CAPTAIN WEBB PRIMARY SCHOOL
Maths Curriculum – Key Knowledge and Skills
(Bold-Statutory Statements from NC;

Italics-Non-statutory, but fundamental to ensure knowledge is secure)

		Daycare 2/Rising 3	Nursery Pre-School (3s)	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
CALCULATION + -										
Number Bonds										
DECLARATIVE KNOWLEDGE: Facts and formulae (Fluency) Relationships between facts			Knows that numbers are made up (composed) of smaller numbers. Knows that each counting number is one more than the number before.	Knows and recalls number facts and relationships to 10	**Knows that addition makes a larger total** **Knows that subtraction reduces the amount.** *Knows the operation required and calculates using counting and known facts.* **Knows number bonds to 10.** **Knows fact families to 10 then 20.**	**Knows addition and subtraction facts to 20 fluently.** **Knows related facts up to 100.**	*Knows bonds to 20 and 100(Y2).*		*Know decimal bonds to 1*	
PROCEDUAL KNOWLEDGE: Methods (In conjunction with calculation Policy). Relationships between	Knows how to compare amounts using	Knows how to separate a group of three to four objects in separate ways and	Knows how to automatically recall number bonds for numbers 0-5 and **some for**	Knows how to count on to find totals to 20. **Knows how to read, write**	**Knows how to use related facts to 20 when calculating.**	*Knows how to use number bonds to 10 to help with bonds to 20 and 100.*			

	words like more or lots.	knowing it is still the same	*10*, including corresponding partitioning facts. *Knows how to automatically the recall double facts up 5+5.* *Knows that each counting number is one more than the one before.* **Knows how to add and subtract 1 with numbers to 5**	**and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.**	**Knows how to use related facts up to 100 when calculating.**				

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CALCULATION +/-									
Mental Calculations									
DECLARATIVE KNOWLEDGE: Facts and formulae (Fluency) *Relationships between facts*			Knows and recalls number facts and relationships to 10.	*Knows that counting back is 'take away' and counting on is 'find the difference'.* *Knows doubles up to 20.*	**Knows that addition is the inverse to subtraction.** **Knows that addition is commutative.**	*Knows efficient mental strategies including partitioning and adjusting to add/subtract numbers mentally,*	*Knows efficient mental strategies including partitioning and adjusting to add/subtract numbers mentally,*	*Knows efficient mental strategies including partitioning and adjusting to add/subtract numbers mentally,*	**Knows efficient mental methods applying knowledge of properties of number.**
PROCEDUAL KNOWLEDGE: Methods (In conjunction with Calculation Policy). *Relationships between facts, procedures and missing facts.*			Knows how to subitize to 5. knows how to conceptually subitise larger numbers by subitising smaller groups within the number.	Knows how to add and subtract one digit and two-digit numbers to 20, including zero	Knows how to add and subtract numbers mentally using number sense, place value, bridging, near doubles and adjustment strategies.	Knows how to add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens	*Knows how to add and subtract numbers mentally with increasingly large numbers*	**Knows how to add and subtract numbers mentally with increasingly large numbers**	**Knows how to perform mental calculations, including with mixed operations and large numbers** **Knows how to use mental calculations with increasingly large numbers and more complex calculations.**

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						* a three-digit number and hundred			
	Daycare 2/Rising 3	Nursery Pre-School (3s)	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
CALCULATION +/-									
Written Methods									
DECLARATIVE KNOWLEDGE: Facts and formulae (Fluency) Relationships between facts		Knows that numbers can be represented in marks and signs.	Knows the language of 'more' and 'fewer' to compare two sets of objects.	Knows the effect of zero.	**Knows efficient strategies to add/subtract up to two digit numbers.**	Knows that adding/subtracting a multiple of 10 or 100 from a three digit number changes only one digit.	Knows efficient methods for addition and subtraction up to and including four-digit numbers.		Knows the compact algorithms for addition and subtraction.
PROCEDUAL KNOWLEDGE: Methods (In conjunction with Calculation Policy). Relationships between facts, procedures and missing facts			Knows how to use the vocabulary involved in adding and subtracting. **Know how to explore and work out mathematical problems, using signs and**	Knows how to represent and use number bonds and related subtraction facts within 20. **Knows how to read, write and interpret mathematical statements involving**	**Knows how to add and subtract numbers using concrete objects and pictorial representations** **Knows how to apply their increasing mental and written methods in context.**	**Knows how to add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction** Knows how to calculate with columnar	**Knows how to add and subtract using standard written algorithms.** Knows how to add/subtract numbers with **2 decimal places**, using **formal**	**Knows how to add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)**	Knows how to add/subtract **multi-digit numbers with more than 4 digits** (with up to 3 decimal places), using formal written methods (columnar addition) **Knows how to solve addition & subtraction multi-step problems in context.**

| | | | strategies with support. | addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation) | | *methods regrouping the tens and exchanging in subtraction.* | *written methods (columnar addition) including in the context of money.* | **Knows how to solve addition and subtraction multi-step problems in context.** | |
| | | | **Knows how to to explore and work out mathematical problems using standard numerals, tallies and + -** | | | *Knows the compact algorithms for addition and subtraction including regrouping and exchanging.* | | | |

CALCULATION +/-

Inverse Operations, Estimating & Checking Answers.

| DECLARATIVE KNOWLEDGE: | Facts and formulae (Fluency)Relationships between facts | | Knows that numbers are made up (composed) of smaller numbers. | | **Knows that addition subtraction are inverse operations.** | **Knows that addition is the inverse to subtraction.** | | *Knows the efficient written algorithms for addition and subtraction with increasing fluency for large numbers.* | **Knows that rounding can be used to check answers to calculations and determine, in the context of a problem, levels of accuracy** | *Knows the meaning of BIDMAS to help order the use of operations in a calculation.* |
| | | | *Knows that each counting number is one more than the number before.* | | | **Knows that addition is commutative** | | | | |

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		Knows how to compare amounts using words like more or lots.	Knows how to separate a group of three to four objects in separate ways and knowing it is still the same.	**Knows how to estimate a number of things showing understanding of relative size.** . -		**Knows how to use the inverse to check calculations**	**Knows how to estimate the answer to a calculation and use inverse operations to check answers** **Knows how to solve problems, including missing number problems.**	**Knows how to check the accuracy of addition and subtraction calculations using estimating and the inverse.** **Knows how to choose the order of calculations in two step problems.**	*Knows how to check the accuracy of addition and subtraction calculations using the inverse.*	**Knows how to use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.** **Knows how to use their knowledge of the order of operations to carry out calculations involving the four operations**
PROCEDUAL KNOWLEDGE:	**Methods (In conjunction with Calculation**									

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	Daycare 2/Rising 3	Nursery Pre-School (3s)	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Vocabulary		Numbers Add Take away equals	Add Take away equals **subitize** **number** **bonds** **more** **less** **put together**	Add Take away Equals subitize number bonds more less put together **altogether** **total** **the same as** **plus** **makes** **subtract** **difference** **between** **less than** **minus** **leaves** **fewer** **left over** **ones** **tens**	altogether total the same as plus makes subtract difference between less than minus leaves fewer left over ones tens **commutative** **inverse** **partition** **near double** **rearrange**	commutative inverse partition near double rearrange **hundreds** **boundary** **exchange** **carried** **digits**	hundreds boundary exchange carried digits **Increase** **decease**	Tenths hundredths	Tenths Hundredths thousandths

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