interpret line graphs
difference problems using		Draw line graphs
information presented in a line		Use line graphs to solve
graph		problems
Complete, read and interpret	Statistics Y5A3	Read and interpret tables
information in tables including		Two-way tables
timetables		Timetables

4 Multiplication and Division – A

Outcome	Quests	Content
Identify multiples and factors,	Multiplication and	Multiples
including finding all factor pairs of a number, and common factors of two numbers	division A4a	Factors and common factors
Establish whether a number up to	Multiplication and	Prime numbers
100 is prime and recall prime	division A4b	
numbers up to 19		
Recognise and use square numbers	Multiplication & division	Square numbers
and cube numbers, and the	A4c	Cube numbers
notation for squared (2) and cubed		
(3)		
Multiply and divide whole numbers	Multiplication and	Multiply by 10, 100 and 1,000
and those involving decimals by 10,	division A5d	Divide by 10, 100 and 1,000
100 and 1,000		Multiples of 10, 100 and 1,000

Measurement

Outcome	Quests	Content
Measure and calculate the perimeter of composite rectilinear	Perimeter & area A5a	Measure and calculate perimeter
shapes in cm and m		
Calculate and compare the area of	Perimeter & area A5b	Area of rectangles
rectangles (including squares), and		Area of compound shapes
including using standard units, cm ² ,		Area of irregular shapes
m ² and estimate the area of		
irregular shapes		

6 Multiplication and Division – Sp

Outcome	Quests	Content
Multiply numbers up to 4 digits by a	Multiplication and	Multiply 4-digits by 1-digit
one- or two-digit number using a	division Sp1a	Multiply 2-digits (area model)
formal written method, including		Multiply 2-digits by 2-digits
long multiplication for 2-digit		Multiply 3-digits by 2-digits
numbers		Multiply 4-digits by 2-digits
Divide numbers up to 4 digits by a	Multiplication and	Divide 4-digits by 1-digit (no
1-digit number using the formal	division Sp1b	remainders)
written method of short division		Divide with remainders
and interpret remainders		
appropriately for the context		

7 Fractions, Decimals and Percentages – Sp

Outcome	Quests	Content
Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Fractions Sp2a	Equivalent fractions
Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example 2/5 +	Fractions Sp2b	Improper fractions to mixed numbers Mixed numbers to improper fractions
4/5 = 6/5 = 1 1/5	5	Number sequences
denominators are all multiples of the same number	Fractions Sp2c	Compare and order fractions less than 1 Compare and order fractions
Add and subtrast fractions with the	Eractions Sn2d	greater than 1
same denominator and	Fluctions Spzu	Add and subtract fractions
denominators that are multiples of		Add 3 or more fractions
		Add fractions
		Subtract fractions
		Subtract mixed numbers (1)
		Subtract mixed numbers (2)
		Subtract 2 mixed numbers
Multiply proper fractions and mixed numbers by whole numbers,	Fractions Sp2e	Multiply unit fractions by an integer
supported by materials and diagrams		Multiply non-unit fractions by an integer
		Multiply mixed numbers by integers
		Fraction of an amount
		Using fractions as operators
Read and write decimal numbers as fractions [for example, 0.71 =	Decimals & percentages Sp3a	Decimals up to 2 d.p. and number sequence
71/100]		Decimals as fractions
Recognise and use thousandths	Decimals &	Understand thousandths
and relate them to tenths, hundredths and decimal equivalents	percentages Sp3b	Thousandths as decimals
Round decimals with two decimal places to the nearest whole number and to one decimal place	Decimals & percentages Sp3c	Rounding decimals
Read, write, order and compare numbers with up to three decimal places	Decimals & percentages Sp3d	Order and compare decimals
Recognise the per cent symbol ($\overline{\%}$)	Decimals &	Understand percentages
and understand that per cent relates to 'number of parts per	percentages Sp3e	Percentages as fractions and decimals
hundred', and write percentages as a fraction with denominator 100, and as a decimal		Equivalent F.D.P

8 Fractions, Decimals and Percentages — Su

Outcome	Quests	Content
Solve problems involving number	Decimals Su1	Add decimals within 1
up to three decimal places		Subtracting decimals within 1
		Compliments to 1
		Adding decimals - crossing the
		whole
		Add decimals, same place
		value, crossing the whole
		Subtract decimals in the same
		place value
		Add decimals in different
		place values
		Subtract decimals in different
		place values
		Adding and subtracting
		wholes and decimals
		Decimal sequences
		Multiplying decimals by 10,
		100 and 1,000
		Dividing decimals by 10, 100
		and 1,000

9 Geometry – Properties of Shape

Outcome	Quests	Content
Know angles are measured in	Properties of shape	Measuring angles in degrees
degrees: estimate and compare	Su2a	
acute, obtuse and reflex angles		
Draw given angles, and measure	Properties of shape	Measuring with a protractor
them in degrees (°) identify: angles	Su2b	(1)
at a point and one whole turn (total		Drawing accurately
360°), angles at a point on a		
straight line and 1/2 a turn (total		
180°), other multiples of 90°		
Identify: angles at a point and one	Properties of shape	Calculating angles on a
whole turn (total 360°), angles at a	Su2c	straight line
point on a straight line and 1/2 a		Calculating angles around a
turn (total 180°), other multiples of		point
90°		Lengths and angles in shapes
Use the properties of rectangles to	Properties of shape	Regular and irregular
deduce related facts and find	Su2d	polygons
missing lengths and angles		
Identify 3-D shapes, including	Properties of shape	Reasoning about 3D shapes
cubes and other cuboids, from 2-D	Su2e	
representations		

10 Geometry – Position and Direction

Outcome	Quests	Content
Identify, describe and represent the	Position & direction Su3	Position in the first quadrant
position of a shape following a		Reflection with coordinates
reflection or translation, using the		Translation with coordinates
appropriate language, and know		
that the shape has not changed.		

11 Measurement — Su

Outcome	Quests	Content
Convert between different units of	Converting units Su4a	Kilograms and kilometres
metric measure [for example, km		Millimetres and millilitres
and m; cm and m; cm and mm; g		Metric units
Understand and use approximate	Converting units Su4b	Imperial units
and common imperial units such as inches, pounds and pints		
Solve problems involving converting	Converting units Su4c	Converting units of time
between units of time		Timetables
Estimate volume [for example,	Volume Su5d	What is volume?
using 1 cm ³ blocks to build cuboids		Comparing and estimating
(including cubes)] and capacity [for		volume
example, using water]		Estimate capacity

Grade 6

1 Number and Place Value

Outcome	Quests	Content
Read, write, order and compare	Place value A1a	Numbers to ten million
numbers up to 10 000 000 and		Compare and order any
determine the value of each digit		number
Round any whole number to a	Place value A1b	Round within ten million
required degree of accuracy		
Use negative numbers in context,	Place value A1c	Negative numbers
and calculate intervals across zero		

2 Addition, Subtraction, Multiplication and Division

Outcome	Quests	Content
Use their knowledge of the order of operations to carry out calculations involving the four operations	Four operations A2a	Add and subtract integers
Multiply multi-digit numbers up to 4 digits by a 2-digit whole number using the formal written method of long multiplication	Four operations A2b	Multiply up to a 4-digit number by 2-digit number Multiply up to a 4-digit number by 2-digit number
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	Four operations A2c	Short division Division using factors
Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context	Four operations A2d	Long division (1) Long division (2) Long division (3) Long division (4)
Identify common factors, common multiples and prime numbers	Four operations A2e	Common factors Common multiples Primes to 100 Squares and cubes
Solve problems involving addition, subtraction, multiplication and division	Four operations A2f	Order of operations
Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	Four operations A2g	Mental calculations and estimation
Solve problems involving addition, subtraction, multiplication and division	Four operations A2h	Reason from known facts

3 Fractions, Decimals and Percentages — A

Outcome	Quests	Content
Use common factors to simplify	Fractions A3a	Simplify fractions
fractions; use common multiples to		Fractions on a number line
express fractions in the same		
denomination		
Compare and order fractions,	Fractions A3b	Compare and order
including fractions > 1		(denominator)
		Compare and order
		(numerator)
Add and subtract fractions with	Fractions A3c	Add and subtract fractions
different denominations and mixed		Add fractions
numbers, using the concept of		Subtract fractions
equivalent fractions		Mixed addition and
		subtraction
Multiply simple pairs of proper	Fractions A3d	Multiply fractions by integers
fractions, writing the answer in its		Multiply fractions by fractions
simplest form [for example $1/4 \times 1/2$		
= 1/8]		
Divide proper fractions by whole	Fractions A3e	Divide fractions by integers
numbers [for example, 1/3 ÷ 2 = 1/6]		Four rules with fractions
Associate a fraction with division	Fractions A3f	Fraction of an amount
and calculate decimal fraction		Fraction of an amount - find
equivalents [for example, 0.375] for		the whole
a simple fraction [for example, 3/8]		

4 Geometry – Position and Direction

Outcome	Quests	Content
Describe positions on the full	Position and direction	The first quadrant
coordinate grid (all four quadrants)	A4a	Four quadrants
Draw and translate simple shapes	Position and direction	Translations
on the coordinate plane, and reflect	A4b	Reflections
them in the axes		

5 Fractions, Decimals and Percentages — Sp

Outcome	Quests	Content
Identify the value of each digit in	Decimals Sp1a	Three decimal places
numbers given to 3 decimal places,		Multiply by 10, 100 and 1,000
multiply and divide numbers by 10,		Divide by 10, 100 and 1,000
100 and 1,000 giving answers up		
to 3 decimal places		
Multiply 1-digit numbers with up to	Decimals Sp1b	Multiply decimals by integers
2 decimal places by whole numbers		
Use written division methods in	Decimals Sp1c	Divide decimals by integers
cases where the answer has up to		Division to solve problems
2 decimal places		Decimals as fractions
Associate a fraction with division	Decimals Sp1d	Fractions to decimals
and calculate decimal fraction		
equivalents [for example, 0.375] for		
a simple fraction [for example, 3/8]		
Recall and use equivalences	Percentages Sp2	Fractions to percentages
between simple fractions, decimals		Equivalent FDP
and percentages, including in		Order FDP
different contexts.		Percentage of an amount

6 Algebra

Outcome	Quests	Content
Use simple formulae	Algebra Sp3a	Find a rule - one step
		Find a rule - two step
Generate and describe linear	Algebra Sp3b	Forming expressions
number sequences		
Express missing number problems	ns Algebra Sp3c	Substitution
algebraically		Formulae
		Forming equations
Find pairs of numbers that satisfy	Algebra Sp3d	Solve simple one-step
an equation with two unknowns		equations
		Solve two-step equations
Enumerate possibilities of	Algebra Sp3e	Find pairs of values
combinations of two variables		

7 Measurement

Outcome	Quests	Content
Use, read, write and convert	Converting units Sp4a	Metric measures
between standard units, converting		Convert metric measures
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		
Solve problems involving the	Converting units Sp4b	Calculate with metric
calculation and conversion of units		measures
of measure, using decimal notation	Converting units Sp4c	Miles and kilometres
up to three decimal places where		Imperial measures
appropriate		
Recognise that shapes with the	Perimeter, area ana	Snapes - same area
some dreas can have different	volume Sp5a	
Perimeters and vice versa	Derimeter greg and	Area and parimeter
formulae for great and volume of	volume SpEb	Ared and perimeter
shapes		
Calculate the area of	Perimeter, area and	Area of a triangle (1)
parallelograms and triangles	volume Sp5c	Area of a triangle (2)
		Area of a triangle (3)
		Area of a parallelogram
Calculate, estimate and compare	Perimeter, area and	Volume - counting cubes
volume of cubes and cuboids using	volume Sp5d	Volume of a cuboid
standard units, including cm ³ , m ³		
and extending to other units (mm ³		
and km³).		

8 Ratio and Proportion

Outcome	Quests	Content
Solve problems involving the	Ratio Sp6a	Using ratio language
relative sizes of 2 quantities where		Ratio and fractions
missing values can be found by		Introducing the ratio symbol
using integer multiplication and		
division facts		
Solve problems involving unequal	Ratio Sp6b	Calculating ratio
sharing and grouping using		
knowledge of fractions and		
multiples.		
Solve problems involving similar	Ratio Sp6c	Using scale factors
shapes where the scale factor is		Calculating scale factors
known or can be found		Ratio and proportion problems

Statistics

Outcome	Quests	Content
Interpret and construct pie charts	Statistics Sp7a	Read and interpret line graphs
and line graphs and use these to		Draw line graphs and solve
solve problems		problems
Illustrate and name parts of circles,	Statistics Sp7b	Circles
including radius, diameter and		Read and interpret pie charts
circumference and know that the		Pie charts with percentages
diameter is twice the radius		Draw pie charts
Calculate and interpret the mean as	Statistics Sp7c	The mean
an average		

10 Geometry – Properties of Shapes

Outcome	Quests	Content
Recognise angles where they meet	Properties of shape	Measure with a protractor
at a point, are on a straight line, or	Su1a	Introduce angles
are vertically opposite, and find		Calculate angles
missing angles.		Vertically opposite angles
Compare and classify geometric	Properties of shape	Angles in a triangle
shapes based on their properties	Su1b	Angles in a triangle - special
and sizes and find unknown angles		cases
in any triangles, quadrilaterals, and		Angles in a triangle - missing
regular polygons		angles
		Angles in quadrilaterals
		Angles in regular polygons
Draw 2-D shapes using given	Properties of shape	Draw shapes accurately
dimensions and angles	Su1c	
Recognise, describe and build	Properties of shape	Draw nets of 3-D shapes
simple 3D shapes, including making	Su1d	
nets		



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