Number - number and place value

Pupils should be taught to:

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s
- given a number, identify 1 more and 1 less
- identify and represent numbers using objects and pictorial representations including the number line, - *Track is better to start in Year 1* - and use the language of: equal to, more than, less than (fewer), most, least
- read and write numbers from 1 to 20 in numerals and words

READY TO PROGRESS

Previous experience	Year 1 ready-to-progress criteria	Future applications
Begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10.	1NPV-1 Count within 100, forwards and backwards, starting with any number.	Count through the number system. Place value within 100. Compare and order numbers. Add and subtract within 100.
Play games that involve moving along a numbered track, and understand that larger numbers are further along the track.	1NPV-2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and = *NOT CROCODILES!*	Reason about the location of larger numbers within the linear number system. Compare and order numbers. Read scales.

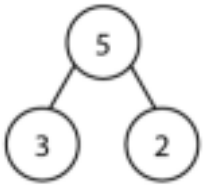
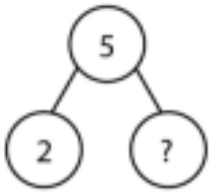
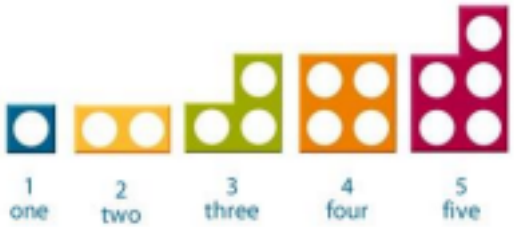
Small Steps

Autumn	
White Rose	NCETM
Place Value (within 10) • Count objects to 10 • Count forwards to 10 • Count backwards from 10 • Count one more for numbers within 10 • Count one less for numbers within 10 • Count one more one less Compare up to 10 objects • Introduce <, > and = for numbers within 10 with concrete and pictorial representations. • Compare numbers within 10 • Order up to 10 objects • Order numbers up to 10 • Ordinal numbers Number track games • Introduce the number line from 0 to 10 Place 1-9 on a 0 - 10 number line that is marked but unlabelled; estimate positions of 1-9 on an unmarked number line.	1.1 comparison of quantities and measures 1.2 introduce part/part whole 1.3 composition of number 0-5 1.4 Composition of number 6 - 10

STEM SENTENCES

Comparison of quantities and measures		
The ___ is heavier than the ___. The ___ is lighter than the ___.	Language	The elephant is heavier than the mouse. The mouse is lighter than the elephant.
The ___ is the same length as the ___. The ___ is the same length as the ___.	Language	 The pen is the same length as the pencil. The pencil is the same length as the pen.
There are more ___ than ___. There are fewer ___ than ___.	Language	There are more people than hats. There are fewer hats than people.

Composition of numbers inc. place value		
The ___ represents all the counters. The ___ represents the ___ counters.	Structure	

The ___ represents the ___ counters.		 The five represents all the counters. The three represents the blue counters. The two represents the red counters.
The whole is ___ and one part is ___ so the other part must be ___.	Structure	 The whole is five and one part is two so the other part must be three.
The number before a given number is one less. The number after a given number is one more.	Generalisation	
Adding one gives one more.	Generalisation	
Subtracting one gives one less.	Generalisation	

___ is five and ___ more.	Structure	Six is five and one more.

Spring	
White Rose	NCETM
Place Value (within 20) • Count forwards and backwards and write numbers to 20 • Count one more one less Compare groups of objects • Compare numbers • Order groups of objects • Order numbers	1.10 Composition of numbers 11 - 19

STEM SENTENCES

___ is equal to ten plus ___.	Structure	Twelve is equal to ten plus two.
This is ten ones. It is also one ten	Structure	

Summer	
White Rose	NCETM
Place Value (within 100) • Counting forwards and backwards within 50 • One more one less • Counting to 100 • Counting forwards and backwards within 100 • One more, one less	1.8 Composition of numbers multiples of 10 upto 100 1.9 Composition of numbers 20 - 100

STEM SENTENCES

___ ones are equal to ___ ten. We have ___ group(s) of ten. We have ___ ten(s).	Structure	Ten ones ae equal to one ten. We have one group of ten. We have one ten.

This is the number ___. The ___ represents ___ tens.	Structure	This is the number ten. The 1 represents one ten.

There are ___ tens which is ___ and ___ ones which is ___. This makes ___ altogether. The ___ represents ___ tens. It has a value of ___. The ___ represents ___ ones. It has a value of ___.	Structure	There are two tens which is twenty and three ones which is three. This makes twenty-three altogether: 23. The '2' represents two tens. It has a value of twenty. The '3' represents three ones. It has a value of three.
All multiples of ten end with a zero.	Generalisation	
We have ___ tens. We call this ___.	Language/ structure	
This is the number ___. We write the ___ then the ___.	Structure	This is the number forty-two. We write the four then the two.

This is ___. Ten more than ___ is ___. ___ is ten more than ___. This is ___. Ten less than ___ is ___. ___ is ten less than ___.	Structure	This is thirty. Ten more than thirty is forty. Forty is ten more than thirty. This is forty. Ten less than forty is thirty. Thirty is ten less than forty.

Odd and even numbers		
___ is made of pairs; it is an even number. ___ is not made of pairs; it is an odd number.	Structure/ Language	6 is made of pairs; it is an even number. 7 is not made of pairs; it is an odd number.
Numbers that can be made out of groups of two are even numbers. Numbers that cannot be made out of groups of two are odd numbers.	Generalisation	

Even numbers can be partitioned into two odd parts or two even parts.	Generalisation	
Odd numbers can be partitioned into one odd part and one even part.	Generalisation	
If the whole is odd and one part is even, the other part must be odd. If the whole is odd and one part is odd, the other part must be even. If the whole is even and one part is even, the other part must be even. If the whole is even and one part is odd, the other part must be odd.	Generalisation	

Number - addition and subtraction

Pupils should be taught to:

- read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including 0
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? − 9

READY TO PROGRESS

Previous experience	Year 1 ready-to-progress criteria	Future applications
Begin to experience partitioning and combining numbers within 10.	1NF-1 Develop fluency in addition and subtraction facts within 10.	Add and subtract across 10. All future additive calculation. Add within a column during columnar addition when the column sums to less than 10 (no regrouping). Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging).
Understand the cardinal value of number words, for example understanding that 'four' relates to 4 objects. Subitise for up to to 5 items. Automatically show a given number using fingers.	1AS-1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.	Add and subtract within 10.
Devise and record number stories, using pictures, numbers and symbols (such as arrows).	1AS-2 Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.	Represent composition and decomposition of numbers using equations.

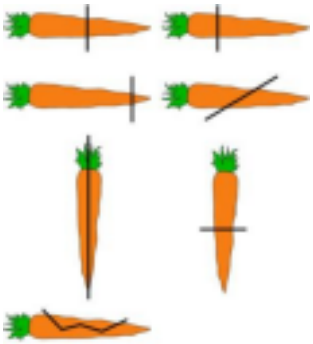
SMALL STEPS

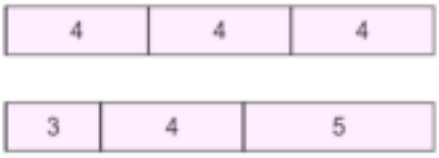
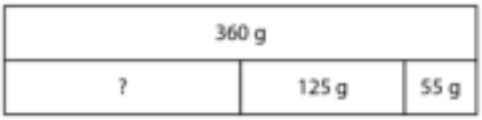
Autumn	
White Rose	NCETM
Addition and Subtraction (within 10) • Addition symbol • Fact families - addition facts • Find number bonds for numbers within 10 • Systematic methods for number bonds within 10 • Number bonds to 10 • Compare number bonds • Addition - adding together • Addition - adding more • Finding a part • Subtraction - taking away - crossing out	1.2 - introducing part/part whole 1.5 Additive structures: introduction to aggregation and partitioning 1.6 additive structures: Introduction to augmentation and reduction

• Subtraction - taking away - using the symbol • Subtraction - find a part • Fact families - the 8 facts • Subtraction - counting back • Subtraction - finding the difference • Introducing parts and wholes (single object) • Part-whole model (with images) • Part-whole model	

STEM SENTENCES

Wholes and parts		
This is a whole ___ because I have all of it.	Language/ Structure	This is a whole apple because I have all of it.
This is not a whole ___ because I don't have all of it.	Language/ Structure	This is not a whole carrot because I don't have all of it. This is not a whole carrot because I only have part of it.
This is not a whole ___ because I only have part of it.	Language/ Structure	
A whole can be split into two parts in lots of different ways.	Generalisation	

A whole is always bigger than a part of the whole.	Generalisation	
A part is always smaller than its whole.	Generalisation	
A whole can be split into more than two parts in lots of different ways.	Generalisation	
This is a whole group of ___ because none are missing; I have all of them.	Structure	This is a whole group of cakes because none are missing; I have all of them.
This is not a whole group of ___ because we don't have all of them; some of them are missing.	Structure	This is not a whole group of cakes because we don't have all of them; some of them are missing.

This is not a whole group of ___ because only part of the ___ has ___ in.	Structure	This is not a whole group of cakes because only part of the tray has cakes in.
This is the whole group of ___. I have all of them.	Language/ Structure	This is the whole group of Charlotte's cars. I have all of them.
There are ___ ___ in the whole group. There are ___ ___ in this part of the group.	Structure	There are four pencils in the whole group. There are three pencils in this part of the group
___ is the whole; ___ is a part and ___ is a part.	Structure	3 is the whole; 1 is a part and 2 is a part.
A whole split into equal parts can be seen as both an additive and a multiplicative structure. A whole split into unequal parts can be seen as an additive structure.	Generalisation	
The whole minus the known part(s) is equal to the missing part. The sum of the known part(s) plus the missing part is equal to the whole	Generalisation	

Additive structures: aggregation and partitioning

There are ___ and ___. We can write this as ___ plus ___. The ___ represents the ___. The ___ represents the ___.	Structure	There are four open umbrellas and five closed umbrellas. We can write this as four plus five. The four represents the four open umbrellas. The five represents the five closed umbrellas.

___ is equal to ___ plus ___. ___ plus ___ is equal to ___. ___ and ___ are the addends. ___ is the sum.	Structure	Five is equal to four plus one. Four plus one is equal to five. Four and one are the addends. Five is the sum.
Addend plus addend equals sum. Sum equals addend plus addend.	Language	

Additive structures: augmentation and reduction		
First… then… now… See: ncetm_mm_sp1_y1_se06_teach.pdf for lots more examples of how to use 'first… then… now' in the context of augmentation and reduction.	Language	First, four children were sitting on the bus. Then three more children got on the bus. Now seven children are sitting on the bus. First, there were four children in the car. Then one child got out. Now there are three children in the car.

Spring	
White Rose	NCETM
Addition and Subtraction (within 20) Add by counting on within 20 • Add by making 10 • Subtraction - not crossing 10 • Subtraction - not crossing 10 (counting back) • Subtraction - crossing 10 (1) • Subtraction - crossing 10 (2) • Related facts	1.7 addition and subtraction: strategies within 10

STEM SENTENCES
Enigma-Stem-Sentence-bank-Number-Addition-Subtraction.pdf

Summer	
White Rose N/A Use previous learning to aid understanding of Mult/Div Repeated addition / repeated subtraction	NCETM N/A

Commutative law	

Number - multiplication and division

Pupils should be taught to:

- 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

Notes and guidance (non-statutory)

Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.

They make connections between arrays, number patterns, and counting in 2s, 5s and 10s.

READY TO PROGRESS

Previous learning	Year 1	Future Applications
Distribute items fairly, for example, put 3 marbles in each bag. Recognise when items are distributed unfairly.	1NF-2 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.	Recall the 2, 5 and 10 multiplication tables. Carry out repeated addition and multiplication of 2, 5, and 10, and divide by 2, 5 and 10. Identify multiples of 2, 5 and 10. Unitise in tens. Identify odd and even numbers

SMALL STEPS

Summer	
White Rose	NCETM
Count in 2s • Count in 5s • Count in 10s • Counting in Coins	2.1 Cunting, Unitising and coins

STEM SENTENCES

Enigma-Stem-Sentence-bank-multiplication-and-division-with-links.pdf

A COLLECTION OF STEM SENTENCES FROM ENIGMA MATHS HUB BASED ON THE NCETM PD MATERIALS

Unitizing		
Example of stem sentence	Type of stem sentence	Examples from the NCETM PD Materials
This counter has _____ dots. It is worth ____	Structure	How much is each counter worth?  This counter has 2 dots. It is worth 2. e. g The counter has 2 dots. It is worth 2.

This is a ____ pence coin, It has value of ____p	Structure	 This is a 5p coin. It has a value of 5p.
I say two pence but I think two one pennies **I say five pence but I think five one pennies.** **I say ten pence but I think ten one pennies.**	**Generalisation**	 I say ten pence but I think ten one pennies.
Each _____ has ____ parts Count in groups of _____	Language/ structure	Each bike has 2 wheels. Count in groups of 2. 

Number - fractions - can be entirely left to Year 2

Pupils should be taught to:

- recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity
- recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity

IT IS RECOMMENDED TO MOSTLY LEAVE FRACTIONS CONTENT TO YEAR 2
But within multiplication and division; summer fluency, shape, Maths through Art, measures it would be good to introduce and learn about the two above points.

There is no RTP criteria for fractions.

Small steps - if you want to follow White Rose

Summer	
White Rose	
Find a half Find a quarter	

Geometry - properties of shapes

Pupils should be taught to:

- 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]

Position and direction

Pupils should be taught to:

- describe position, direction and movement, including whole, half, quarter and three-quarter turns

READY TO PROGRESS

Previous learning	Year 1	Future Applications
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)	1G-1 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	Describe properties of shape. Categorise shapes. Identify similar shapes.
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	1G-2 Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.	Find the area or volume of a compound shape by decomposing into constituent shapes. Rotate, translate and reflect 2D shapes. Identify congruent shapes.

Small Steps

White Rose Maths	
Geometry : Shape • Recognise and name 3-D shapes • Sort 3-D shapes • Recognise and name 2-D shapes • Sort 2-D shapes Patterns within shape	**Note this may be brand new content for year 1. try to make this block as practical as possible and use outdoor space to explore shapes in nature.**
Geometry: position and Direction Describe turns Describe position	**Practical activities are encouraged to help children understand how to describe position Direction and movement including whole half Quarter and three quarter turns.** **Consider and fitting the language off half Quarter and three quarters if fractions is not to be covered.** **Try to incorporate this into PE lessons.**

Measurement

Pupils should be taught to:

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

Ready to Progress Criteria
There is none for any of the measures in Year 1

SMALL STEPS

<u>Measurement Length and Height</u> Compare lengths and Heights Measure lengths	**This should be a very practical block of learning and prior learning on Place Value and Addition & Subtraction can be consolidated and extended.**
<u>Measurement: Weight and Volume</u> Introduce weight and mass Measure Mass Compare Mass Introduce Capacity and Volume Measure Capacity Compare Capacity	**Measuring and comparing activities can be brought to life using real examples that will develop children's understanding of the world around them. Similarly to the length and height block, this block is useful to consolidate place value and addition and subtraction.**
<u>Measurement: money</u> Recognising coins recognising notes Counting in coins	**When counting in coins focus on 1p 2p 5p and 10p coins to build on understanding of counting in ones twos fives and tens from earlier in the year**
<u>Measurement: time</u> Before and after Dates Time to the hour Time to the half hour Writing time	**You may choose to admit these steps to focus on some of the earlier learning on place value and addition and subtraction. Time will be Revisited in year 2 or could be taught through short daily inputs throughout the year.**

Comparing time	