Mathletics

England Key Stage 1

Understanding Practice and Fluency (UPF)

Grade 2

November, 2021

Mathletics

Mathletics

England Program of Studies

Understanding, Practice and Fluency (UPF)

November 2021

Grade 2

1 Number

1.1 Place value

Outcome	Quests	Content
Count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward	Count in number sequences	Counting in 2s
		Counting in 5s
		Counting in 10s
		Counting in 2s, 5s and 10s
		Counting in 3s
		Counting starting on any number
Recognise the place value of each digit in a two-digit number (10s, 1s)	Place value of 2-digit numbers	Tens and ones
		Partitioning tens and ones
		Non-standard partitioning of tens and ones
Identify, represent and estimate numbers using different representations, including the number line	Identify, represent and estimate numbers	Numbers to 100
		Ordinal numbers
Compare and order numbers from 0 up to 100; use <, > and = signs	Compare and order numbers up to 100	Comparing and ordering collections to 20
		Comparing and ordering numbers to 100
Read and write numbers to at least 100 in numerals and in words	Read and write numbers to 100	Reading and writing numbers to 100
Use place value and number facts to solve problems	Use place value to solve problems	Using place value to solve problems

1.2 Addition & subtraction

Outcome	Quests	Content
Solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods	Problem solving: addition/subtraction	Addition and subtraction problems within 20
		Addition and subtraction problems within 100
		Exploring change in quantity
Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Addition and subtraction facts	Number bonds to 20
		Doubles and near doubles
		One more and one less within 100
		Number bonds to 100

		Adding zero to a number
		Subtracting zero from a number
Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: -a two-digit number and 1s -a two-digit number and 10s - 2 two-digit numbers -adding 3 one-digit numbers	Add and subtract numbers	Adding 1-digit numbers
		Adding 1-digit and 2-digit numbers
		Adding 2-digit numbers and 10s
		Add two 2-digit numbers
		Subtracting 1-digit and 2-digit numbers
		Subtracting 2-digit numbers and 10s
		Subtracting two 2-digit numbers
		Introducing vertical addition and subtraction
		Using mental strategies to add and subtract
		Using the bar model within 20
Show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot	Commutativity in addition	Commutativity in addition
Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	Rules of addition and subtraction	Relationships between addition and subtraction

1.3 Multiplication & division

Outcome	Quests	Content
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Multiplication and division facts	2 times-tables
		5 times-tables
		10 times-tables
		Multiplying by 2s, 5s and 10s
		Dividing by 2
		Dividing by 5
		Dividing by 10
		Dividing by 2s, 5s and 10s
		Multiplying and dividing by 2, 5, and 10
		Odd and even numbers
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	Create mathematical sentences	Creating mathematical sentences

Show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot	Rules of multiplication	The commutative law of multiplication
		Relationship between multiplication and division
Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	Multiplication and division problems	Using arrays
		Adding to multiply
		Solving problems using multiplication and division

1.4 Fractions

Outcome	Quests	Content
Recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity	Fractions	Halves
		Quarters
		Halves and quarters
		Thirds
		Counting in halves and quarters
		Counting in thirds
		Ordering and comparing simple fractions
		Finding quarters by halving
Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2	Equivalence in fractions	Equivalence in fractions

2 Measurement

1.1 Measurement

Outcome	Quests	Content
Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	Measure lengths	Measuring lengths - informal
		Measuring lengths - cm
		Selecting appropriate units to measure length
		Word problems using length
	Measure mass	Introducing weight and mass
		Measuring mass in kilograms
		Measuring mass in grams
		Selecting appropriate unit to measure mass
	Measure volume	Capacity and volume
		Measuring capacity using litres
		Measuring capacity using millilitres
		Selecting appropriate units to measure volume
	Reading a thermometer	Temperature
	Identify correct unit of measure	Choosing the right unit of measure
Compare and order lengths, mass, volume/capacity and record the results using >, < and =	Compare lengths, mass and volume	Comparing lengths
		Comparing mass
		Comparing volume
	Compare temperatures	Comparing temperatures
Find different combinations of coins that equal the same amounts of money	Combinations of coins	Combinations of money
Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	Add and subtract money	Adding and subtracting money
Compare and sequence intervals of time	Internals of time	Comparing and sequencing intervals of time
Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times	Tell the time: digital and analogue	O'clock and half past (analogue clocks)
		O'clock and half past (digital clocks)
		Quarter past and quarter to (analogue clocks)
		Quarter past and quarter to (digital clocks)
		Telling time to 5 minutes (analogue clocks)
		Telling time to 5 minutes (digital clocks)

		Problem solving with hours and minutes

3 Geometry

3.1 Properties of shapes

Outcome	Quests	Content
Identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line	2D shapes	Recognising 2D shapes
		Recognising lines of symmetry in 2D shape
Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	3D shapes	Introducing spheres
		Introducing cubes
		Introducing cylinders
		Introducing prisms
		Introducing cones
		Introducing pyramids
		Describing the properties of 3D shapes
		Building 3D shapes
Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]	Identify 2D shapes on 3D shapes	Identifying 3D shapes in the environment
Compare and sort common 2-D and 3-D shapes and everyday objects	Compare and sort 2D and 3D shapes	Sorting 2D shapes
		Sorting 3D shapes
		Comparing 2D shapes
		Comparing 3D shapes

3.2 Position & direction

Outcome	Quests	Content
Order and arrange combinations of mathematical objects in patterns and sequences	Patterns and sequences	Making patterns with shapes
		Number patterns
Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)	Position, direction and movement	Describing position and movement
		Describing movement and turns

4 Statistics

4.1 Statistics

Outcome	Quests	Content
Interpret and construct simple pictograms, tally charts, block diagrams and tables	Interpret and construct graphs	Pictograms
		Tally charts
		Block diagrams
		Tables
		Mixed data displays
		Constructing graphs
Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	Answer questions about data	Answering questions by counting
Ask-and-answer questions about totalling and comparing categorical data	Ask questions and collect data	Asking questions and collecting data

Mathletics

For more information about Mathletics,
contact our friendly team.

www.mathletics.com/contact

A 3P Learning Product