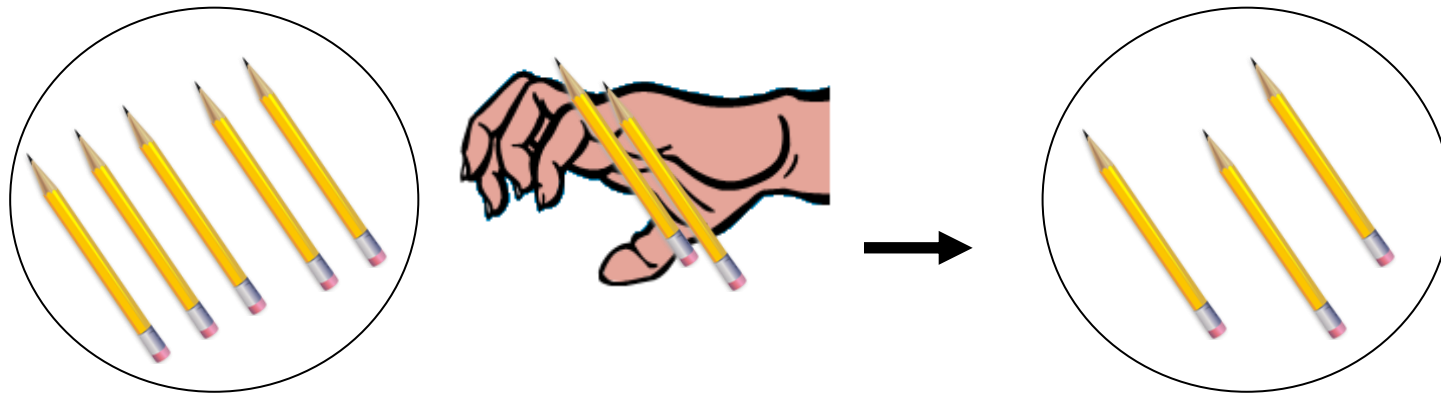


## Subtraction: Stage 1

As with addition, at every stage of subtraction practical equipment and images are imperative to providing a secure foundation. At stage 1, children are not expected to use numerals or operation signs unless they are able to associate them with a value or operation.

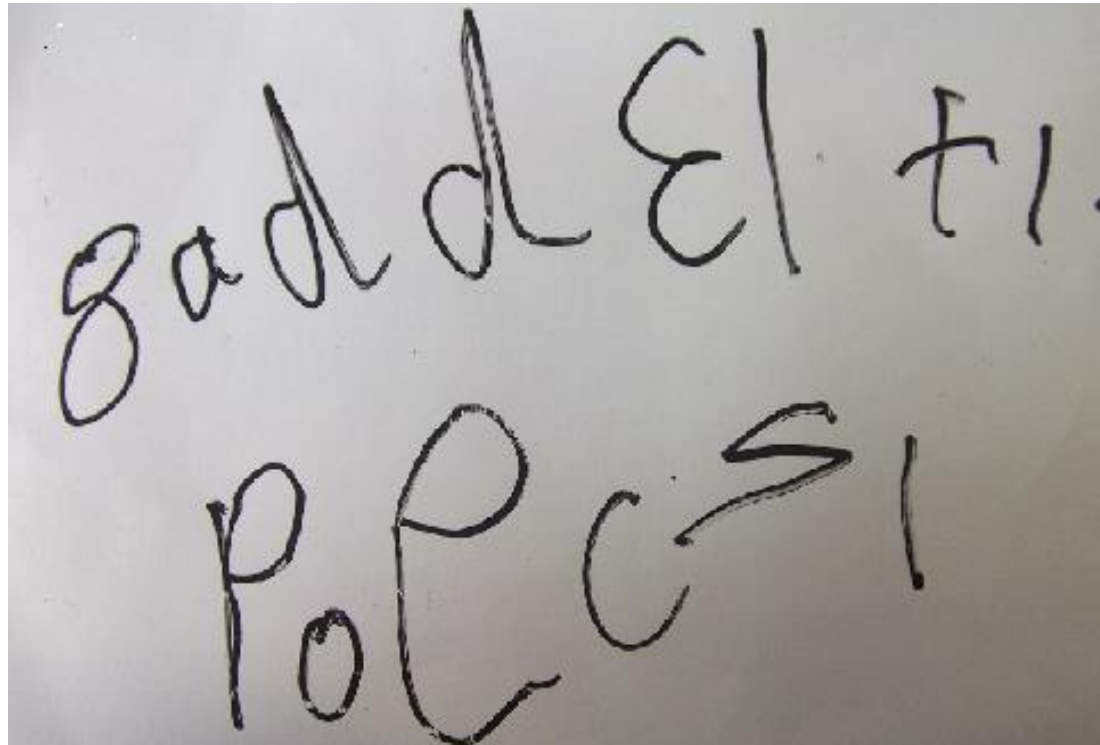
### Practical understanding at stage 1

Physically remove or cross out a number to show they have been 'taken away'.



## Informal recording at stage 1

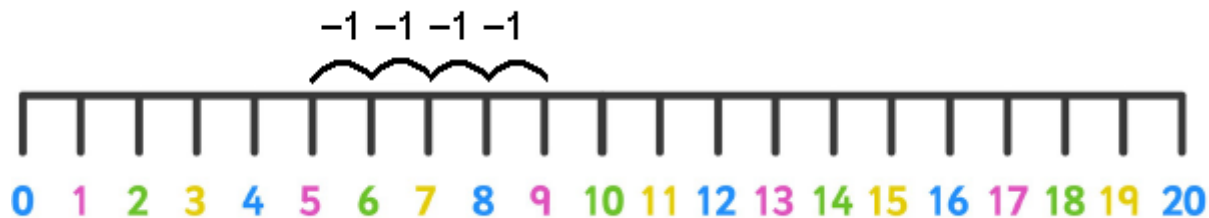
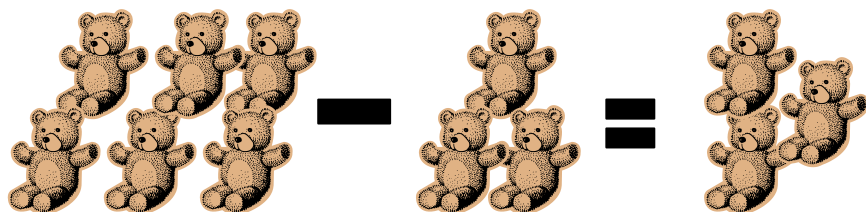
Children will choose how they represent their own subtraction and are encouraged to explain what it shows. A teacher or adult may model a number sentence but the children are not expected to record using numerals or operation signs unless they are able to associate them with a value or operation.



## Subtraction: Stage 2

Practical equipment and images are still incredibly important at this stage and children are now beginning to use signs and numerals to record their subtraction number sentences. As their knowledge of number value grows, children will also begin to use number-lines and number squares to support their understanding of calculation and numerical value.

### Practical understanding at stage 2



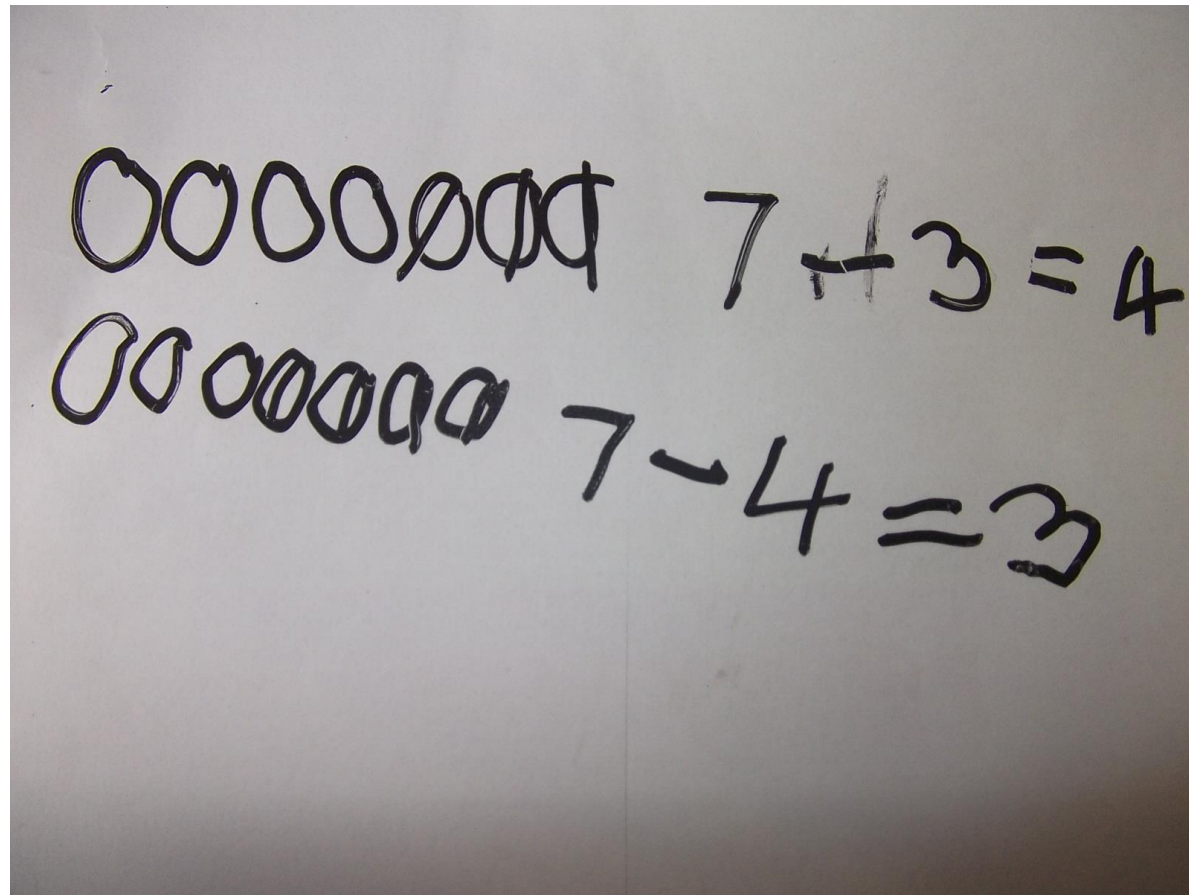
$$9 - 4 = 5$$

1 - 100 number square

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

## Informal recording at stage 2

Children will begin to draw to support their understanding of subtraction and represent this in their own way. They will begin to use signs and numerals to show number sentences and they may begin to group numbers when drawing to make it easier to record.



## Subtraction: Stage 3

At stage 3 children will be continuously accessing practical equipment and using visual drawings to support their subtraction calculations. They will begin to know number facts off by heart and be developing a repertoire of strategies to support their mental calculations.

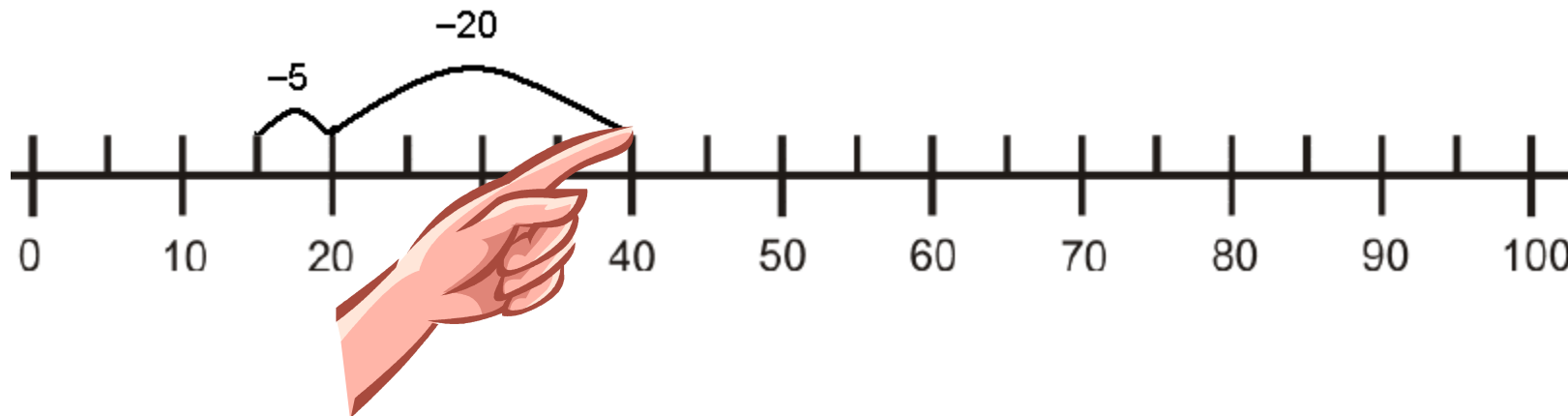
It is hoped by stage 3 that children are becoming more confident with their mental calculations. Children therefore need to be able to access and understand the following before moving towards other stages of calculations.

- Understand that subtraction makes a number smaller.
- Understand that the biggest number needs to go first.
- Know that "finding the difference" is subtraction.
- Understand that subtraction is the inverse of addition.
- Knowledge of place value (tens and units).
- Visualise a number or mathematical image in their heads.

### Practical understanding at stage 3

Children will continue to access practical equipment as above in stages 1 and 2. Please note that it is important children have this support at *all times* throughout their mathematics development and working practically should be encouraged when needed.

Children will continue to use number squares and number lines to support their addition. They will make *practical* jumps using their knowledge of tens and units and learn strategies to use these successfully.

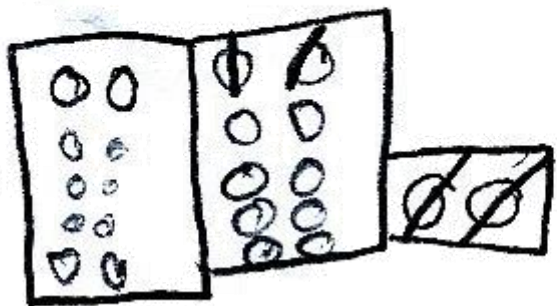


$$40 - 25 = 15$$

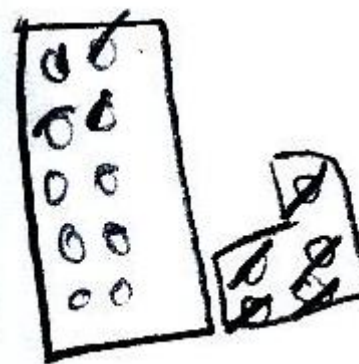
### Informal recording at stage 3

Children will continue to draw their own representations for subtraction number sentences but now these will begin to understand the importance of grouping tens to ensure accuracy. Children will be encouraged to begin to draw Numicon shapes to support their subtraction, alongside the use of numerals and signs.

$$22 - 4 = 18$$



$$15 - 9 = 6$$



## Subtraction: Stage 4

At stage 4, children will be encouraged to use a formal written method to show their subtractions. They will need to be secure in their understanding of partitioning to be able to do this.

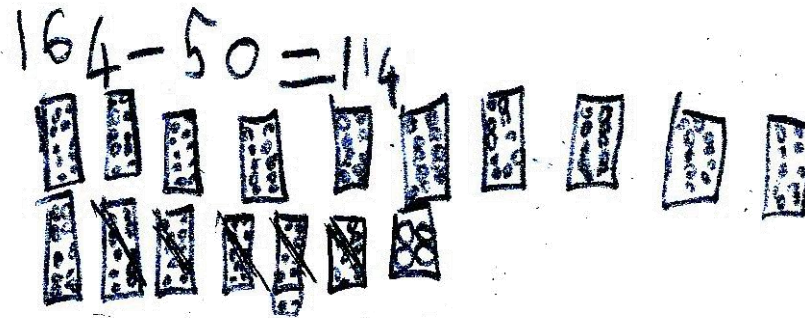
As a school we recognise the importance of children understanding subtraction as becoming a *smaller* value therefore, at this stage, we have opted to continue written methods which demonstrate an understanding of counting back. However, children will also be encouraged to use the knowledge of addition as an inverse.

### Practical understanding at stage 4

Children will continue to access practical equipment as above in stages 1, 2 and 3. Please note that it is important children have this support at *all times* throughout their mathematics development and working practically should be encouraged when needed.

### Informal recording at stage 4

Children will continue to record maths in methods they deem appropriate, but will begin to be introduced to more formal methods of calculation.

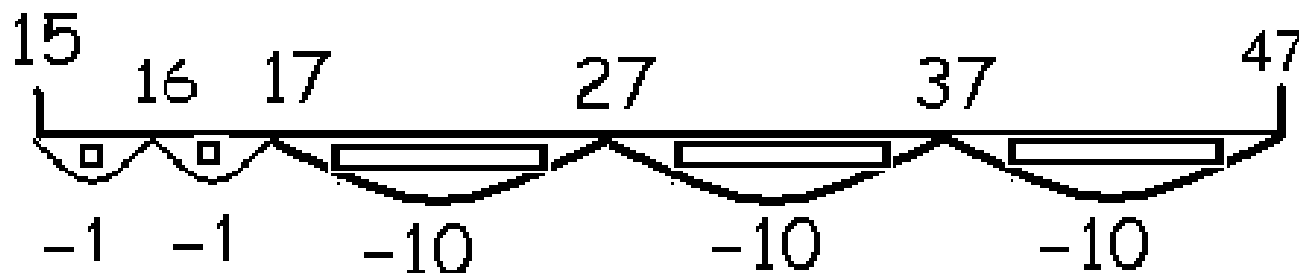




### Formal recording at stage 4

As with addition, for this method children are encouraged to use Dienes to support their understanding using an open number-line. They will use the underneath of the number-line to show they are counting back. Children will lay the tens rods down and jump over them to visually represent a jump of ten and similarly with units. They will then record this in their books as a written method.


$$47 - 32 =$$



## Subtraction: Stage 5

### Practical understanding at stage 5

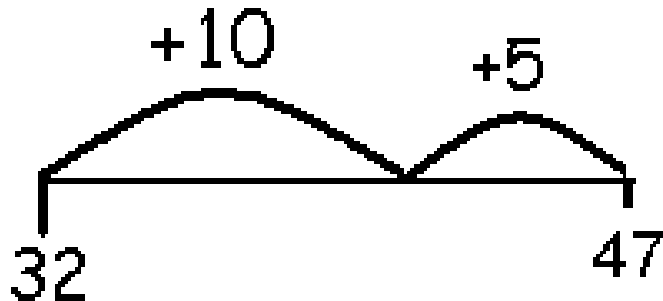
Children will continue to access practical equipment as above. Children will have this support at *all times* throughout their mathematics development and working practically should be encouraged when needed.

### Informal recording at stage 5

Informal recording is much less common at this stage as children should have a secure understanding of methods taught at stage 4.

### Formal recording at stage 5

$$47 - 32 =$$



To build on and link to stage 4 the children will continue to access their knowledge of partitioning and inverses to help support their calculations. In this formal written method children will use counting on to find an answer to a subtraction number sentence, using their knowledge understanding of *finding the difference*.

## Subtraction: Stage 6

### Practical understanding at stage 6

Children will continue to access practical equipment as above. Children will have this support at *all times* throughout their mathematics development and working practically should be encouraged when needed.

### Informal recording at stage 6

Informal recording will not be used at this stage unless children are asked to show their calculations in their own way. This is because children should now have a secure understanding of methods taught at stages 4 and 5.

### Formal recording at stage 6

Children will be taught how to use a partitioning method to subtract. When appropriate they will be taught how to steal 2 and 3 digit numbers.

$$\begin{array}{r} 74 - 23 \\ T \quad U \\ 70 + 4 \\ - 20 + 3 \\ \hline 50 + 1 = 51 \end{array}$$

$$\begin{array}{r} 74 - 27 \\ 70 + 4 \\ - 20 + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 60 \quad 14 \\ \cancel{70} + \cancel{4} \\ - 20 + 7 \\ \hline 40 + 7 = 47 \end{array}$$

*Using stealing*

## Subtraction: Next steps

Where children have developed a good understanding of the strategies taught at stages 1 - 6, it may be appropriate to introduce them into compact written methods, such as column method subtraction.

### Column method subtraction

Children will learn how to use HTU columns to subtract numbers. They will begin with the units digit and then move onto the tens and hundreds. When they are able children will be introduced to 'steal' from another column if necessary.

$$\begin{array}{r} \text{HTU} \\ 498 \\ - 242 \\ \hline 256 \\ \hline \end{array}$$