	Through discussion, children need to:	Subtraction	Progression in number:

Resources
Number Lines
Arrow Cards
Bead strings
100 squares
Multilink
Dienes
Numicon

Context
Money
Measures

Through discussion, children need to:
1. Read, understand and interpret the question.
2. Identify the calculation as a number sentence.
3. Think about skills that will help to solve the calculation (doubling, number bonds, partitioning, multiples).
4. Choose an appropriate method.
5. Record the number sentence and solution.
6. Interpret solution (rounding? units?)
7. Check calculation

Subtraction

Using and applying question starters.

- What tips would you give to someone to help them with …..
- Which of these are correct? What has this person done wrong? How could you help them to put it right?
- Make up an example of an addition calculation _____ that you would do in your head and one you would do using paper. Explain why.
- Work out _____. Explain what you did.
- How would you explain to someone how to _____?

Progression in number:
U -U
TU-U
TU-TU
HTU-U
HTU - TU
HTU - HTU
ThHTU - U
ThHTU - TU
ThHTU -HTU
ThHTU -ThHTU
& decimals

Stage 1

Using numbers up to 10:

- Develop a mental picture of the number system using pictures
- Count backwards in familiar contexts
- Count back in 1's
- Use practical apparatus to take away objects
- Find one less than a number

- Teacher _demonstrates_ jumping back in one on a number line.

Counting songs and rhymes involving counting backwards

There are eight pennies in this bag. I spend 5p. How much money will be left? I want to save 10p. How much more money do I need?

Explain your method for each of these problems:
Jason took 20p to the school fete. He has spent 17p. How much money does he have left?
Peter is 12 and Casey is 9. How much older is Peter than Casey?

Use counters or a number track to help you with these questions: Bilal has seven computer games. Anya has two fewer than Bilal. How many computer games does Anya have? There are 11 birds on a roof, six fly away. How many are left?

Stage 2

Using numbers up to 20:

- Count back on a structured number line or hundred square in ones (related to pictures)
- Count back in 10's on a number line or hundred square (multiples of 10 to 100)
- Know and use all number facts up to 10 and 20
- Begin to find the difference by counting up from the smallest number

Find the missing numbers $7 + \boxed{} = 12$ $\boxed{} - 9 = 8$

There are some yellow and some orange flowers in a vase. There are 14 flowers altogether. Six are yellow. How many are orange?

Nisha is two years younger than Hitan. Nisha is nine. How old is Hitan? To answer this problem, Kieran says he has to work out two take away nine. Is he correct? Explain why you think that.

Stage 3

Using numbers up to 100:
- Move from structured to unstructured number lines
- Subtract 10 from a 2 digit number
- Subtract 1 digit number from a 2 digit number bridging 10
- Partition the number to be subtracted (no exchanging) then use a number line, hundred square etc to solve

Samir is running a 50-metre potato race. He drops his potato after 18 metres. How much further does he have to go?

Write the missing numbers in this sequence.
53 48 43 38 ☐ ☐ 23 18 Explain how you identified them.

Explain how you can use a number line to subtract 37 from 56. Now show me how you could use a 100 square.

What number is 30 less than 64? Explain your method.
What is the missing number in the number sentence below?
$57 + \boxed{} = 97$

Two snakes are 56cm and 83cm long. What is the difference in their lengths? Draw a picture that will help you solve the problem. What part of your picture shows the difference?

Stage 4	**Using numbers up to 1,000:**	Paul says 72 – 15 = 63. Write down an addition calculation that you could do to check this.
	• Partitioning second number 74 - 27 = 74 - 20 = 54 - 7 = 47 (to support mental methods)	Paul's working is: 70 – 10 = 60 and 5 – 2 = 3 so 72 – 15 = 63.
	• Make decisions about whether to count on or back depending on the calculation	Where has Paul has gone wrong?
	$74 - 27 = 47$	The difference between the heights of two children is 37cm. What could their heights be? Roughly how old
	• Expanded column method (no exchanging)	Two numbers have a difference of 185. One of the numbers is 478. What is the other? Is this the only answer?
	$$\begin{array}{r r} 60 & 7 \\ - \quad 20 & 5 \\ \hline 40 & 2 \rightarrow 42 \end{array}$$	
	• Make counting on an unstructured number line more efficient	Work out 327 - 183. Explain each stage to me.
	- 40 - 10 -10 -10 -10 85 125 instead of 85 95 105 115	

Stage 5	• Expanded Column Method (with exchanging)	Nadia is working with whole numbers. She says if you subtract a 1 digit number from a 3 digit number you always get a 2 digit number. Is she right? Prove it.
	Expanded method It is important that the children have a good understanding of place value and partitioning using concrete resources and visual images to support calculations. The expanded method enables children to see what happens to numbers in the standard written method.	What is the difference between 1999 and 4003? What did you notice about the numbers? How did this help you decide which method to use?
	43 – 27 = 16 to subtract 7 units we need to exchange a ten for ten units	
	$$\begin{array}{r r r} {}^{30}\cancel{40} & + {}^{10+}3 \\ - \quad 20 & + 7 \\ \hline 10 & + 6 \end{array}$$	

Stage 6	• **Formal Written Method with numbers up to 10,000**	Work out 3275 - 1837. Explain each stage to me.
	Standard written method The previous stages reinforce what happens to numbers when they are subtracted using more formal written methods. It is important that the children have a good understanding of place value and partitioning.	How would you find the missing number? 10, ☐ 4, 1, ☐ -5, ☐ What is the rule?
	$$\begin{array}{r} {}^{3}\cancel{4}\,{}^{1}3 \\ - \quad 2\;7 \\ \hline 1\;6 \end{array}$$	

Stage 7	• **Formal Written method with numbers up to 100,000 and up to 3 decimal places**	Make up a question involving addition and subtraction that has the answer 0.04.
	• Including examples with 0 as a place holder	Two numbers have a difference of 1.583. One of the numbers is 4.728. What is the other? Is this the only answer?
	$$\begin{array}{r r r} 4\;\cancel{5} & {}^{1}\cancel{0}. & {}^{1}6 \\ - \quad 3 & 7. & 8 \\ \hline 1 & 2. & 8 \end{array}$$	Work out 32.75 - 1.837. Explain each stage to me.
	$$\begin{array}{r r r} 4\;\cancel{5} & {}^{1}\cancel{0} & {}^{1}6 \\ - \quad 3 & 7 & 8 \\ \hline 1 & 2 & 8 \end{array}$$	Make up an example of an addition or subtraction, involving decimals, that you would do in your head. Now make up an example you would do on paper. Explain the reasons for using these two methods.