Calculation Policy

Year 1 to Year 6

Subtraction

Weddington

Introduction

Weddington Primary School uses the White Rose schemes of work as a planning guidance to teach a mastery approach from Reception to Year 6.

Therefore, Weddington Primary School has used the White Rose Calculation policy as a guidance to show the progression of addition skills taught from Year 1 to Year 6 at Weddington.

- There is a separate document that gives an overview of the different models and images (the concrete manipulatives and pictorial images that can support the teaching of the different concepts in the different operations). White Rose provides the explanation of the benefits of using the models and shows links between the different operations.
- First, there is a Key vocabulary all staff should be familiar with. as White Rose uses this language in their schemes of work.
- Next, an overview of the progression of the subtraction skills from Year 1 to Year 6.
- Then, a progression of subtraction skills linked to year groups to encourage and support consistency throughout the school. Each skill shows different models and images that could be used to effectively teach that concept.

Key vocabulary- All staff should be familiar with.

Addend - A number to be added to another.

Aggregation - combining two or more quantities or measures to find a total.

Augmentation - increasing a quantity or measure by another quantity.

Commutative – numbers can be added in any order.

Complement – in addition, a number and its complement make a total e.g. 300 is the complement to 700 to make 1,000

Difference – the numerical difference between two numbers is found by comparing the quantity in each group.

Exchange – Change a number or expression for another of an equal value.

Minuend – A quantity or number from which another is subtracted.

Partitioning – Splitting a number into its component parts.

Reduction – Subtraction as take away.

Subitise – Instantly recognise the number of objects in a small group without needing to count.

Subtrahend - A number to be subtracted from another.

Sum - The result of an addition.

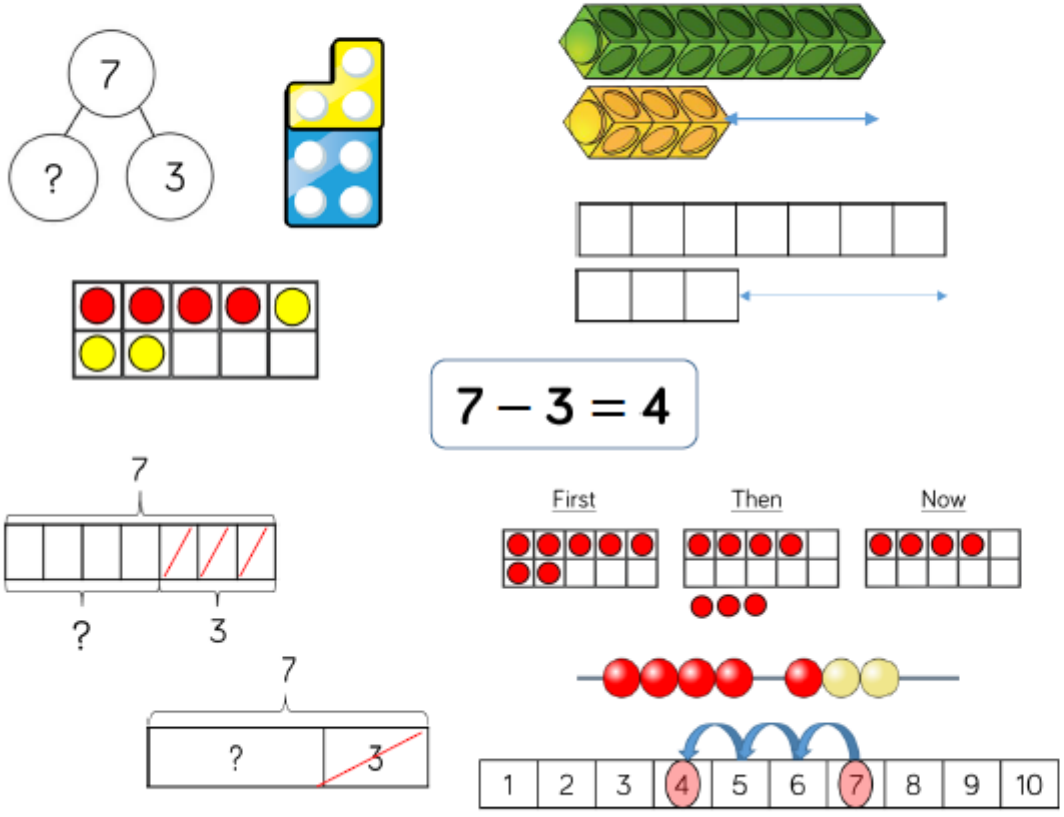
Total – The aggregate or the sum found by addition.

An Overview of Subtraction Skills

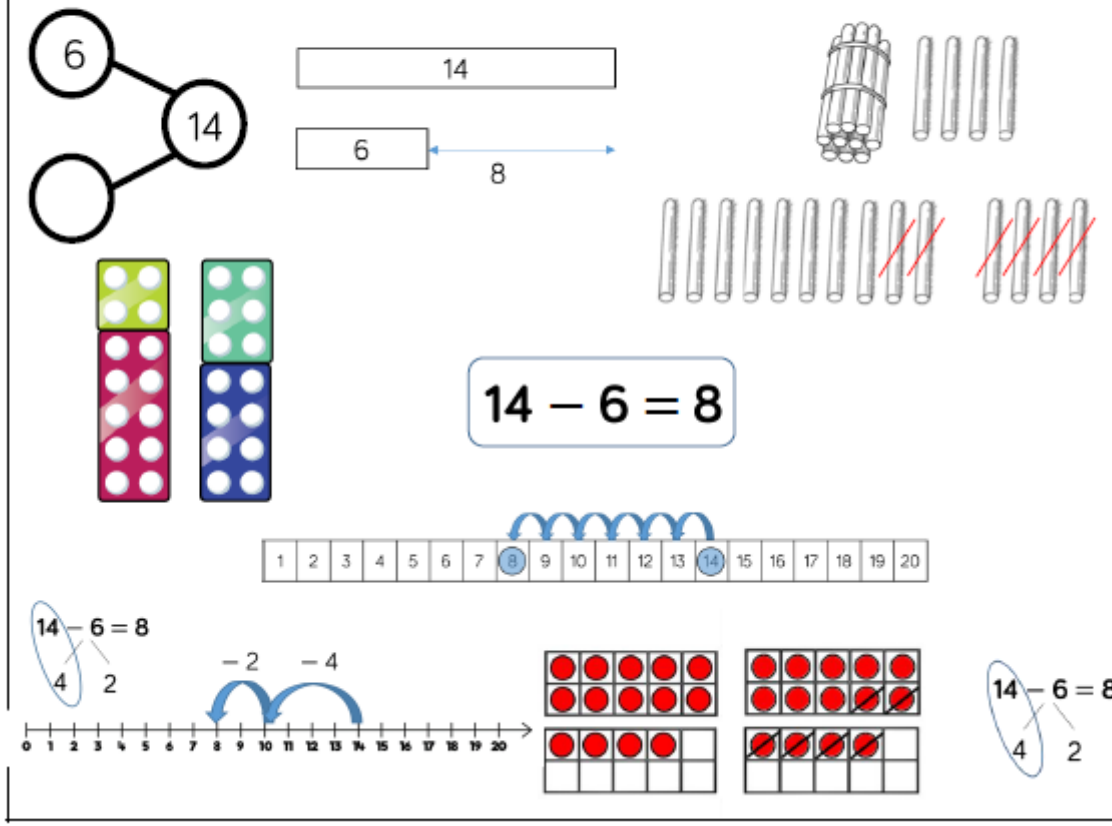
(from Year 1 to Year 6.)

Skill	Year	Representations and models	
Subtract two 1-digit numbers to 10	1	Part-whole model Bar model Number shapes	Ten frames (within 10) Bead strings (10) Number tracks
Subtract 1 and 2-digit numbers to 20	1	Part-whole model Bar model Number shapes Ten frames (within 20)	Bead string (20) Number tracks Number lines (labelled) Straws
Subtract 1 and 2-digit numbers to 100	2	Part-whole model Bar model Number lines (labelled)	Number lines (blank) Straws Hundred square
Subtract two 2-digit numbers	2	Part-whole model Bar model Number lines (blank) Straws	Base 10 Place value counters

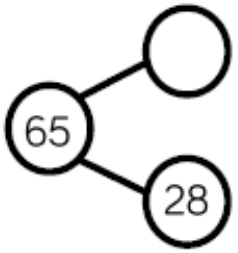
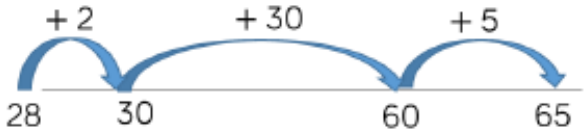
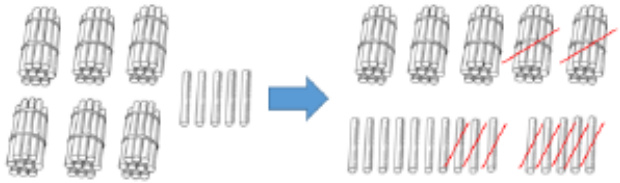
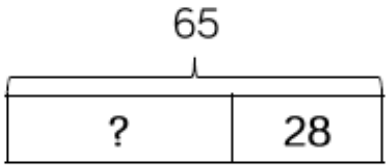
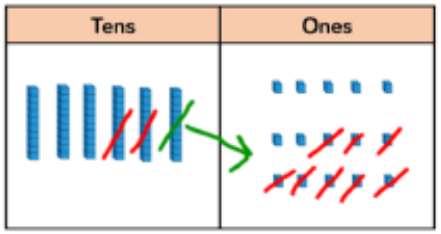
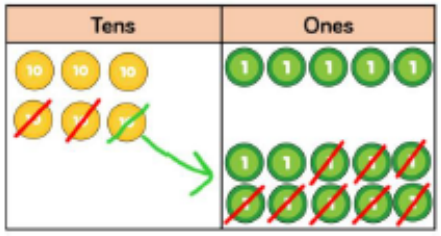
Skill	Year	Representations and models	
Subtract with up to 3-digits	3	Part-whole model Bar model	Base 10 Place value counters Column subtraction
Subtract with up to 4-digits	4	Part-whole model Bar model	Base 10 Place value counters Column subtraction
Subtract with more than 4 digits	5	Part-whole model Bar model	Place value counters Column subtraction
Subtract with up to 3 decimal places	5	Part-whole model Bar model	Place value counters Column subtraction

Skill: Subtract 1-digit numbers within 10	Year: 1
	Part-whole models, bar models, ten frames and number shapes support partitioning. Ten frames, number tracks, single bar models and bead strings support reduction. Cubes and bar models with two bars can support finding the difference.

Using a variety of manipulatives and different representations is essential for the children's learning and understanding.

Skill: Subtract 1 and 2-digit numbers to 20	Year: 1/2
	When subtracting one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten. Children should be encouraged to find the number bond to 10 when partitioning the subtracted number. Ten frames, number shapes and number lines are particularly useful for this.

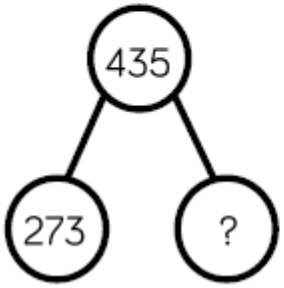
Using a variety of manipulatives and different representations is essential for the children's learning and understanding.

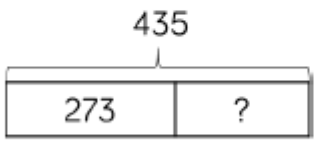
Skill: Subtract 1 and 2-digit numbers to 100	Year: 2
    $65 - 28 = 37$  5 1 65 − 28 37 	At this stage, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient. Children can also use a blank number line to count on to find the difference. Encourage them to jump to multiples of 10 to become more efficient.

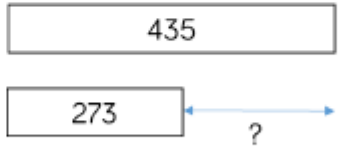
Using a variety of manipulatives and different representations is essential for the children's learning and understanding.

Skill: Subtract numbers with up to 3 digits

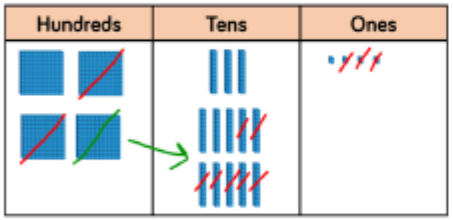
Year: 3



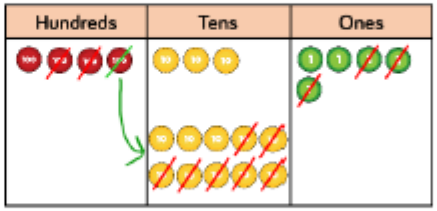




435 − 273 = 262



$$\begin{array}{r} {}^{3}\not{4}\,{}^{1}35 \\ -\ 273 \\ \hline 262 \end{array}$$



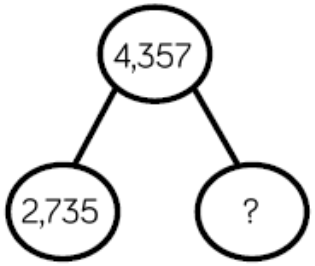
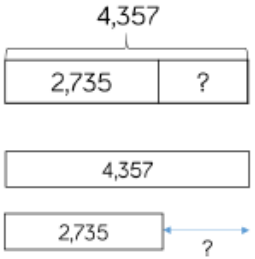
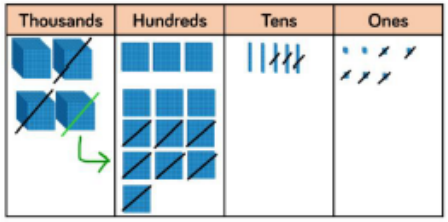
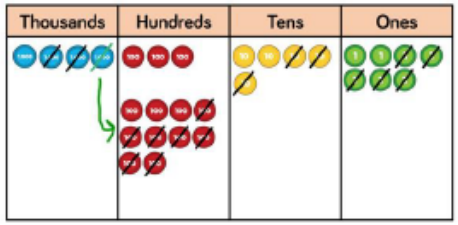
Base 10 and place value counters are the most effective manipulative when subtracting numbers with up to 3 digits.

Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.

Plain counters on a place value grid can also be used to support learning.

In Year 3, allow the children time to use the Base 10 and place value counters to create three-digit numbers and adding three - digit numbers together.

In Weddington, when using the column method for subtraction, the children are encouraged to use headings and tick the ones column.

Skill: Subtract numbers with up to 4 digits	Year: 4
  3 1 4357 − 2735 1622 **4,357 − 2,735 = 1,622**  	Base 10 and place value counters are the most effective manipulatives when subtracting numbers with up to 4 digits. Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method. Plain counters on a place value grid can also be used to support learning.

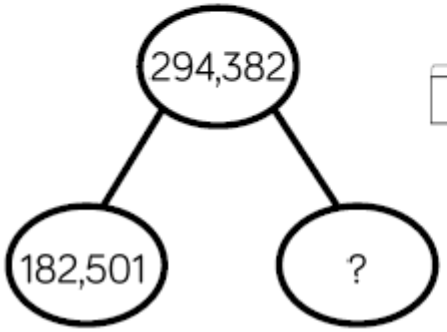
In Year 4, place value counters are the main manipulative for the children to use supported by a variety of other concrete resources.

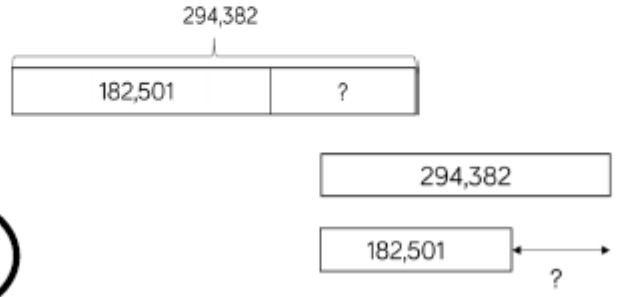
In Weddington, when using the column method for subtraction the children are encouraged to use headings and tick the ones column.

Use a comma when writing 4 digit numbers and above

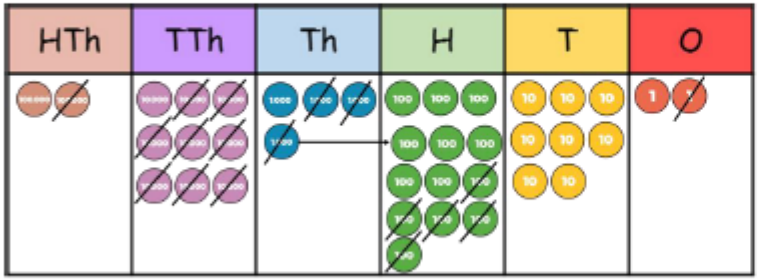
Skill: Subtract numbers with more than 4 digits

Year: 5/6





294,382 − 182,501 = 111,881

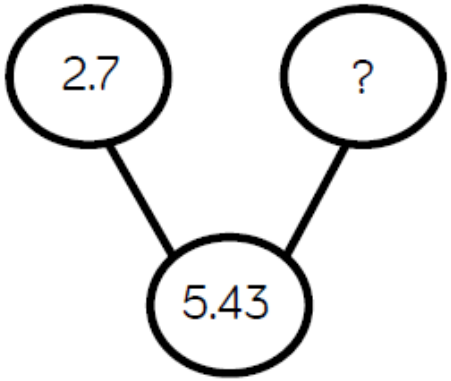
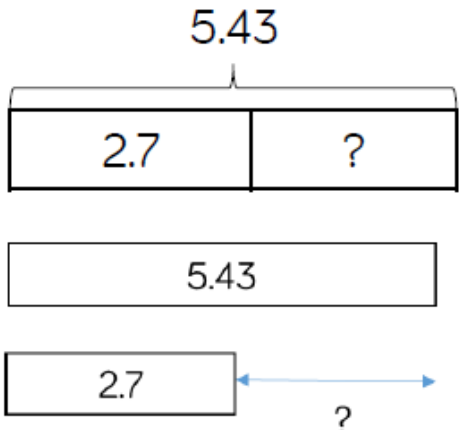
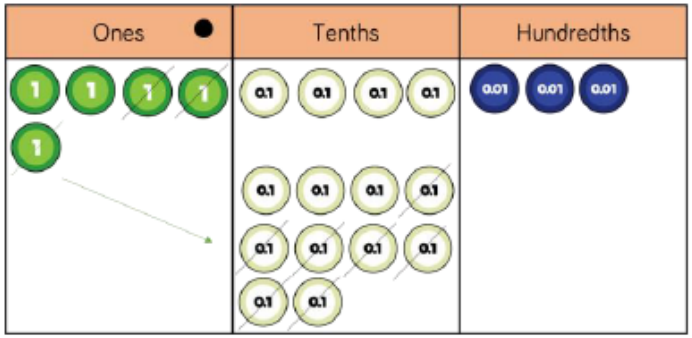
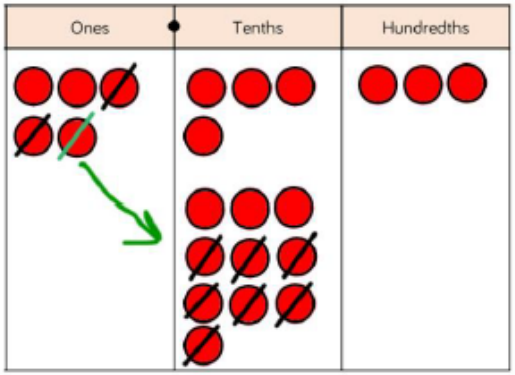


	2	9	$\cancel{3}$	$^{1}\cancel{3}$	8	2
−	1	8	2	5	0	1
	1	1	1	8	8	1

Place value counters or plain counters on a place value grid are the most effective concrete resource when subtracting numbers with more than 4 digits.

At this stage, children should be encouraged to work in the abstract, using column method to subtract larger numbers efficiently.

In Year 5 and 6, the teacher will assess the needs of the children and those that still need the headings to add formally will use them, while the other children will use the column method (with no headings) to subtract numbers greater than 4 digits.

Skill: Subtract with up to 3 decimal places	Year: 5/6
  $^{4}\not{5}.^{1}43$ $-\ 2.7$ 2.73 **5.43 − 2.7 = 2.73**  	Place value counters and plain counters on a place value grid are the most effective manipulative when subtracting decimals with 1, 2 and then 3 decimal places. Ensure children have experience of subtracting decimals with a variety of decimal places. This includes putting this into context when subtracting money and other measures.