

### Don't Count, Calculate...

From an early age children need to use known facts to help them calculate rather than count on or back in ones.

For  $8 + 4$  I know  $8 + 2 = 10$  so 2 more would be 12. Number bonds for 10 help me to cross the tens.

$$\begin{array}{r} 8 + 4 = 12 \\ \phantom{8} \swarrow \searrow \\ \phantom{8} 2 \phantom{2} \end{array}$$

$$45 + 12 = 57$$

I know  $45 + 10 = 55$  and then 2 more is 57.

$$56 - 9 = 47$$

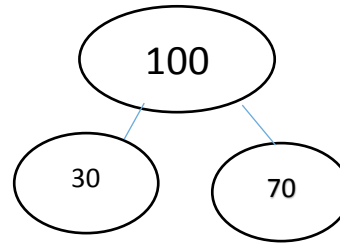
I know 10 less than 56 is 46 but I need to add 1 more so the answer is 47.

$$\begin{array}{l} 38 + 4 = 42 \\ 48 + 4 = 52 \end{array}$$

### Addition and Subtraction can be represented in different ways...

These structures show the relationship between addition and subtraction.

#### Part-Part Whole Model



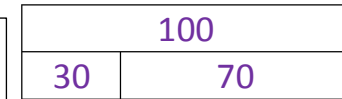
$$30 + 70 = 100$$

$$70 + 30 = 100$$

$$100 - 30 = 70$$

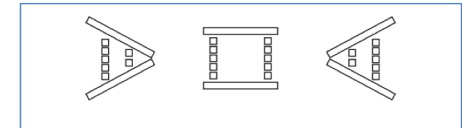
$$100 - 70 = 30$$

#### Bar Model



$$100 - \square = 20$$

As well as equality (=), children need to experience inequality – **greater than** or **less than**.



$$31 > 13 \quad \text{and} \quad 15 < 51$$

$$30 + 10 < 5 + 37$$

$$100 - 20 > 99 - 9$$

They can also be used in missing number problems e.g.  $5 + 7$       $5 + 6$

#### True or False?

$$1\text{m} = 20\text{cm} + 80\text{cm}$$

$$89\text{p} - 20\text{p} = 87\text{p}$$

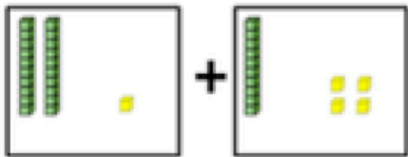
$$10 + 3 > 20 - 6$$

## Year 2 Addition and Subtraction

#### Problems

Dan needs 80 g of sugar for his recipe. There is 45 g left in the bag. How much more does he need to get?

We can use equipment to find the total of 2 numbers. Understanding the value of tens and ones helps us to record our results too. Coins reinforce place value too.



$$\begin{array}{r} 21 + 14 \\ \text{T} \quad \text{U} \\ 20 \quad 1 \\ + 10 \quad 4 \\ \hline 30 \quad 5 = 35 \end{array}$$



#### Use a variety of words

add, addition, more, plus, sum, total, altogether, how many more, subtract, subtraction, take away, minus, less than, difference between

#### What is the same and what is different?

$$10 + 7 = 17$$

$$20 + 7 = 27$$

$$30 + 7 = 37$$

$$40 + 7 = 47$$

$$50 - 5 = 45$$

$$55 - 5 = 50$$

$$60 - 5 = 55$$

$$65 - 5 = 60$$

#### Always Sometimes Never?

**If you add 8 to an odd number, then the answer will be odd.**