Calculation Policy - linked to White Rose (tailored to fit our school)
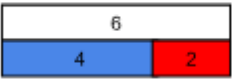
The calculation policy is divided into four sections (click on the links to access the relevant section):
- addition,
- subtraction,
- multiplication
- division.

Each section starts with an overview of the progression of skills.

The calculation policy follows the same concrete, pictorial, abstract approach as our main schemes of learning. Where appropriate, sentence stems and key questions are included alongside the key representations.
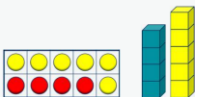
Where skills are divided into more than one section across the page, there is a progression in the level of difficulty from left to right. For example, when studying bonds within 10, children need to be able to identify the parts within a group, before partitioning a number into parts to finally recall the abstract facts with understanding.

Bonds within 10 Include bonds for each number within 10 Encourage noticing patterns.	… is made of … and … … and … make …	… can be partitioned into … and … 6 / 4 2	… plus … is equal to … $6+0=6$ $5+1=6$ $4+2=6$ $3+3=6$ $2+4=6$ $1+5=6$ $0+6=6$

ADDITION PROGRESSION

Nursery	Reception	Year 1
- Subitise to 3 - Count how many - Make numbers to 5 - Add 1 more (through songs and rhymes)	- Conceptually subitise to 5 - 1 more - Notice the composition of numbers within 10 - Combine 2 groups - Add more	- Add together - Add more - Bonds within 10 - Related facts within 20 - Missing numbers

Nursery	• Begin to have an understanding of numbers to 5 • We recommend focusing on noticing and representing small quantities, perceptual subitising, counting.	
Progression of skills	**Key representations**	
Subitise to 3 Instantly see how many. Begin to link numerals to quantities.	How many do you see?	
Count how many Begin to count objects using 1-1 correspondence.	How many are there?	Count out … from a larger group. E.g. Collect 3 beanbags for a game.
Make numbers to 5 Start by showing 1, 2 and 3 using fingers.	Show me…	Begin to link numerals to quantities.
Add 1 more Through stories, songs and rhymes.	How many do I have now?	

Reception	• Have a deep understanding of numbers 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 and some number bonds to 10, including double facts.	
Progression of skills	**Key representations**	
Conceptually subitise to 5 Notice the parts making up the whole.	What do you see? How do you see it?	
1 more Continue to link to stories, songs and rhymes.	1 more than … is …	
Notice the composition of numbers within 10 Link to stories, songs and rhymes.	How many…? How many altogether?	How many ways can you make…?
Combine 2 groups 2 groups are combined to find the total.	There are …. There are …. There are …. altogether.	….. and …. make …

SUBTRACTION PROGRESSION

Nursery	Reception	Year 1
• Subitise to 3 • Count how many • Make numbers to 5 • Take 1 away (through songs and rhymes)	• Conceptually subitise to 5 • 1 less • Notice the composition of numbers within 10 • Partition • Take away	• Find a part • Take away • Bonds within 10 • Related facts within 20 • Missing numbers

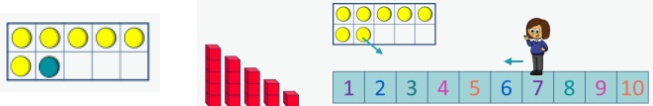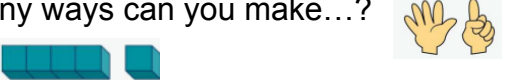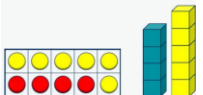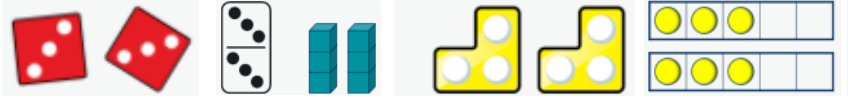| Nursery	• Begin to have an understanding of numbers to 5 • We recommend focusing on noticing and representing small quantities, perceptual subitising, counting.	
Progression of skills	**Key representations**	
Subitise to 3 Instantly see how many.	How many do you see?	
Count how many Begin to count objects using 1-1 correspondence.	How many are there?	Count out … from a larger group. E.g. Collect a cup for everyone at the table.
Make numbers to 5 Start by showing 1, 2 and 3 using fingers.	Show me…	Begin to link numerals to quantities.
Add 1 more Through stories, songs and rhymes.	How many do I have now?	

Reception	• 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 (and some subtraction facts) and some number bonds to 10, including double facts.
Progression of skills	**Key representations**
Conceptually subitise to 5 Notice the parts that make up the whole.	What do you see? How do you see it?

1 less Continue to link to stories, songs, rhymes.	1 less than … is …	
Notice the composition of numbers within 10 Link to stories, songs and rhymes.	How many…? How many altogether?	How many ways can you make…?
Partition Using objects, explore different ways to partition a number into 2 or more parts.	There are …. There are …. There are …. altogether.	… and … make …
Take away A quantity is reduced.	First … Then … Now …	I have …. I take … away. Now I have …

MULTIPLICATION PROGRESSION

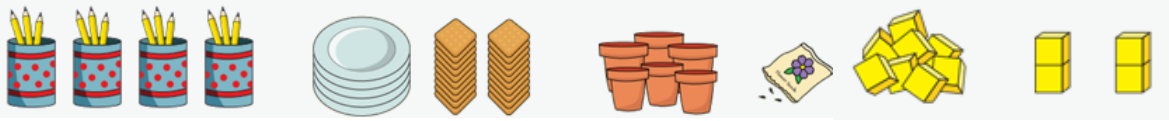| Nursery	Reception	Year 1
● Continue with counting and subitising skills as a foundation for later work on equal groups. (see addition and subtraction sections)	● Double to 10 ● Make equal groups	● Count in 2s, 5s and 10s ● Add equal groups ● Make arrays ● Make doubles

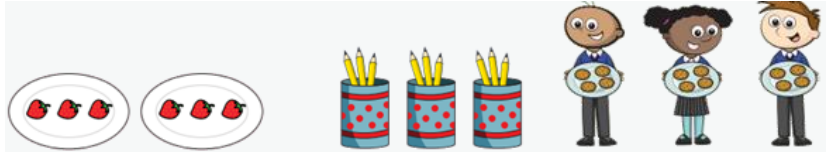| **Reception**	● Have a deep understanding of number to 10, including the composition of each number. ● Subitise (recognise quantities without counting) up to 5 ● Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds to 10, including double facts. ● Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
Progression of skills	**Key representations**
Double to 10 Prompt children to notice that double means twice as many and to notice that there are two equal groups.	Double … is … … is double …

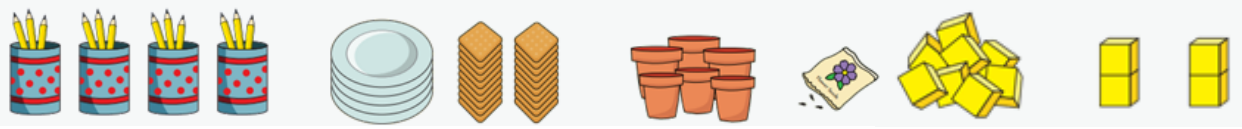| **Make equal groups** Provide opportunities to make equal groups when tidying up or during snack time. Encourage children to check that each group has the same amount.	There are … groups of … There are … altogether.

DIVISION PROGRESSION

Nursery	Reception	Year 1
● Continue with counting and subitising skills as a foundation for later work on equal groups. (see addition and subtraction sections)	● Sharing ● Grouping	● Make equal groups – grouping ● Make equal groups – sharing ● Find a half ● Find a quarter

Reception	● 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 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.
Progression of skills	**Key representations**
Sharing Provide practical activities such as sharing items during snack time. Encourage children to check whether items have been shared fairly (equally).	There are … altogether. They are shared equally between … groups.
Grouping Provide opportunities to make equal groups when tidying up or during snack time. Encourage children to check that each group has the same amount.	There are … groups of … There are … altogether.