



2020 Recovery Programme for Mathematics

Programmes of study: KS 1 and 2

Why choose a "Recovery Programme" in 2020?

Our aim from the start of the Autumn Term has been to find out which skills children have retained during lockdown, which skills have been forgotten, which other skills they have learnt whilst at home, and which were missed when schools closed from March - July. In TJLS, whilst some Pre-school, Reception and Year 1 pupils returned to partial opening, the majority of our Year 2-4 pupils continued to learn at home.

We have chosen a Recovery Programme for all our pupils, which builds and extends on the skills they have retained, identifies missed learning and covers the key learning expectations for their new year group. To this end we have purchased resources from **Herts For Learning Back on Track Mathematics** using our **Catch up Pupil Funding**.

Teachers are aware that the lockdown learning experience varied amongst our children. Although work was set and marked daily through Google Classroom (throughout lockdown and partial reopening), teachers recognised that some pupils still struggled to access learning. Difficulties such as constraints on parent/carer's time and their own subject knowledge and confidence have resulted in not all children experiencing the same opportunities.

We've asked ourselves: "Who had help? Who might have struggled? Who had no support?" We've looked at "What was only partly covered? What learning was missed completely?"

The Back on Track Essential Maths lessons and supporting resources provide our teachers with flexibility to respond to the needs of the whole class.

Using the **Catch up Pupil Funding** we also have separate small group focus sessions for identified pupils, delivered by an experienced teacher.

What do we aim to achieve? (Our intent)

Our intent in 2020-21 is that key learning is prioritised, breadth is maintained and learning sequences reactivated as well as addressing missed and insecure learning before new content is taught.

We intend that mathematical skills are **reactivated** (e.g. so that the brain's ability to retrieve key number facts quickly is reinstated).

We intend that skills which were only partially taught, be **revisited and rehearsed**.

Through **pre-teaching**, we intend to ensure that existing skills are sufficiently secure for new learning to take place.

Through **new teaching**, we intend that new skills (ie: those not taught over Summer and those to be taught this year) are incorporated into an already full curriculum through a blended approach.

How do we do it? (Our implementation)

The scheme of work highlights learning which would have been a) missed completely and b) partially taught.

Using a framework of **Reactive-Assess-Teach/Pre-teach-Rehearse**, teachers are able to focus on reactivating previous learning and assessing retention quality of the previous learning. They then incorporate new learning and in this way blend new teaching. Assessment highlights the need for pre-teaching (focusing on ensuring that the skills that will underpin the new learning are in place) or rehearsing and strengthening recall for all pupils.

Dedicated maths lessons and short fluency burst activities in the Autumn term are used to meet the pupils' needs.

This means that some other lessons have necessarily been condensed (e.g. teaching only 3 of 6 music lessons) for this Autumn term.

What is the impact of this learning?

During Autumn we focus on securing key learning (e.g. number and place value reasoning, mental addition and subtraction, multiplicative reasoning and geometric reasoning).

During Spring and Summer we move and extend any learning which may have been missed from Summer 2020's closure, as well as blending in new learning (e.g. proportional reasoning, multiplicative reasoning).

In this way pupils' learning is reactivated, extended and enhanced.

During Lockdown, our pupils were keen to continue using their mathematical studies through our Google Classroom activities.



Recovery Mathematics programmes of study: KS 1 and 2 for 2020

YEAR	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Counting aloud 0-20 and back; number recognition; ordering numbers 0-20; counting objects (1:1 correspondence); copying & continuing simple colour and shape patterns; height	Counting aloud 0-30; one more and one less than given number; 2D and 3D shapes; money; estimating; length	Counting aloud to 40; addition and subtraction using objects; symmetrical patterns; positional language; time - daily events; data handling	Counting aloud to 50; weight; teen numbers; time - o'clock/half past; doubling; number formation; sorting 2D & 3D shapes	Counting aloud to 70; counting in 10's and 2's; addition and subtraction using a number line and 100 square; halving and sharing; capacity	Counting aloud to 100; measure height of sunflowers & record; odd and even numbers; number bonds to 5 and 10; missing numbers; money

What does each lesson cover and how does it link together over time? NC aims for Key Stage 1 (Years 1 and 2) :

To **become fluent** in the fundamentals of mathematics; to **reason mathematically** by following a line of enquiry and developing an argument; to **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication.

1M: number and place value

2M: addition and subtraction

3M: multiplication and division (including scaling or square/cube numbers or multiples and factors)

4M: fractions, decimals, percentages or ratio

5M: measurement and statistics (including lengths and height; mass/weight; capacity and volume; time; money; sequencing events; graphs, charts, pictograms and tables)

6M: geometry- properties of shapes; position and direction

KS1 Years 1 & 2: AUTUMN, SPRING AND SUMMER TERM

Year 1 – Long term plan 2020/21 (Priorities and Pathways)

Overview

	Learning sequence	Approximate timing	Focus
Autumn Term	1LS1	≈ 1 week	Geometry – Positional Language Including Ordinal Numbers
	1LS2	≈ 1 week	Numbers to Ten – Finding Patterns in Numbers (include subitising)
	1LS3	≈ 1 week	Numbers to Ten – Counting and Comparison (more, less and fewer)
	1LS4	≈ 1 week	Numbers to Ten – Estimating and Ordering
	1LS5	≈ 3 weeks	Numbers to Ten – Regrouping the Whole
	1LS6		Numbers to Ten – Part-whole Addition and Subtraction
	1LS7	≈ 3 weeks	Numbers to Ten – Solving Problems Using Part or Whole Unknown
	1LS8		Numbers to Ten – Comparison
	1LS9	≈ 1 week	Numbers to Ten – Equality and Balance
Spring Term	1LS14	≈ 1 week	Geometry – Names and Properties of 2D and 3D Shape
	1LS16	≈ ½ week	Sequencing Events - Days of the Week & Months of the Year
	1LS10	≈ 2½ weeks	Numbers to Twenty – Making Ten and Some More
	1LS11		Numbers to Twenty – Estimating and Ordering, One More One Less
	1LS12	≈ 1 week	Numbers to Twenty – Doubling and Halving
	1LS13		Numbers to Twenty - Odd and Even Numbers
	1LS17	≈ 1½ weeks	Numbers to Twenty – Adding using 'Think 10'
	1LS18		Numbers to Twenty – Subtraction using 'Think 10'
	1LS19	≈ ½ week	Numbers to Twenty – Equality and Balance
Summer Term	1LS20	≈ 2 weeks	Numbers to Twenty – Part or Whole Unknown
	1LS21		Numbers to Twenty – Language and Problem Solving (part or whole unknown)
	1LS22	≈ 1 week	Numbers to Twenty – Comparison (difference, more, less, fewer) Including Statistics
	1LS15	≈ 1 week	Measures – The Language of Comparing Length, Height, Mass and Speed
	1LS23	≈ 1 week	Measures – Coins and Combinations to 20p, Ordering and Comparing
	1LS24	≈ 1 week	Counting in 2s, 5s 10s.
	1LS25	≈ 1 week	Measures – Non-standard Measures and Introducing Simple Standard Measures
	1LS26	≈ 2 weeks	Multiplication and Division – Equal or Unequal Groups and Remainders
	1LS27		Multiplication – Repeated Addition and Arrays (number of groups and size of group)
	1LS28	≈ 1 week	Multiplication – Problem Solving (identifying the number of groups and size of the group)
	1LS29		Multiplication – Scaling and Counting in 2s to 24
	1LS30	≈ 1 week	Division – Sharing and Grouping Problems
	1LS31	≈ 1 week	Time – Telling the Time, O'clock and Half Pas
	1LS32	≈ 2 weeks	Fractions – Sharing Into Equal Groups
	1LS33		Fractions – Equal or Unequal Parts of Shapes
	1LS34		Fractions – Of Continuous Quantities Including Capacity
	1LS36	≈ 2 weeks	Numbers to One Hundred – Place Value and Digits, Making Tens and Some More
	1LS37		Place Value– Estimation, Ordering and Comparison
	1LS35		Numbers to Twenty – Review

Year 2 – Long term plan 2020/21 (Priorities and Pathways)

Overview

	Priority	Approximate timing	Focus
Autumn Term	-	≈ 1 week	Initial assessment and reactivation
	1	≈ 2 weeks	Counting
	2	≈ 3 weeks	Number and place value
	3	≈ 2 weeks	Equal and unequal
	4	≈ 1 week	Comparison and measures
	5	≈ 3 weeks	Mental calculation
	6	≈ 1 week	Time
Spring Term	7	≈ 1 week	Statistics
	8	≈ 2 weeks	Part, whole understanding
	9	≈ 3 weeks	Addition and subtraction including problem solving
	10	≈ 1 week	Geometry - shape
	11	≈ 3 weeks	Multiplication (including doubling and halving)
Summer Term	12	≈ 2 weeks	Division
	13	≈ 4 weeks	Fractions
	14	≈ 1 week	Geometry – position and direction
	15	≈ 1 week	Durations of time
	16	≈ 4 weeks	Calculation review / problem solving- all four operations including fractions and measures

What does each lesson cover and how does it link together over time? NC aims for Key Stage 2 (Years 3-4):

To **become fluent** in the fundamentals of mathematics; to **reason mathematically** by following a line of enquiry and developing an argument; to **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication.

1M: number and place value

2M: addition and subtraction

3M: multiplication and division (including scaling or square/cube numbers or multiples and factors)

4M: fractions, decimals, percentages or ratio

5M: measurement and statistics (including lengths and height; mass/weight; capacity and volume; time; money; sequencing events; graphs, charts, pictograms and tables)

6M: geometry- properties of shapes; position and direction

LKS2

Mixed age Year 3 & 4: AUTUMN, SPRING AND SUMMER TERM

Mixed Age Year 3 & 4 – Long term plan 2020/21 (Priorities and Pathways)

Overview

	Priority	Approximate timing	Focus
Autumn Term	-	≈ 2 weeks	Initial assessment and reactivation
	1	≈ 2 weeks	Number and place value reasoning 1
	2	≈ 2 weeks	Additive reasoning 1 - mental addition
	3	≈ 2 weeks	Additive reasoning 2 - mental subtraction
	4	≈ 3 weeks	Multiplicative reasoning 1 – building fact recall
	5	≈ 1 week	Geometric reasoning 1 – angles and lines

	Spring Term	6	≈ 4 weeks	Proportional reasoning 1 – scaling, comparison and fractions
		7	≈ 1 week	Geometric reasoning 2 – properties of 2-D shape
		8	≈ 1 week	Proportional reasoning 2 – adding and subtracting fractions
		9	≈ 3 weeks	Additive reasoning 3 – formal written addition and subtraction
		10	≈ 1 week	Spatial reasoning - perimeter
		11	≈ 1 week	Statistical reasoning 1 – bar charts, pictograms (and line graphs Y4)
	Summer Term	12	≈ 4 weeks	Multiplicative reasoning 2 – multiplicative laws and area Multiplicative reasoning 3 – formal written multiplication and division
		13	≈ 2 weeks	Number and place value reasoning 2 - decimals
		14	≈ 1 week	Measurement reasoning 1 – comparing, estimating and calculating with measures
		15	≈ 2 weeks	Measurement and statistical reasoning 2 – time, timetables and time graphs
		16	≈ 3 weeks	Operational reasoning
		17	≈ 1 week	Proportional reasoning 3 – finding fractions of continuous quantities

How does all this build on their learning from the Early Years?

Early Learning Goal	Mathematics	Number and Place Value	<ul style="list-style-type: none"> To count reliably with numbers from one to 20. To say which number is one more or one less than a given number from one to 20 To place numbers one to 20 in order
		Addition and subtraction	<ul style="list-style-type: none"> To add and subtract two single- digit numbers and count on and back to find the answer using quantities and objects. To solve problems including doubling, halving and sharing.
		Shape, space and measure	<ul style="list-style-type: none"> To use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and solve problems. To explore characteristics of everyday objects and shapes and use mathematical language to describe them. To recognise, create and describe patterns.

What do they go on to learn about in Year 5 and 6?

Year 5:

Number and place value to at least 1,000,000; interpreting negative numbers; rounding and solving problems; reading Roman numerals up to 1000 (M)

Addition and subtraction of 4 digit numbers, including formal written methods and mental maths: rounding to check answers; multi-step problems in context

Multiplication and division: multiples and factors; prime numbers, factors and composite numbers; long multiplication for 4-digit numbers; division and remainders; decimals

Fractions: compare and order; equivalent fractions; recognise mixed numbers and improper fractions and convert; add and subtract fractions with same denominator;

multiply proper fractions; decimals; use thousandths; round decimals, read, write, order and compare; solve problems; percentages and decimal equivalents.

Measurement: convert between different units of metric measurement; use approximate equivalences between metric/imperial; perimeter; area; volume; solve problems.

Geometry: representations; angles - acute, obtuse and reflex; measure in degrees; find missing lengths and angles; polygons; reflection or translation;

Statistics: solve comparison, sum and difference problems; interpret information in tables

Year 6:

Number and place value to 10,000,000; rounding; use negative numbers in context and across zero; solve number and practical problems.

Addition, subtraction, multiplication and division: multiply multi-digit numbers up to 4 digits using formal long multiplication; divide numbers up to 4 digits using formal long division, with remainders, fractions or rounding and short division where appropriate; mental calculations including mixed operations and large numbers; common factors, multiples and prime numbers, carry out calculations; solve multi-step problems; use estimation to check answers.

Fractions: use factors to simplify fractions; use multiples to express fractions in same denomination; compare and order; and and subtract with different denominators and mixed numbers; multiply/divide proper fractions; calculate decimal fraction equivalents; identify value of each digit to 3 decimal places; multiply numbers with up to 2 decimal places; use written division; solve problems; recall and use equivalences between simple fractions, decimals and percentages.

Ratio and proportion: solve problems involving the following: relative size and missing values; calculating percentages; similar shapes and scale factor; unequal sharing and grouping.

Algebra: use simple formulae; generate linear number sequences; express missing number problems algebraically; equations with 2 unknowns; possibilities of combinations of 2 variables

Measurement: solve problems involving calculation and conversion of units of measure using decimal notation; convert standard units (length, mass, volume and time) from smaller to larger unit; convert between miles and kilometres; recognise shapes with different perimeters; use formulae for area and volumes of shapes; calculate the area of parallelograms and triangles; calculate, estimate and compare volume of cubes and cuboids including cubic units.

Geometry: draw 2-D shapes using given dimensions and angles; build simple 3-D shapes and make nets; compare and classify geometric shapes and find unknown angles; illustrate and name parts of circles (radius, diameter, circumference); recognise and find missing angles; describe positions on the full coordinate grid (4 quadrants); draw and translate simple shapes on the coordinate plane and reflect in the axes.

Statistics: interpret and construct pie charts, line graphs and use to solve problems; calculate and interpret mean as an average.