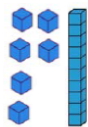## Count Objects to 100

Reasoning and Problem Solving

Tom says he has 61
Is he correct?
Explain your reasoning

Tom is not correct because he has 16. He has switched his ten and one around.

Freddy rolls two dice.
One dice shows a 6.
What could his total be?
Write your answers in words.

How many dots of one die?
How did you count the dots?
How many dots on a nine sided die?

Freddy's totals could be: seven, eight, nine, ten, eleven and twelve.

6 sided die:
21 dots

9 sided die:
50 dots

Each bag contains 10 cookies.

How many cookies are there altogether?

Write your answers in numerals and words.

What strategy did you use?
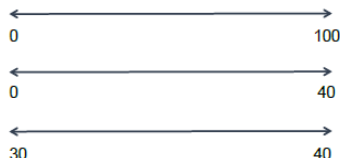
Did your partner use a different method?

What is the best strategy to use

There are 48 (forty eight) cookies altogether.
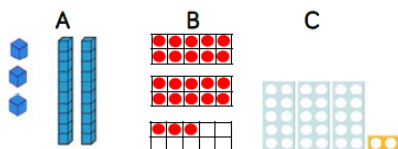(*Children may count in 10s and 1s or know that there are 4 tens which equals 40, then count on 8 more.*)

Represent Numbers

Reasoning and Problem Solving

Place 36 on each of the number lines below:

0   100

0   40

30   40

How many two digit numbers can you make using the digit cards?

7   0   2

What is the largest number?
Prove it by using concrete resources.

What is the smallest number?
Prove it by using concrete resources.

Why can't the 0 be used as a tens number?

70
20
72
27

The largest number is 72

The smallest number is 20.

One of these images **does not** show 23.
Can you explain the mistake?

A   B   C

C does not show 23, it shows 32. They have reversed the tens and ones.

Tens and Ones (1)

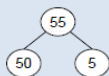## Reasoning and Problem Solving

Charlotte says:

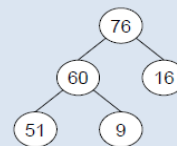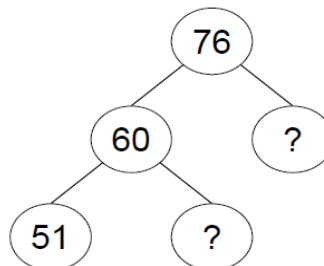> In a part whole model you cannot use the same digit twice

Do you agree with Charlotte?

Explain your reasoning.

Disagree- you can use the same digit in a part whole model. i.e

Complete the extended part whole model:

Tens and Ones (2)

Reasoning and Problem Solving

Joel thinks that:

> 40 + 2 = 402

Explain the mistake he has made.

Can you show the correct answer using concrete resources?

$40 + 2 = 42$
Joel has combined the numbers to make 402

Fill in the missing numbers:

$1 \text{ ten} + 3 \text{ ones} = 13$

$2 \text{ tens} + \boxed{} \text{ ones} = 23$

$\boxed{} 3 \text{ tens} + 3 \text{ ones} = \boxed{}$

$\underline{} \text{ tens} + 3 \text{ ones} = 43$

What would the next number in the pattern be?

$1 \text{ ten} + \underline{3} \text{ ones} = 13$
$2 \text{ tens} + 3 \text{ ones} = 23$
$3 \text{ tens} + 3 \text{ ones} = \underline{33}$
$\underline{4} \text{ tens} + 3 \text{ ones} = 43$

$5 \text{ tens} + 3 \text{ ones} = 53$

Place Value Charts

Reasoning and Problem Solving

How many two digit numbers can you make that have the same number of tens and ones?

Tens	Ones

Tens	Ones

Tens	Ones

Possible answers:

11
22
33
44
55
66
77
88
99

Are these two place value charts of equal value?

A
Tens	Ones

B
Tens	Ones

What is the same?

What is different?

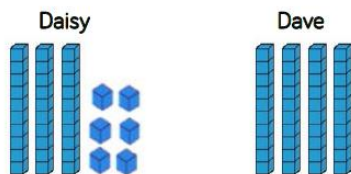Yes they are of the same value - 41.

$40 + 1 = 41$
$30 + 11 = 41$

Same: Both A and B show 41

Different: There are different tens and ones in each place value chart.

Comparing Objects

Reasoning and Problem Solving

Daisy and Dave are comparing numbers that they have made.
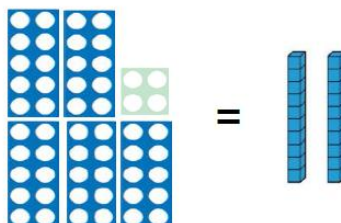
Daisy **Dave**

Daisy

My number is greater because I have more objects.
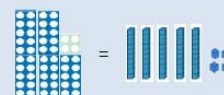
Is Daisy correct?

Explain your answer.

Daisy is incorrect because Dave has 4 tens which makes 40 and Daisy has 3 tens and 6 ones which makes 36 therefore Dave has more.

Use Base 10 to make A and B equal:

=

How could you make B more than A?

=

B can be greater than A if you add more than 34 to it.

Comparing Numbers

Reasoning and Problem Solving

How many different numbers can go in the box?

13 < ☐ < 20

14,15,16,17,18,19

True or False:

One ten and twelve ones is bigger than two tens.

Explain how you know.

True:
One ten + twelve ones = 22
Two tens = 20

Fill in the missing numbers using 1,2,4 and 7

	<		<	8
∧		∨		∨
5	<	6	>	3
∨		∧		∨
		<	9	>

4	<	7	<	8
∧		∨		∨
5	<	6	>	3
∨		∧		∨
2	<	9	>	1

or

4	<	7	<	8
∧		∨		∨
5	<	6	>	3
∨		∧		∨
1	<	9	>	2

Order Numbers and Objects

Reasoning and Problem Solving

If you ordered the numbers below, which would be the fourth?

Explain how you ordered them.

33	53	37
29	34	43

I ordered them from smallest to largest:

29, 33, 34, 37, 43, 53

37 would be the fourth number

Alternatively, if I order the numbers from largest to smallest:

53, 43, 37, 34, 33, 29,

34 would be the fourth number.

Bill has written a list of 2 digit numbers.

The digits of each number add up to 5.

None of the digits are 0.

Can you find all the numbers Bill could have written?

Write the numbers in order from smallest to largest.

14, 23, 32, 41

Counting in 2s, 5s, 10s

Reasoning and Problem Solving

Alfie says:

If you count in 5s from any number in the five times table your numbers have to end in 5 or 0.

Do you agree with Alfie?

Prove it.

Agree.

Each number in the 5 times tables does end in a 5 or 0.

5, 10, 15, 20, 25, 30, 35, 40, 45, 50.

Using these numbers, travel from 5 to 53 by using the arrows.

10, 29, 43, 15, 17, 45, 39, 19, 41, 50

What do the red arrows show?
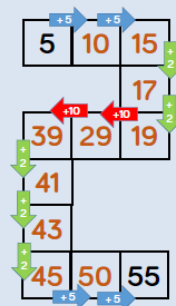
Counting in 3s

Reasoning and Problem Solving

True or False

> I start at 0 and count in 3's. I say the number 14.
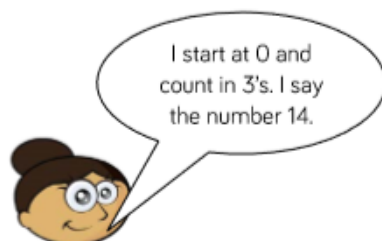
False. If I count in 3's I go: 3, 6, 9, 12, 15

Sid is counting in 2s, Luke is counting in 3s.

Sid	2	4	6	8
Luke	3	6	9	12
+				

Sid says:

> If we add our numbers together as we count we can make a new

What pattern do they make?

What happens if both Sid and Luke count in 5s and they add them together to make a new pattern?

If Sid and Luke add their numbers together they will be counting in 5s.

If Sid and Luke both count in 5s they will be counting in 10s.

Add Three 1-digit Numbers

Reasoning and Problem Solving

Always, sometimes, never?

$$odd + odd + odd = odd$$

Use one digit numbers to test if this is true. E.g.

$$3 + 5 + 7$$

Always – children should show this using different examples. They may recognise that two odds make an even so three odds make an odd.

Which numbers would you add together first in the following number sentences? Why would you add those first?

$$3 + 5 + 7 =$$

$$8 + 2 + 6 =$$

$$4 + 3 + 4 =$$

Is there always an easier order to add three one digit numbers?

3 and 7 first – number bond to 10
8 and 2 first – number bond to 10
4 and 4 first – double a number.

No, e.g. 5 + 6 + 7

Take 3 consecutive one digit numbers, e.g. 4, 5 and 6

Add them together.

What do you notice?

Choose different groups of 3 consecutive one digit numbers and see if there is a pattern.

$$1 + 2 + 3 = 6$$
$$2 + 3 + 4 = 9$$
$$3 + 4 + 5 = 12$$
$$4 + 5 + 6 = 15$$
$$5 + 6 + 7 = 18$$
$$6 + 7 + 8 = 21$$
$$7 + 8 + 9 = 24$$

If we order the groups, we can see that the totals go up by 3 each time. This is because we are adding one to each number each time so we are adding 3 extra altogether.