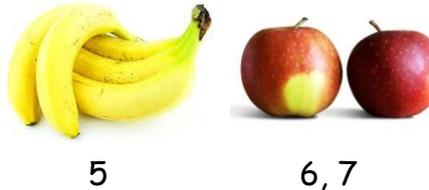


Addition

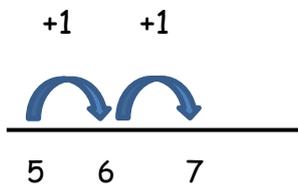
To begin with, children count forwards by 1

Example

I have 5 bananas and mum has 2 apples. How much fruit do we have altogether?



On a number line it looks like this



This works well until children start to learn bigger numbers and have to solve addition problems with bigger numbers

Example

I have 52 cherries and dad has 34 apricots. How much fruit do we have altogether?



To count by 1s is a very inefficient strategy!

So children begin to solve addition problems by using their knowledge of:

- place value
- friends of 10
- friends of 20
- friends of 100
- partitioning
- compensation



Friends of 10 Numbers that go together to make 10

1 + 9 9 + 1 (in addition, the order of the numbers makes no difference)

2 + 8 8 + 2

3 + 7 7 + 3

4 + 6 6 + 4

5 + 5

Friends of 20 Numbers that go together to make 20

1 + 19 6 + 14

2 + 18 7 + 13

3 + 17 8 + 12

4 + 16 9 + 11

5 + 15 10 + 10

Friends of 100 Numbers that go together to make 100

10 + 90

20 + 80

30 + 70

40 + 60

50 + 50

And other combinations such as 11 + 89



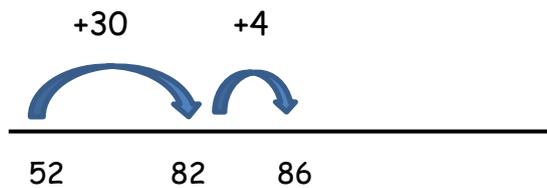
Place Value and Partitioning

Example

I have 52 cherries and dad has 34 apricots. How much fruit do we have altogether?



On a number line it looks like this



$$52 + 34 = 86$$

/ \

$$30 + 4$$

$$52 + 30 = 82 \text{ and } 82 + 4 = 86$$

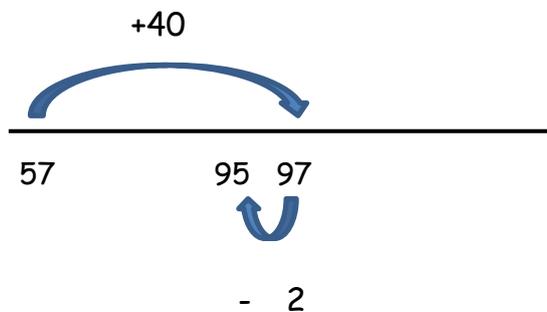
Compensation

Example

I have 57 cherries and dad has 38 apricots. How much fruit do we have altogether?



On a number line it looks like this



$$57 + 40 = 97$$

$97 - 2 = 95$ (by adding 40 instead of 38, we can use our place value knowledge more effectively but we need to remember to take away the extra 2 apricots we added)



Using the algorithm

The digits of numbers need to be written in correct place value columns

<i>Example</i>	$37 +$		$37 +$
	<u> 2</u>	Not	<u> 2</u>
	<u> 39</u>		<u> 57</u>

Example 1

$$223 +$$

$$\underline{136}$$

$$\underline{359}$$

Add the ones first 6 ones + 3 ones = 9 ones

Add the tens next 2 tens + 3 tens = 5 tens

Add the hundreds next 2 hundreds + 1 hundred = 3 hundreds

Example 2

$$3\ 567 +$$

$$\underline{2\ 832}$$

$$\underline{6\ 399}$$

Add the ones first 7 ones + 2 ones = 9 ones

Add the tens next 6 tens + 3 tens = 9 tens

Add the hundreds next 5 hundreds + 8 hundreds = **13 hundreds**

(which is the same as 1 thousand and 3 hundreds)

Add the thousands next 3 thousands + 2 thousands + 1 thousand

(which is from)

