



Two Rivers Primary School



Mathematics Spiral Curriculum 2023

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Number Spiral Curriculum

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Recognition of number 1.

Number songs.

1:1 correspondence.

Touch counting with adult support.

Number matching.

Experience more and less (early addition and subtraction).

Explores numbers in the environment.

5

Recognition of number 1 and 2.

Number songs with active participation.

Touch counting using number names.

Make amounts 1 and 2 with support.

Addition – Understanding of 1 and lots.

Increasing awareness of numbers having a value.

6

Rote counting to 5.

Sequencing number to 5.

Representing numbers to 3.

Matching quantities to 3.

Addition – Identifying a group which contains 'more'.

Is able to give 1 more.

Subtraction – Is able to take away 1 and with support count 'total'.

7

Rote counting to 10.

Represents numbers to 5.

Matches quantities to 5.

Counting to 5 and making amounts without correspondence.

Addition – Finding 1 more and saying total.

Know that the last number said is the total when counting.

Subtraction – Finding 1 less.

Multiplication – Double numbers practically using 1:1 correspondence.

Division – Shares numbers equally using 1:1 correspondence.

8

Sight counting small groups (amounts to 5).

Rote counting to 20.

Recognises numerals to 15.

Makes, sequences and matches quantities to 10.

Estimates small amounts (to 7).

Addition – Adds 1 more practically and states total.

Adds small groups using counters.

Counts on, on a number line to 10.

Subtraction – Subtracts 1 practically and states total.

Finds 1 less on a number line.

Subtracts amounts from a small group.

Multiplication – Double numbers practically to 10.

Division – Halve numbers practically to 20.

9

Read and write numbers 0-9.

Recalls numbers to 20 confidently.

Recalls number facts to 5.

Sequences numbers to 20.

Has an awareness of the Commutative law.

Addition – Using mathematical symbols to record + and =

Add two whole numbers totalling 20.

Aware of inverse.

Problem solving – values to 10.

Subtraction – Using mathematical symbols to record – and =

Subtract one number from 20.

Aware of inverse.

Problem solving – Values to 10.

Multiplication – Recall doubles to 10.

Division – Recall halving facts to 20.

10

Read and write numerals to 100.

Partitioning using tens and units.

Identifies odd and even numbers.

Round numbers to nearest 10.

Recall number bonds to 10.

Addition – Adds whole numbers to 100.

Problem solving using addition.

Subtraction – Subtracts whole numbers to 100.

Problem solving using subtraction.

Multiplication and Division – Counts in multiples of 2 and 5.

Multiples whole numbers by 2.

Divide whole numbers by 2.

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Partitions 2 digit numbers.

Recall number bonds to 20.

Read scales in 1,2,5 and 10.

Identifies and estimates numbers on a number line.

Fractions - Identifies fractions using numbers and shape.

Recognise equivalent fractions.

Algebra – Understands equalities.

Addition – Adds using efficient methods.

Column addition.

Problem solves using all 4 operations.

Subtraction – Subtracts using an efficient method.

Column subtraction.

Multiplication – Recall facts in the 2, 5 and 10 times table.

Problem solving.

Division – Divide numbers by 2, 5 and 10.

12

Compare and order numbers to 1000.

Read scales with different numerical values.

Place value to three digits.

Partition numbers using hundreds, tens and units.

Fractions - Order Fractions.

Addition – Add using three digit numbers.

Add fractions with same denominator.

Subtraction – Subtract using three digit numbers.

Multiplication – To know facts and solve problems using the 2, 5 and 10 times table.

To recall facts from the 3, 4 and 8 times table.

Multiply a 2 digit number by a 1 digit number.

Division – Divide 2 digit numbers by 1 digit number.

13

Order and compare numbers to 1000 and beyond.

Introduce negative numbers by rote counting from 0.

Round numbers to nearest 10, 100 or 1000.

Place Value to 4 digits.

Introduce decimal place.

Fractions - Identify, demonstrate and show numbers in fractions.

Addition – Add 4 digit numbers.

Subtraction – Subtract 4 digit numbers.

Multiplication – Recall facts from all times table to 12x12.

Division – Divide amounts using known number facts.

14

Read, write, order and compare numbers to 1 Million.

Round to a whole numbers a number with 1 or 2 decimal places.

Round numbers to nearest 10,000 or 100,000.

Fractions – Compares and orders fractions.

Identify mixed and improper fractions.

Addition – Adds amounts using 4 digit numbers using formal method.

Add whole numbers and those with decimal places.

Subtraction – Subtracts amounts using 4 digit numbers using formal method.

Subtract whole numbers and those with decimal places.

Multiplication – Multiply numbers by 10, 100 Or 1000.

Multiply numbers to 4 digits by a 1 or 2 digit number.

Division – Divide whole numbers by 10, 100 or 1000.

Divide numbers above 1000 using a 1 or 2 digit number.

15

Read, write and order positive and negative numbers of any size.

Solve mental maths problems efficiently.

Check own work using taught strategies including estimation and approximation.

Introduce Square root.

Introduce percentages.

Order and compare decimals.

Introduce BODMAS.

Use commutative and distributive properties to solve problems.

Fractions – Recognising the relationships between fractions, decimals and percentages.

Addition – Add amounts with values to 2 decimal places.

Subtraction – Subtract amounts with values to 2 decimal places.

Multiplication – Solve multiplication problems making comparisons to division.

Division – Solve division problem making comparisons to multiplication.

Shape, Space and Measure Spiral Curriculum

4

Shape

2D – Explores shapes

Explores 2D shape jigsaws with choice of 2.

3D – Explores construction materials.

Explores solid shapes that roll.

Measure

Size – Matches size when using 1:1 correspondence.

Matches size with an object of reference.

Capacity – Fills and empties containers.

Explores containers with messy play items – sand, water, pasta.

Mass – Experiences objects – heavy and light.

Space

Experiences positional language in the environment.

Time

Experience classroom routines.

Visual timetables

5

Shape

2D – Explores a range of 2D shapes.

Creates shape pictures.

3D – Explores construction materials.

Explores shapes sorters.

Measure

Size – Uses language big and small.

Identifies big (choice of 2)

Identifies small (choice of 2)

Capacity – Fills and empties containers on request.

Mass – Explores objects – heavy and light.

Space

Can place objects 'in' and 'out' of containers on request.

Time

Identifies different times in the day - breakfast, school, home time, dinner etc.

Explores clocks during play.

Explores passing of time using sand timers.

6

Shape

2D - Matches 2D shapes circle, square, triangle.

Uses basic shape names.

3D - Handles a range of 3d shapes.

Uses basic shape names.

Measure

Size – Identifies big and small.

Orders 3 objects by size

Sorts objects into 2 groups linked to size.

Mass - Experiment with heavy and light where the difference is marked.

Space

Responds to stop and go.

Responds to directional and positional language.

Demonstrates an understanding of in, on, and under

Time

Recalls important times during the daily routine. What activity comes before lunch/after etc.

Explores clocks during play.

Explores passing of time using sand timers.

7

Shape

2D - Recognises shapes regardless of size and colour.

Select a specific shape by name circle, triangle, square.

Understands terms straight and round.

Measure

Size - Identify the big or small object from a selection of two.

Sort objects according to a stated characteristic.

Capacity - States if a container is full or empty.

Length - Recognises object long and short where the difference is great.

Mass – Identifies heavy and light from a choice of 2.

Uses comparative language heavy light big, small, fast and slow.

Space

Responds to directional and positional language.

Demonstrates an understanding of in, on, and under

Time

Makes a clock face during craft sessions and using chalks.

Explores clocks during play.

Explores passing of time using sand timers.

8

Shape

Recognises shapes within the environment.

Recognises square, triangle, circle, rectangles - regardless of colour.

Copies and completes a pattern using shapes

Identifies shapes within a picture and labels.

Measure

Size - Orders 4 objects by size.

States biggest and smallest out of a selection of object.

Capacity – Starts to use terms full, empty, half full, half empty with an object of reference.

Mass – Identifies Heavy and light and begins to order 3 objects.

Space

Understands and follows directional (up/down) and positional language (in, on, under) instructions.

Time

Begin to use names of days of the week (may not be correct)

Sequence breakfast, lunch, dinner - recognising times in their routine.

9

Shape

Sorts 2D and 3D shapes

Match shapes in pictures of different orientation

Identifies differences between 2D and 3D shapes

Measure

Size – Identify smallest and biggest. (pictures)

Capacity – Identifies objects that can be measured with a jug.

Length - Identifies objects that can be measured with a ruler.

Mass – Identifies objects that can be measured with scales.

Space

Moves in different directions

Identifies left and right.

Time

Read time to the hour

Draw hands on a clock to the hour

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Shape

Names common 2D and 3D shapes practically and in pictures.

Can name properties of common 2D and 3D shapes.

Measure

To measure using standard and non-standard units of measure.

Solve practical problems using measure

Solve word problems using measure

Space

Demonstrate positional language

Understand angles as a 'measure' or turn

Time

To name and order days of the week

To name and order months of the year

To read the clock to the hour and half past the hour.

To draw hands on a clock face to the hour and half past the hour

Order familiar events in routine

Money

Recognise all UK coins and notes to £50

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Shape

Name and describe properties of 2D and 3D shapes including sides, vertices, faces and lines of symmetry.

Measure

To estimate, measure and solve word problems linked to length, mass and capacity.

Space

Identifies rotation as a 'turn'

Can turn to show a right angle

Programs a toy to make a quarter turn, half turn etc.

Time

Tell the time by 5 minute intervals

Draw the time on an analogue clock

Draw the minute hand longer than the hour hand

Knows minutes in an hour

Know hours in the day

Has an understanding of am/pm

Can convert time 12 hour/24 hour clock

Money

Combines coins to make amounts

Uses p and £ signs when recording

Solve money word problems using addition and subtraction

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Shape

Describe similarities and differences between 2D and 3D shapes using their properties

Recognises nets of cubes and cuboids

Draws nets for cubes and cuboids

Identifies vertical, horizontal, parallel and perpendicular lines on shapes

Identifies acute, obtuse and right angles in shapes

Find perimeter of 2D shapes

Measure

Adds and subtracts measure – length, mass and capacity

Time

Read the time on the clock to the nearest 5 minutes.

Use the 12 and 24 hour clock

Read time using Roman numerals

Money

Add and subtract money

Recalls time relationships

13

Shape

Identify and draw lines of symmetry on 2D shapes

Reflect simple symmetrical figure

Plot points to draw a polygon

Express perimeter algebraically

Measure

Measure and calculate the perimeter of a rectilinear shape

Estimate, compare and calculate different units of measure.

Space

Describes positions as translations

Read, writes and compares pairs of coordinates

Time

Read, write and convert time between digital and analogue 12 and 24 hour clocks

Solve time problems

Adds three lengths of time using minutes and hours

Money

Estimate, compare and calculate pounds and pence

14**Shape**

Calculate the area and perimeter of a simple shape

Interpret plans and elevations, nets of simple 3D shapes

Estimate and compare acute, obtuse and right angles.

Use perimeter to record unknown lengths

Use area to record known lengths

Calculate the area from scale drawing

Measure

Convert between units using the same system – length, mass and capacity

Estimate volume and capacity

Space

Identify, describe and represent a position of a shape using a reflection or translation

Time

Convert between units using the same system - time

Money

Convert between units using the same – money

15

Shape

Calculate values of angles or coordinates of 2D and 3D shapes

Calculate the perimeter and area of 2D shapes including composite shape

Recognise angles when they meet at a point

Measure

Calculate the volume of cubes and cuboids

Solve problems involving calculations and conversions of units of measure – up to 3 decimal places

Space

Use angles when describing position and direction

Money

Use percentages to answer questions using money

Using and Applying Spiral Curriculum

4

Cause and effect – Repeats an action

Presses a switch

Number – Makes a choice of songs

Uses objects of reference to sing number songs

Shape, Space and Measure – Rolls an object

Builds and knocks down 3D shapes

Looks for objects in, on and under which has been hidden.

Sorts objects into two groups - cars/bears

Colour - Explores colour through play

5

Number – Exchanges a coin (any value) as a form of transaction.

Makes 2 sets with equal amounts.

Shape, Space and Measure – Separates objects by size

Identifies big containers hold bigger objects.

Identifies small containers hold small objects.

Categories objects by matching 1:1 correspondence.

Problem Solving - Matches images

Solves simple problems linked to size

Responds to find the same.

Colour – Matches 2 colours

6

Number – Copy a simple number pattern

Shape, Space and Measure – Copy a simple size pattern

Recognise a shape from a choice of 4 (square, triangle, circle and rectangle)

Sort by criteria – shape/size

Copy a simple movement pattern

Problem Solving – Copy a simple object pattern

Colour – Copy a simple colour pattern

Sort by criteria – colour

7

Number – Begins to state numbers when asked to count amounts.

Shape, Space and Measure – Names shapes

Sort by size and shape

Problem Solving – Copies and continues simple patterns.

Identifies the odd one out when given the choice of 4 objects.

Sorts by criteria

Colour – Sorts by colour in a range of environments

Names colours when asked

8

Number – Add and subtract objects and state how many is the total

Plays with dominoes

Uses ordinal language

Shape, Space and Measure – Makes estimations in length using non-standard measure

Problem Solving – Plays and takes turns in a maths games with peers

Plays a dice game

Can identify the next sequence in a repeating pattern

Uses mathematical language

Colour – Copy and complete patterns

Copy a 3 stage repeating pattern

9

Number – Understands the total changes when amounts are added/subtracted

Solves practical problems working to 20.

Solves practical problems using ordinal numbers

Uses mathematical language for addition and subtraction

Estimates values to 15

Creates a simple number pattern

Shape, Space and Measure - Identifies objects that can be measured with a jug.

Length - Identifies objects that can be measured with a ruler.

Mass – Identifies objects that can be measured with scales.

Problem Solving – Understands object permanency in relation to number.

Colour – Continues a 4 stage repeating pattern

Creates own pattern with 3 colours

10

Number – Knows the value of different coins

Shape, Space and Measure – Identifies and names 2D and 3D shapes

Recognises pattern in all environments

Data – Identifies a pictogram from a choice of 4

Identifies a tally chart from a choice of 4

Identifies a block graph from a choice of 4.

Identifies a Venn diagram from a choice of 4.

Uses comparative language

Problem Solving – Begins to ask questions about number, shape and pattern

11

Number – Uses different coins to make the same amount

Shape, Space and Measure - Name and describe properties of 2D and 3D shapes.

Data – To create and label a pictogram

To answer comparative questions about a pictogram

To create, read and answer questions about a Tally chart

Collect data using a tally chart

Know how to record tally's

Can add tally's to find the frequency total

Problem Solving – Can sort objects into two given categories

Can sort objects by own criteria

12

Number – Understands relationships between numbers – number bonds, mental addition to 20.

Shape, Space and Measure - Describe similarities and differences between 2D and 3D shapes using their properties

Data – identifies the X and Y axis.

Labels the X and Y axis

Creates, labels and interprets a Bar Chart

Creates and interprets a table

Uses simple scale in pictograms – 1 image = 2 etc

Uses simple scale in Bar charts where 1 line = 2 objects etc

Problem Solving – Use reasoning to solve more complex problems

Solve word problems with more than 1 step

Solves one step problems about data

13

Number – Understands the use of the mean, mode, median and range

Shape, Space and Measure – Estimate, compare and calculate different units of measure.

Data - Construct and interpret simple line graphs

- Uses a greater range of scales

- Collects relevant data

- Writes a hypothesis

- Interpret and presents discrete and continuous data

Problem Solving – Solve problems with information present in a variety of graphs

- Can identify relevant information from a problem

- Solves comparative sum and difference problems.

14

Number – Find the mean of a set of quantities

- Find the range of a set of quantities

- Finds the mean, median, mode and range

Shape, Space and Measure – Convert between units using the same system – length, mass and capacity

Data – Completes, reads and interprets information in tables

- Makes appropriate choices on data representation

- Constructs and interprets a bar chart

- Constructs and interprets a pie chart

- Construct and interprets a line graph

Problem Solving – Understands probability on a scale of 0-1

- Solves problems linked to line graphs

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Number – Use probability to compare the likelihood of events

- Use probability to compare likelihood of events using fractions

- Calculate the mean, median, mode and range of a set of quantities

Shape, Space and Measure – Calculate with measure

Use mathematical reasoning to find missing angles

Data – Represent discrete data in tables, diagrams and charts

Group discrete data and represent graphically

Problem Solving – Use formal methods to solve problems