Year 1

Calculation policy

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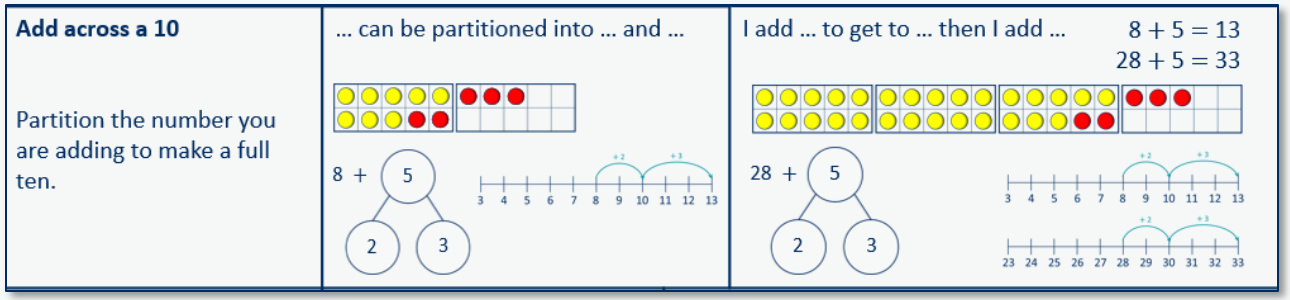
White Rose MATHS

Guidance for teachers

The calculation policy is divided into four sections: addition, subtraction, multiplication and division. At the start of each section, you will find an overview of the progression of skills. Calculations involving decimal numbers and fractions are included.

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 adding across a 10, children need to be able to add across 10 itself, before making links with related facts.



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Progression of skills – Addition

Reception	Year 1	Year 2
• 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	• Add 1s to any number (related facts) • Add three 1-digit numbers • Add across a 10 • Add multiples of 10 • Add 10s to any number • Add two 2-digit numbers (not across a ten) • Add two 2-digit numbers (across a ten) • Missing numbers

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Addition

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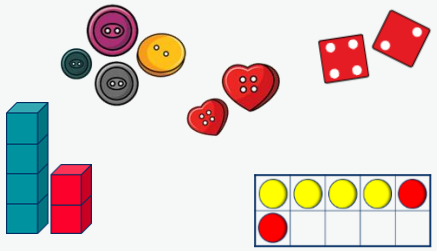
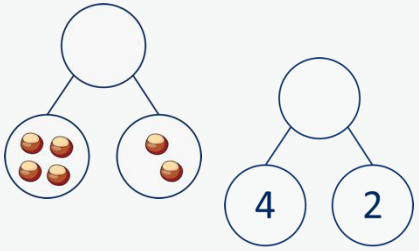
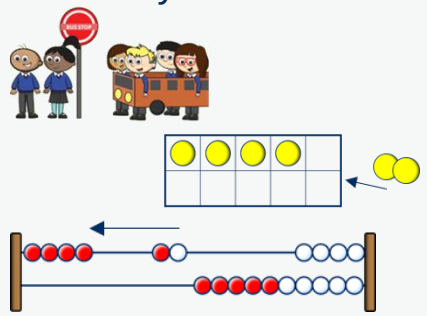
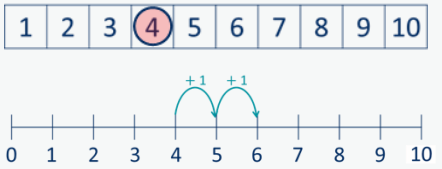
Year 1	• Read, write and interpret mathematical statements involving addition (+) and equals (=) signs. • Represent and use number bonds within 20 • Add 1-digit and 2-digit numbers to 20, including zero. • Solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as $7 = \square + 2$		
Progression of skills	**Key representations**		
Add together (aggregation) 2 quantities are combined to find the total.	¢ƘŜ₪Ŝ Ⅰ·₪Ŝ X ¢ƘŜ₪Ŝ Ⅰ·₪Ŝ X ¢ƘŜ₪Ŝ Ⅰ·₪Ŝ X Ⅰ·fűƨƎŜűƘŜ₪₱ 	X ƛă Ⅰ· LJⅠ·₪ű₱ X ƛă Ⅰ· LJⅠ·₪ű₱ X ƛă ûƘŜ ØƘƨfŜ₱ 	₱₱₱ LJfdză X ƛă ŜIjdzⅠ·f űƨ X X ƛă ŜIjdzⅠ·f űƨ X₱ + X 4 + 2 = 6 2 + 4 = 6 6 = 4 + 2 6 = 2 + 4
Add more (augmentation) A quantity is increased.	C₪ăűX ¢ƘŜyX bƨØX 	L ăűⅠ·₪ű Ⅰ·ű X L ∂dzY˙LJ ƨy˙X L fⅠ·yŘ ƨy˙X 	X LJfdză X ƛă ŜIjdzⅠ·f űƨ X ƛă ŜIjdzⅠ·f űƨ X + X 4 + 2 = 6 2 + 4 = 6 6 = 4 + 2 6 = 2 + 4

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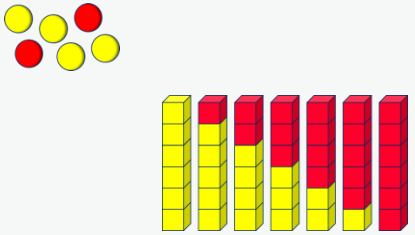
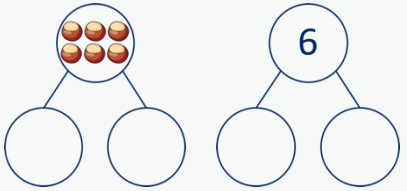
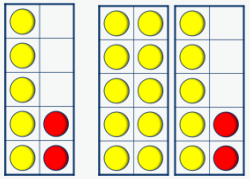
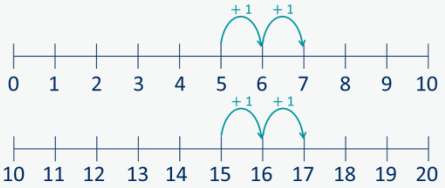
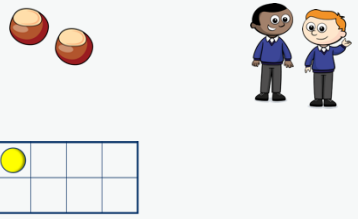
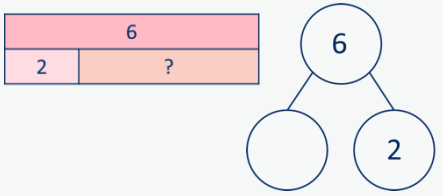
Addition

Progression of skills	Key representations		
Bonds within 10 Include bonds for each number within 10 Encourage children to notice patterns.	X ƛă Y˙I·ŘŜ 2ŦX I·yŘ X X I·yŘ X Y˙I·ʅŜ X 	X ŎI·y˙ōŜ LJI·Ŋǔƛúƛ2ySŘ ƛyű2 X I·yŘ X 	X LJfdză X ƛă ŜIjdzI·f ű2 X 6 + 0 = 6 5 + 1 = 6 4 + 2 = 6 3 + 3 = 6 2 + 4 = 6 1 + 5 = 6 0 + 6 = 6
Related facts within 20 Make links to known facts.	L ʅy2ǿ ǘKI·ǘ X I·yŘ ¢¢¢ = X ă2 X I·yŘ X = ... 	X Y˙2ŊŜ ǘKI·y˙X ƛă X ă2 X Y˙2ŊŜ ǘKI·y˙X ƛă X 	What patterns do you notice? 5 + 2 = 7 15 + 2 = 17 7 = 5 + 2 17 = 15 + 2
Missing numbers Make links to known facts.	How many more do you yŜŜŘ ű2 Y˙I·ʅŜ XK 	LŦ X ƛă ǘKŜ ǿK2fŜ I·yŘ X ƛă I· part, the other part must ōŜX 	X LJfdză X ƛă ŜIjdzI·f ű2 X 2 + □ = 6 6 = 2 + □

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Progression of skills - Subtraction

Reception	Year 1	Year 2
• 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	• Subtract 1s from any number (related facts) • Subtract across a 10 • Subtract multiples of 10 • Subtract 10s from any number • Subtract two 2-digit numbers (not across a ten) • Subtract two 2-digit numbers (across a ten) • Missing numbers

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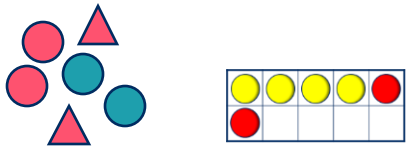
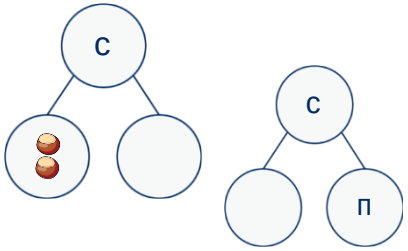
Subtraction

Year 1	• Read, write and interpret mathematical statements involving subtraction (ς) and equals (=) signs. • Represent and use number bonds and related subtraction facts within 20 • Subtract one-digit and two-digit numbers to 20, including zero. • Solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ ς 9		
Progression of skills	**Key representations**		
Find a part Link to number bonds and known facts. E.g. 2 + 4 = 6 so if 6 is the whole and 4 is a part, the other part must be 2	¢ƘŜNJŜ I·NJŜ X ƛƴűƨűI·f¢ X I·NJŜ X How many are **not** XK 	X ƛă űƘŜ ǿƘƨfŜ¢ X ƛă I· LJI·NJű¢ X ƛă I· LJI·NJű¢ 	X ădzōűNJI·Ŏű X ƛă ŜIjdzI·f ű2 X X ƛă ŜIjdzI·f ű2 X − X 6 − 2 = 4 6 − 4 = 2 4 = 6 − 2 2 = 6 − 4
Take away A quantity is decreased.	CNJăűX ¢ƘŜyX b2øX 	L ăűI·NJű I·ű X L ƨdzY˘LJ ōI·Ŏ] X L fI·yŘ ƨy˘X 	X Yˆƛyűdză X ƛă ŜIjdzI·f ű2 X X ƛă ŜIjdzI·f ű2 X − X 6 − 2 = 4 6 − 4 = 2 4 = 6 − 2 2 = 6 − 4

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