Maths Year 1 Curriculum

Bold – National Curriculum objectives
Not bold- Ready to Progress document

Phase 1

Domain: **Place Value**

Revision year R

- I can count confidently to 10
- I know the value of each number to 10

- I have a deep understanding of number to 10, including the composition of each number;
- I can subitise (recognise quantities without counting) up to 5;
- I can verbally count beyond 20, recognising the pattern of the counting system;
- I can compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;

- I can begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10.
- I can play games that involve moving along a numbered track, and understand that

New learning- KPIs:

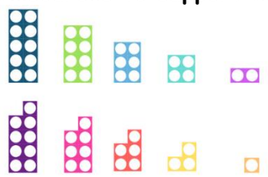
- I can count within 100, forwards and backwards, starting with any number.
- I can reason about the location of numbers to 20 within the linear number system, including comparing using < > and =
- I know that 10 ones are equivalent to 1 ten
- I know that multiples of 10 are made up from a number of tens, for example, 50 is 5 tens.
- I can place the numbers 1 to 9 on a marked, but unlabelled, 0 to 10 number line.
- I can estimate the position of the numbers 1 to 9 on an unmarked 0 to 10 number line.
- I can count forwards and backwards to and from 100

- **I can read and write numbers from 1 to 20 in numerals and words.**
- **I can count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number**
- **I can count, read and write numbers to 100 in numerals;**
- **I can, given a number, identify one more and one less**
- **I can identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least**

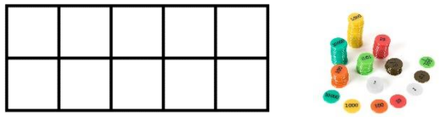
Visualisation:

- **Part whole model** to show partitioning in a standard and non-standard way
- **Bar model** to model the partitioning of numbers
- **Numicon** visual beside the numeral and word, to help with recognise the composition of number

Resources to support learning:



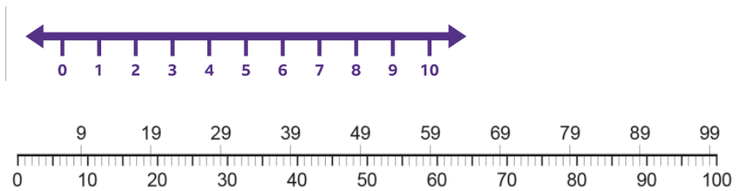
Numicon can be used to support children with number bonds to 10.



Tens frames with **place value counters** to support children to understand that 10 of something fit into…

Dienes to show children that 10 ones make 10.

Bundling sticks help children group objects into tens and ones.



Number lines to identify or place two-digit numbers on marked number lines. A partially marked number line can be used to help children recognise numbers before multiples of 10.

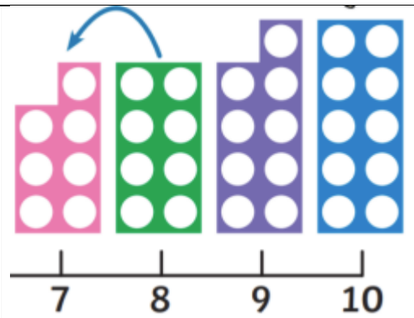
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9

Common misconceptions:

- Pupils who do not keep track of what has been counted.
- Pupils who keep counting by saying the number words in order but do not correspond this to a single object.
- Pupils reversing digits when writing numbers e.g. 31 rather than 13.
- Pupils who believe where the = sign is denotes the answer
- Pupils finding it difficult to count over boundaries e.g. 29 to 30 or backwards from 20 to 19.
- Pupils who can only count forwards that need to practise counting backwards more.
- Pupils not pronouncing 'ty' and 'teen' correctly and confusion between '-ty' and '-teen' numbers as a result.

larger numbers are further along the track.

- I can begin to experience partitioning and combining numbers within 10.

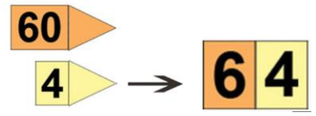


Concrete and pictorial teaching

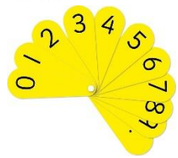
Abstract: Number sentence: 8 – 1 =7

Verbally and STEM sentence: 1 less than 8 is 7

Gattegno charts to the value of each digit in a 2-digit number; this resource helps children to build numbers and understand the value of the digits in the number



Place Value Arrow cards to show the value of each digit in a number



Number fans are a tool used in mathematics as an alternative to flashcards. They can be easier for younger children to handle and demonstrate 1 and 2-digit numbers.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

100 Grid counting to and across 100, forwards and backwards to familiarise children with numbers to 100

Vocabulary:

ones, tens, digit, one, one or two-digit number, 'teens' number, odd, even

place, place value, stands for, represents, the same number as, as many as, equal to, partition, order, regroup,

Of two objects/amounts

greater, more, larger, bigger, less, fewer, smaller, less,

Of three or more objects/amounts:

greatest, most, biggest, largest, least, fewest, smallest

one more, one less, compare, order, size

first, second, third… tenth… twentieth, twenty-first, twenty-second…

last, last but one, before, after, next, between, half-way between above, below

Equals, is the same as(including equals sign), Difference between, How many more to make…?, How many more is…than…?, How much more is…?, Subtract, take away, minus, How many fewer is…than…?, How much less is…?

Domain: **Number facts**

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Revision year R:

- I can count confidently to 10
- I know the value of each number to 10
- I know the relationships and patterns to numbers to 10
- I can look for patterns and relationships, spot connections

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- I can distribute items fairly, for example, put 3 marbles in each bag. Recognise when

New learning- KPIs:

- I can develop fluency in addition and subtraction facts within 10.
- I can count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.
- I can develop fluency in addition and subtraction facts within 10.

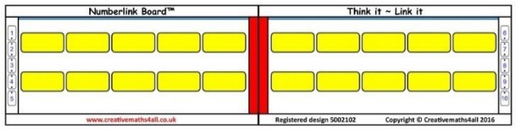
- **I can read and write numbers from 1 to 20 in numerals and words.**
- **I can count in multiples of twos, fives and tens (NPV NC statement)**

Visualisation:

Resources to support learning:

Cuisenaire rods where the orange rod can represent 1 whole

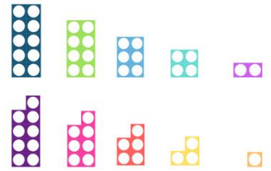
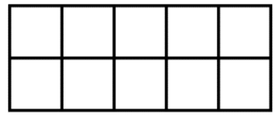
Number lines to show children equal intervals



Numberlink boards to show children the relationship of multiplication facts and to teach the 1, 10, 5 derive structure

Common misconceptions:

- Pupils who do not keep track of what has been counted.
- Pupils who keep counting by saying the number words in order but do not correspond this to a single object.
- Pupils reversing digits when writing numbers e.g. 31 rather than 13.
- Pupils who believe where the = sign is denotes the answer
- Pupils finding it difficult to count over boundaries e.g. 29 to 30 or backwards from 20 to 19.
- Pupils who can only count forwards that need to practise counting backwards more.
- Pupils not pronouncing 'ty' and 'teen' correctly andconfusion between '-ty' and '-teen' numbers as a result.

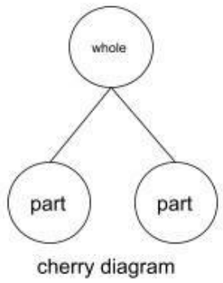
items are distributed unfairly.			
Phase 2			
Domain: **Addition and Subtraction (securing mental calculation)**			
Revision year R: • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. • I can understand the cardinal value of number words, for	**New learning- KPIs:** • I can compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers. • I can read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts. • I can learn and use number bonds to 10, for example:8 + _ = 10 Partition numbers within 10, for example: 5 = 2 + 3 • **I can read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs** • **I can represent and use number bonds and related subtraction facts within 20** • **I can add and subtract one-digit and two-digit numbers to 20, including zero** • **I can solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ___ – 9.**	**Resources to support learning:**  **Numicon** can be used to support children to understand the law of commutativity   **Tens frames** with **place value counters** to support children to understand that 10 of something fit into	**Common misconceptions:** • Pupils who do not keep track of what has been counted. • Pupils who keep counting by saying the number words in order but do not correspond this to a single object. • Pupils reversing digits when writing numbers e.g. 31 rather than 13. • Pupils who believe where the = sign is denotes the answer • Conservation of number is not secure. For example, pupils do not recognise that there is the same amount in a new arrangement or coins or counters, or when the

example understanding that 'four' relates to 4 objects. Subitise for up to to 5 items. Automatically show a given number using fingers.

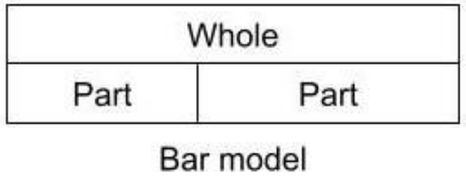
- I can devise and record number stories, using pictures, numbers and symbols (such as arrows).

Visualisation:

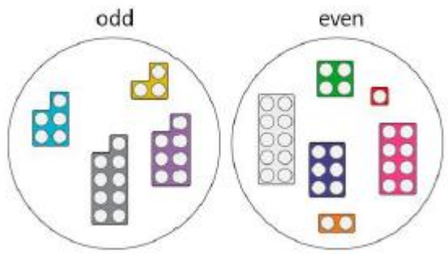
- **Part whole model** to show partitioning in a standard and non-standard way
- **Bar model** to model the partitioning of numbers
- **Number line** to show partitioned addition or subtraction and to model the strategy of counting on or counting back

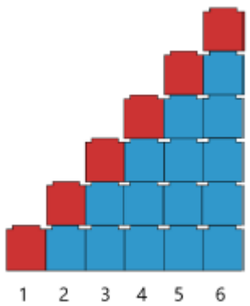


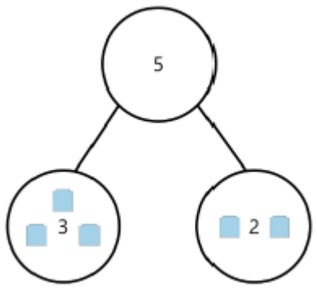
cherry diagram

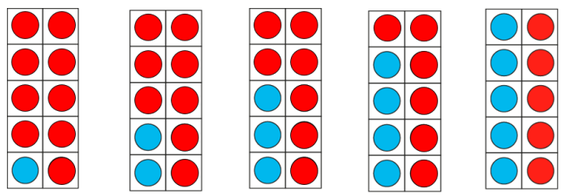


Bar model









1 + 9 = 10
9 + 1 = 10

2 + 8 = 10
8 + 2 = 10

3 + 7 = 10
7 + 3 = 10

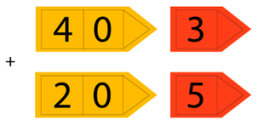
4 + 6 = 10
6 + 4 = 10

5 + 5 = 10

Dienes to show children the relationship between numbers and what 'ten times bigger' looks like

Place value counters and dienes to show the partitioning of two-digit and three-digit numbers

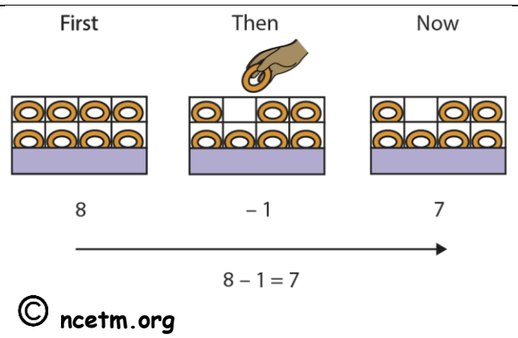
Number lines to show children the position of numbers including negative numbers and how to round to the nearest multiple of…



Place Value Arrow cards identify how digits change in addition and what this looks like when the number is blended back together

whole is split into parts and then recombined.

- In accurate use of comparative language
- Interpretation of the equals sign as where the answer goes rather than meaning 'equal to'.
- Pupils finding it difficult to count over boundaries e.g. 29 to 30 or backwards from 20 to 19.
- Pupils who can only count forwards that need to practise counting backwards more.
- Pupils not pronouncing 'ty' and 'teen' correctly and confusion between '-ty' and '-teen' numbers as a result.



Vocabulary:

Total, altogether, add, more than, put together, equals

Subtract, take away, minus, less than, fewer than, difference between

Domain: **Multiplication and division**

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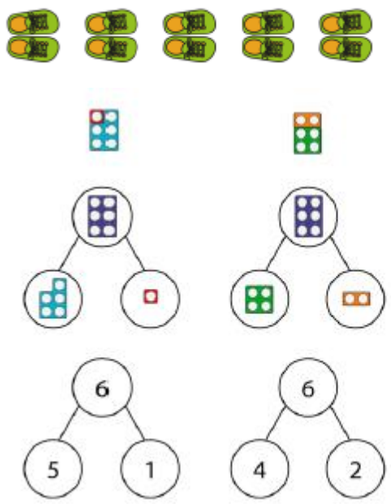
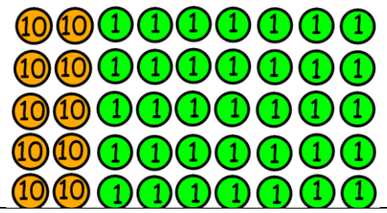
Revision year R:

New learning- KPIs:

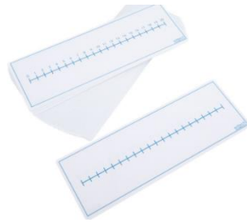
- I can count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.
- **I can count in multiples of twos, fives and tens (NPV NC statement)**
- **I can solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.**

Visualisation and context:





Resources to support learning:



Double sided number line whiteboards to show the relationship between multiplication families

Red and yellow counting stick to count up in multiples of and to help children identify patterns in times table families

Magnetic bar model set to show how many equal groups fit into a whole

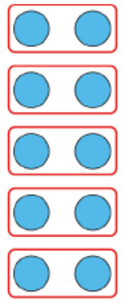
Place value counters for children who need to build arrays or to show 'groups of' in division

and

Place value counters for children to build long multiplication arrays and to apply the distributive law

Common misconceptions:

- Pupils who think sharing is always between 2 (which comes with practice of sharing with a 'friend' and connecting to counting in 2s).
- Pupils who do not understand halving and relate it to splitting/dividing something into 2 groups, equal or not.



$5 \times 2 = 10$

- *'There are five groups of two.'*
- *'Five groups of two is equal to ten.'*
- *'Five times two is equal to ten.'*

Vocabulary
Groups of, lots of, equal groups of, count on, count back,

Phase 3

Domain: **Fractions**

Revision year R:	**New learning- KPIs:**	**Resources to support learning:**	**Misconceptions:**
•	• **I can recognise, find and name a half as one of two equal parts of an object, shape or quantity** • **I can recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.**		•

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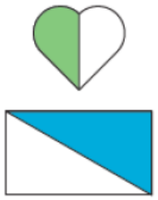
Visualisation and context:



Pattern blocks to support with teaching equivalent fractions

Vocabulary:

Domain: Geometry

Revision from year R:

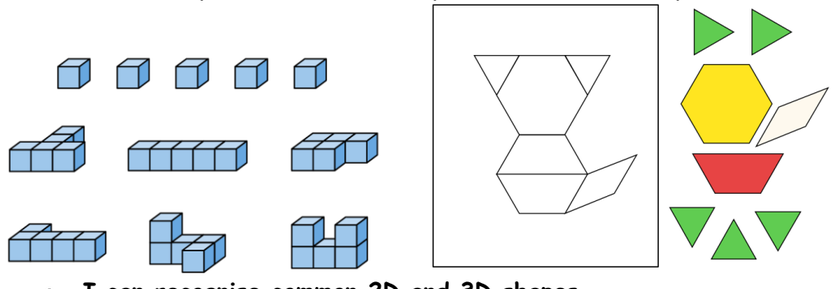
- I can look for patterns and relationships, spot connections
- I can see, explore and discuss models of common 2D and 3D shapes with varied dimensions and presented in different orientations (for example, triangles not always presented on their base).
- I can select, rotate and manipulate shapes for a particular purpose, for example:
  - rotating a cylinder so it can be used to build a tower
  - rotating a puzzle piece to fit in its place

New learning- KPIs:

- I can recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.
- I can compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.
- **I can recognise and name common 2-D and 3-D shapes, including:**
  - **2-D shapes [for example, rectangles (including squares), circles and triangles]**
  - **3-D shapes [for example, cuboids (including cubes), pyramids and spheres].**
- **I can describe position, direction and movement, including whole, half, quarter and three quarter turns.**
-

Visualisation and context:

- **1G-2 Compose 2D and 3D shapes from smaller shapes**



- **I can recognise common 2D and 3D shapes**

Resources to support learning:

Folding plastic geometric shapes to support children with classification of 3D shapes and to understand nets

Misconceptions:

- Pupils do not recognise shapes when presented in different orientations or of different sizes.

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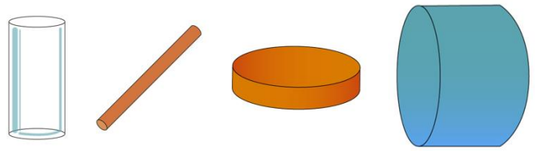

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Domain: Measurement

Revision from year R:

-

New learning-KPIs:

- **I can compare, describe and solve practical problems for:**
  - **lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]**
- **I can mass/weight [for example, heavy/light, heavier than, lighter than]**
- **I can capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]**
  - **time [for example, quicker, slower, earlier, later]**
- **I can measure and begin to record the following:**
  - **lengths and heights**
- **I can mass/weight**
  - **capacity and volume**
  - **time (hours, minutes, seconds)**
- **I can recognise and know the value of different denominations of coins and notes**
- **I can sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]**
- **I can recognise and use language relating to dates, including days of the week, weeks, months and years**
- **I can tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.**

Resources to support learning:

Plastic clocks to teach children how to read the time

Misconceptions:

- Reading the time and confusing the minute and hour hand
-

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	Visualisation and context: 		

Vocabulary:
Heavy, light, heavier than, lighter, full, empty, more than, less than, half full, quarter full, capacity, volume

Revision section:

Early Learning Framework statements

Early learning goals statements

New learning KPI's section:

Bold National Curriculum statements

Ready to progress statements