



Mathematics

Maths knowledge and skill progression



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This document outlines the progression of Mathematical skills and knowledge from EYFS to Year 6. This version is aligned with White Rose Maths 3.0 long term overviews showing where particular statements are covered. For instance, if a column has Spring 1 underneath it then some or all of those statements will be covered then. The progression within this document also aligns with the Ready-To-Progress criteria released in 2021.

The EYFS statements correlate with the current EYFS assessment framework. The Y2 statements referred to in the end of KS1 teacher assessment framework document are highlighted in ... to show where they are covered throughout the year.

The appendices in this document show White Rose Maths curriculum and Ready-To-Progress curriculum overview which can be referred to throughout this document.

Key of Text Colours:
 EYFS Development Matters (DM) Objectives & NC Objectives
 Key concepts that create solid foundations in EYFS to build upon for the NC Objectives

Addition and subtraction

Calculations Y1 – Y6: (Taken from White Rose Maths National Curriculum and ‘Ready to Progress’ mapping)

Y1	Y2	Y3	Y4	Y5	Y6
add and subtract one-digit and two digit numbers to 20, including zero	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: ➤ a two-digit number and ones ➤ a two-digit number and tens ➤ two two-digit numbers ➤ adding three one digit numbers	add and subtract numbers mentally, including: ➤ a three-digit number and ones ➤ a three-digit number and tens ➤ a three-digit number and hundreds Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) add and subtract numbers mentally with increasingly large numbers	perform mental calculations, including with mixed operations and large numbers use their knowledge of the order of operations to carry out calculations involving the four operations
Autumn 2 Spring 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2

Problems Y1 – Y6:

Y1	Y2	Y3	Y4	Y5	Y6
<p>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \chi - 9$</p>	<p>solve problems with addition and subtraction:</p> <ul style="list-style-type: none"> ➤ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ➤ applying their increasing knowledge of mental and written methods 	<p>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p>solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why</p>	<p>solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why</p> <p>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p>	<p>solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why</p>
<p>Autumn 2 Spring 2</p>	<p>Autumn 2</p>	<p>Autumn 2</p>	<p>Autumn 2</p>	<p>Autumn 2</p>	<p>Autumn 2</p>

Declarative, procedural and conditional knowledge and skills.

Nursery 30-50 months	Reception 40-60 months+	Y1	Y2	Y3	Y4	Y5	Y6
Number bonds (declarative content)							
<p>Can begin to look closely at numbers to see what else they can see e.g. the ladybird has 3 spots altogether. I can see 2 and 1 OR 1 and 1 and 1</p>	<p>Finds the total number of items in two groups by counting all of them</p> <p>Can count a number of things in two groups and recognise that when recombined these still make the same total</p> <p>Can partition numbers in different ways with the aim to identify pairs of numbers that make a total: two groups at first but then understanding we can partition into more than 2 groups</p> <p>ELG: Using quantities and objects, they add and subtract two single-digit numbers and count</p>	<p>represent and use number bonds and related subtraction facts within 20</p>	<p>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p>				

	on or back to find the answer.						
Mental calculation (declarative and procedural content)							
Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same	<p>Finds the total number of items in two groups by counting all of them</p> <p>Can count a number of things in two groups and recognise that when recombined these still make the same total</p> <p>Can partition numbers in different ways with the aim to identify pairs of numbers that make a total: two groups at first but then understanding</p>	add and subtract one digit and two-digit numbers to 20, including zero	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: * a two-digit number and ones * a two-digit number and tens * two two-digit numbers adding three one-digit numbers	add and subtract numbers mentally, including: 1. a three-digit number and ones 2. a three-digit number and tens 3. a three-digit number and hundreds		add and subtract numbers mentally with increasingly large numbers	perform mental calculations, including with mixed operations and large numbers

	<p>we can partition into more than 2 groups.</p> <p>Can partition into more than 2 groups can say how many are hidden in a known number of things e.g. five toys go into the tent, 2 come out. How many are left in the tent?</p> <p>In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting.</p> <p>ELG: Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.</p>	<p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)</p>	<p>show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p>				<p>use their knowledge of the order of operations to carry out calculations involving the four operations</p>
Written methods (Procedural content)							
<p>Shows an interest in representing numbers.</p>	<p>In practical activities and discussion, beginning to use the vocabulary involved in adding and</p>	<p>read, write and interpret mathematical statements</p>		<p>add and subtract numbers with up to three digits, using formal</p>	<p>add and subtract numbers with up to 4 digits using the formal</p>	<p>add and subtract whole numbers with more than 4 digits, including</p>	

	subtracting. Records, using marks that they can interpret and explain	involving addition (+), subtraction (-) and equals (=) signs (Objective also shown in Mental Calculation)		written methods of columnar addition and subtraction	written methods of columnar addition and subtraction where appropriate	using formal written methods (columnar addition and subtraction)	
Inverse operations, estimating & checking answers							
	Estimates how many objects they can see and checks by counting them.	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	estimate the answer to a calculation and use inverse operations to check answers	estimate and use inverse operations to check answers to a calculation	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.	