SPJS CURRICULUM LADDER – MATHS – ADDITION AND SUBTRACTION

NUMBER BONDS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
⊙⊙ LINK IT (Algebra): represent and use number bonds and related subtraction facts within 20 1AS–1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.	⊙⊙ LINK IT (Algebra): recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 2AS–1 Add and subtract across 10.	3NF–1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice			

MENTAL CALCULATION

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
add and subtract one-digit and two-digit numbers to 20, including zero read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods) 1NF–1 Develop fluency in addition and subtraction facts within 10.	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 show that addition of 2 numbers can be done in any order (commutative), subtraction of one number from another cannot 2AS–3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two digit number. 2AS–4 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 twodigit 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 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

WRITTEN METHODS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction 3AS–2 Add and subtract up to three-digit numbers using columnar methods.	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)	

INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	LINK IT (Algebra): 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

PROBLEM SOLVING

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
LINK IT (Algebra): solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ **1AS–2 Read, write and interpret equations containing addition ( ), subtraction ( ) and equals ( ) symbols, and relate additive expressions and equations to real-life contexts.**	solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods **LINK IT (Measurement):** solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change **2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?"**	**LINK IT (Algebra):** solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction **3AS–3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.**	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why **LINK IT (Multiplication and Division):** solve problems involving addition, subtraction, multiplication and division **6AS/MD–4 Solve problems with 2 unknowns.**

OBJECTIVES BASED ON READY TO PROGRESS ONLY					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		3AS-1 Calculate complements to 100.			6AS/MD–1 Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number). 6AS/MD–2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.

Main objectives are taken from the National Curriculum.

Highlighted objectives are non-statutory and are taken from the Ready to Progress documents.

LINK IT: Indicates a link with another unit of work

Objectives written with a red heading and black writing MUST be taught within the unit

Objectives written in green are optional links – Discuss when possible and use for mental starters, extension tasks etc.