

Progression in Calculations. Y3

Subtraction.

Year 3

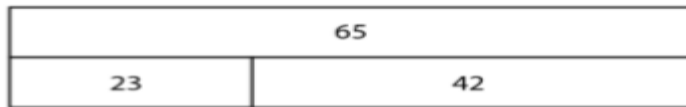
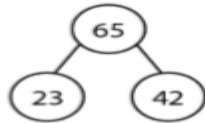
Subtract Multiples of 100

Children will apply their prior knowledge of subtracting ones and tens to subtracting multiples of 100. Using concrete manipulatives and pictorial representations throughout is important so the children can see the value of the digits.

Use a range of familiar representations of a given calculation alongside the column-subtraction layout so that children see the relationship between the numbers, including:

Part-part-wholes
Dienes

Part-part-wholes:

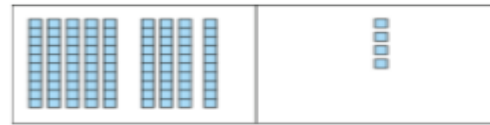


Column subtraction:

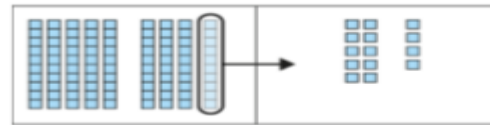
$$\begin{array}{r} 65 \\ - 23 \\ \hline 42 \end{array}$$

Example turn with Dienes and column subtraction:

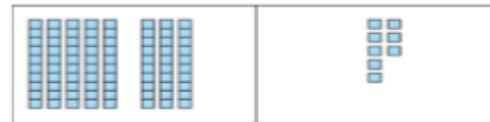
$$94 - 6$$



10s	1s
9	4
-	6
<hr/>	



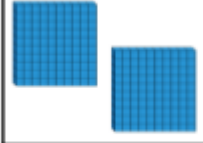


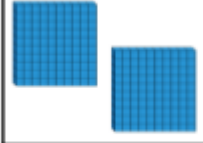


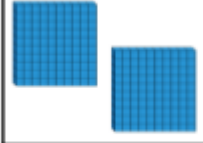


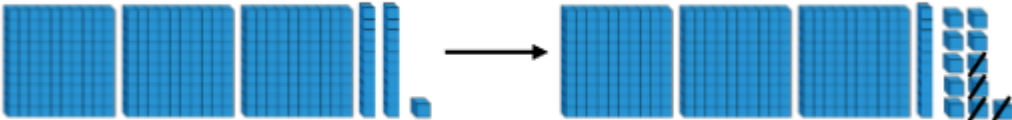
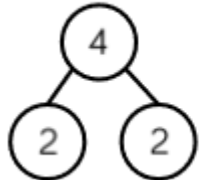


10s	1s
9 ⁸	14
-	6
<hr/>	



10s	1s
9 ⁸	14
-	6
<hr/>	<hr/>
8	8

Progression in Calculations. Y3

Subtraction.

<p style="text-align: center;">3-digit & 1-digit Numbers</p> <p>During this small step, children subtract ones from a 3-digit number without an exchange.</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="background-color: #f4a460;">Hundreds</th> <th style="background-color: #f4a460;">Tens</th> <th style="background-color: #f4a460;">Ones</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> </tbody> </table> <p style="text-align: center;">Use the place value grid to complete the calculations.</p> <p style="text-align: center;">$214 - 3 = \underline{\quad}$ $214 + 3 = \underline{\quad}$</p>	Hundreds	Tens	Ones			
Hundreds	Tens	Ones					
							
<p style="text-align: center;">Subtract 1-digit from 3-digits</p> <p>Children subtract 1-digit from a 3-digit number using an exchange. Children need to be secure in the fact that 321 is 3 hundreds, 2 tens and 1 one but that it is also 3 hundreds, 1 ten and 11 ones.</p>	<p style="text-align: center;">Teddy uses Base 10 to calculate $321 - 4$</p> <div style="text-align: center;">  </div> <p style="text-align: center;">Use this method to calculate:</p> <p style="text-align: center;">$322 - 4$ $322 - 7$ $435 - 7$</p>						
	<p style="text-align: center;">Dora uses the part-whole model and number line to solve $132 - 4$</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">  </div> <div style="margin-right: 20px;">  </div> <div>  </div> </div>						

Progression in Calculations. Y3

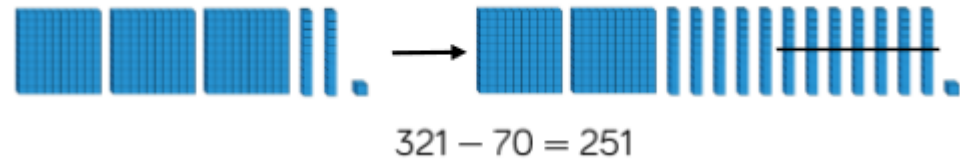
Subtraction.

Subtract 2-digits from 3-digits

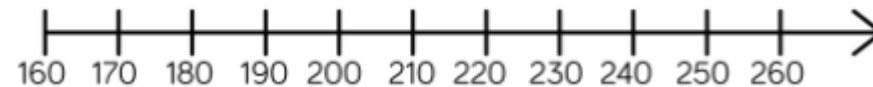
Children subtract multiples of 10 from a 3-digit number, with an exchange. The examples show different ways this concept could be taught using number lines and part-whole models.

The column method could be used, however it is not the most efficient method. Counting backwards in tens or using 100 to help will support mental strategies.

Rosie uses Base 10 to subtract 70 from 321



Count back in tens to solve $240 - 70$



Amir calculates $425 - 90$ by subtracting 100 and then adding 10

$$425 - 100 = 325$$

$$325 + 10 = 335$$

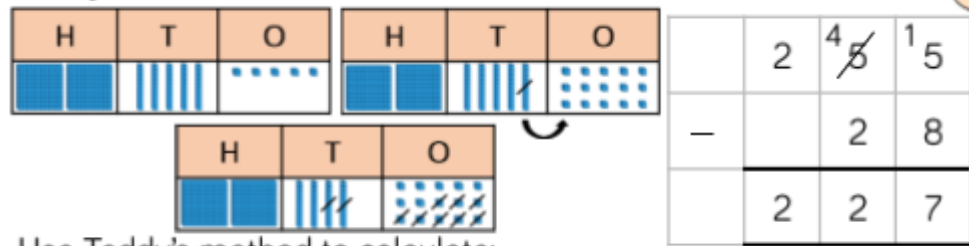
Progression in Calculations. Y3

Subtraction.

Subtract 2-digits from 3-digits

Children focus on the position of numbers and place value to subtract 2-digits from 3-digits using the column method. Children start by exchanging one ten for ten ones. Next they exchange one hundred for ten tens before subtracting numbers where there are exchanges in both columns. Encourage children to use Base 10 and place value counters so they can physically exchange and see the link between the concrete and the written column method.

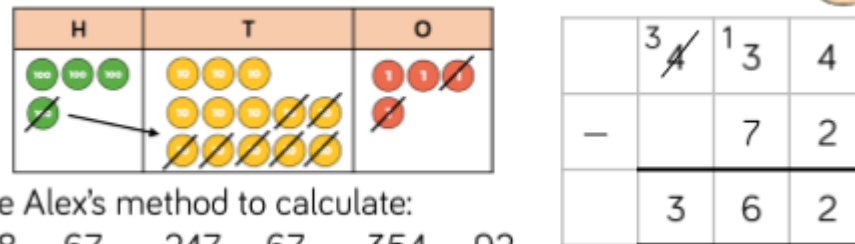
Teddy uses Base 10 to subtract 28 from 255



Use Teddy's method to calculate:

$$365 - 48 \quad 492 - 38 \quad 722 - 16$$

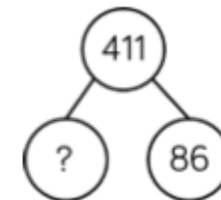
Alex uses place value counters to calculate 434 - 72



Use Alex's method to calculate:

$$248 - 67 \quad 247 - 67 \quad 354 - 92$$

Calculate the missing number in each model.



Progression in Calculations. Y3

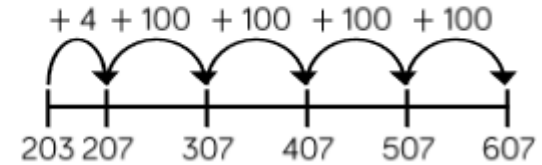
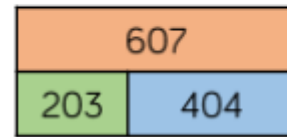
Subtraction.

It is important for the children to understand that there are different methods of subtraction. They need to explore efficient strategies for subtraction, including:

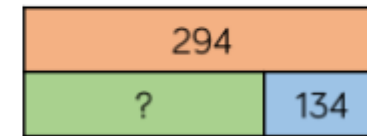
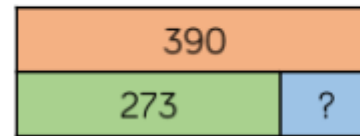
- Counting on (number lines)
- Near subtraction
- Number bonds

They then move on to setting out formal column subtraction supported by practical equipment.

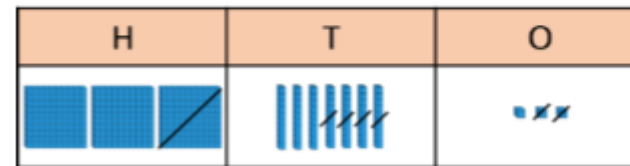
We can count on using a number line to find the missing value on the bar model. E.g.



Use this method to find the missing values.



Mo uses Base 10 to subtract 142 from 373



	3	7	3
-	1	4	2

Use Mo's method to calculate:

$$565 - 154$$

$$565 - 145$$

$$565 - 165$$

Progression in Calculations. Y3

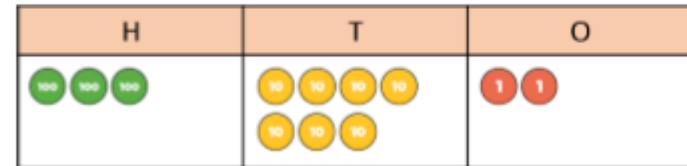
Subtraction.

Subtract 3-digits from 3-digits (2)

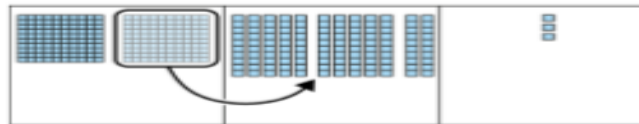
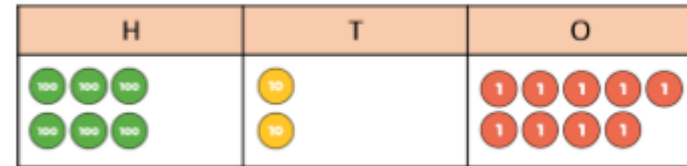
Children explore column subtraction using concrete manipulatives. It is important to show the column method alongside so that children make the connection to the abstract method and so understand what is happening. Children progress from an exchange in one column, to an exchange in two columns. Reinforce the importance of recording any exchanges clearly in the written method.

Complete the calculations using place value counters.

$$372 - 145$$

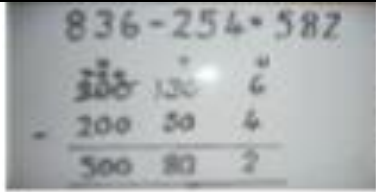



$$629 - 483$$



Progression in Calculations. Y3

Subtraction.

	 <p>Begin by partitioning into columns</p>  <p>Then move to formal method.</p>