Counting in Tens

Adult Guidance with Question Prompts

Children count forwards and backwards in tens from any number. They work out the next numbers in sequences on number lines. Children will then need to continue a sequence containing money.

What number is marked first on the number line?

What number is marked next?

What is happening to the tens digit/ones digit?

Are the numbers getting larger or smaller?

Can you spot a pattern?

What numbers are marked on the number line?

What comes before 88 if you are counting in tens?

Can you mark this on the number line?

What is happening to the tens digit/ones digit?

Can you spot a pattern?

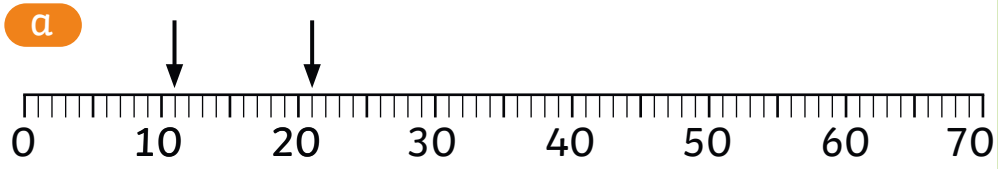
Are the numbers getting larger or smaller?

What would be the next number?

Counting in Tens

Count forwards and backwards in tens from the arrows. Mark the numbers on the number line.

a



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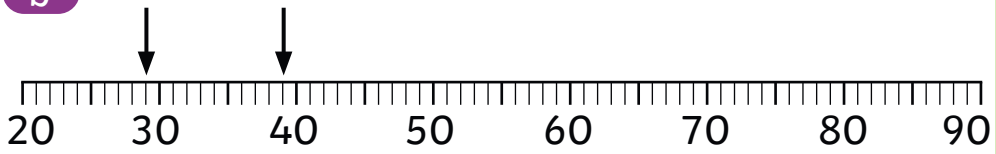

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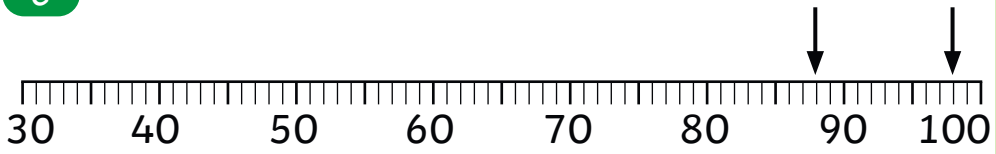

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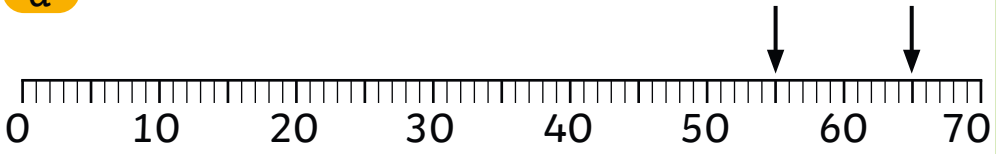
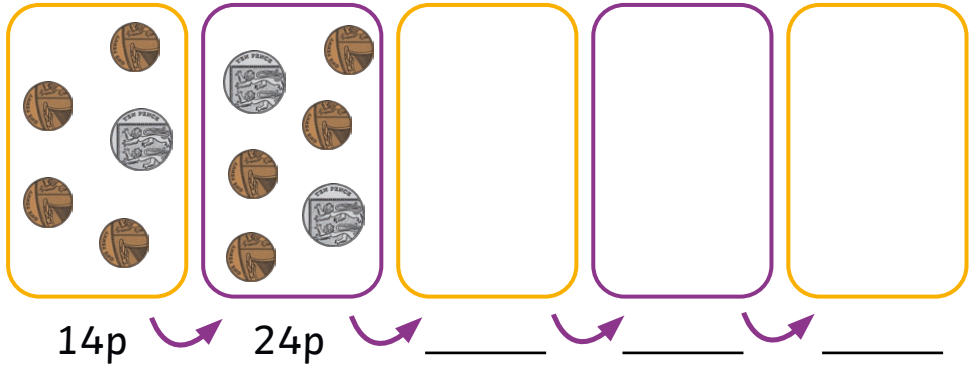


Complete the number sequence:



Counting in Tens

Adult Guidance with Question Prompts

Children find the odd one out in sequences counting forwards and backwards in tens. They then use their understanding of counting in tens to correct the mistake.

What representations can you see here?

Can you read the sequence to yourself?

Are the numbers getting smaller or larger?

Can you spot a pattern?

What do you notice about the tens digit/ones digit?

Which one is the odd one out?

How do you know?

Can you correct the mistake?

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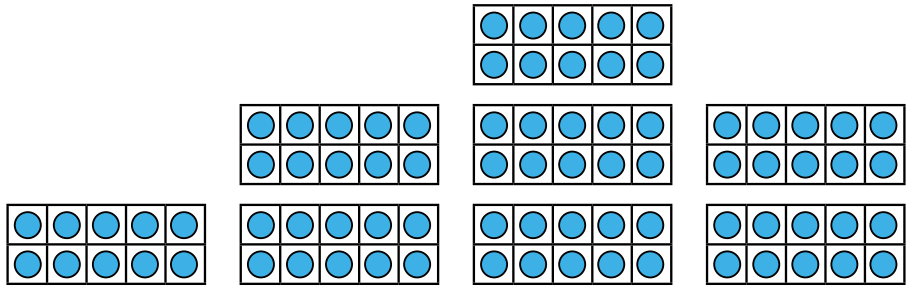
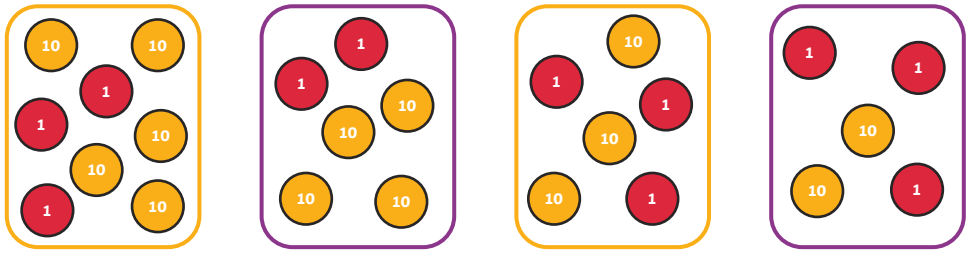
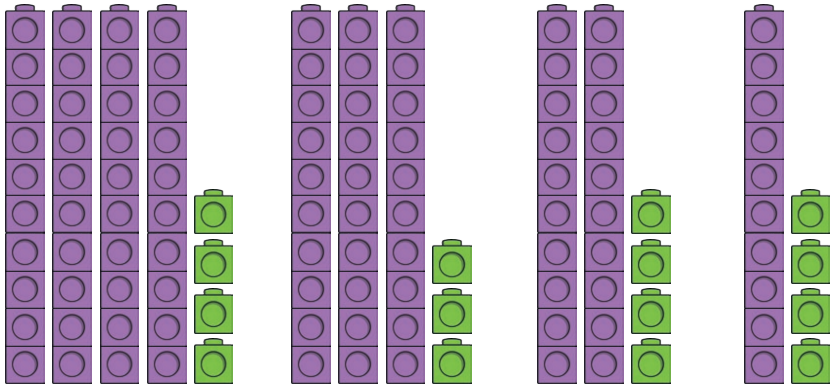
Counting in Tens

Ring the odd one out in each sequence.







29 39 49 59 69 89

Explain how you would correct each incorrect number.

Counting in Tens

Adult Guidance with Question Prompts

Children count in tens to solve problems. They use concrete equipment (e.g. base ten blocks, hundred square, number shapes) or make drawings to help count in tens.

How can counting in tens help you solve this problem?

What equipment could you use to help?

Can you use a drawing to help?

Do you need to count forwards or backwards?

What number are you starting on?

Can you explain your answer?

Can you think of some of your own counting in tens problems?

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Counting in Tens

Solve these problems by counting in tens.
Explain your reasoning for each one.

James and Debbie are both counting forwards in tens. James starts on 53 and Debbie starts on 32.

Will they say any of the same numbers?

Andrew has 4 doughnuts. The bakery sells doughnuts in packs of 10. He buys 4 more packs.

How many doughnuts does Andrew have altogether?

Shamina has 119p in her purse. She gives 5 friends 10p each.

How much money does she have left in her purse?

If I start on 140 and count backwards in steps of 10, will I say the number 100?

Think of your own problems that involve counting in tens. Can your friend solve them?

Ordering Numbers Differently

Adult Guidance with Question Prompts

Children learn to order numbers which have been represented in different ways. In this activity, children will order a variety of representations from smallest to greatest value. They will then go on to create their own representations and order them. For this activity children will need a variety of concrete materials to represent numbers differently.

What different ways do you know to represent numbers?

Which numbers can you see?

Which number is the smallest? How do you know?

Which number is the greatest? How do you know?

Can you use a hundred square to prove you have ordered the numbers correctly?

Can you find a different way of proving you have ordered the numbers correctly?

Explain how you changed the order from smallest to greatest then greatest to smallest?

Which is the 4th number in each sequence? What do you notice?

Children should notice that 38 is the 4th number in both sequences.

Why has that happened?

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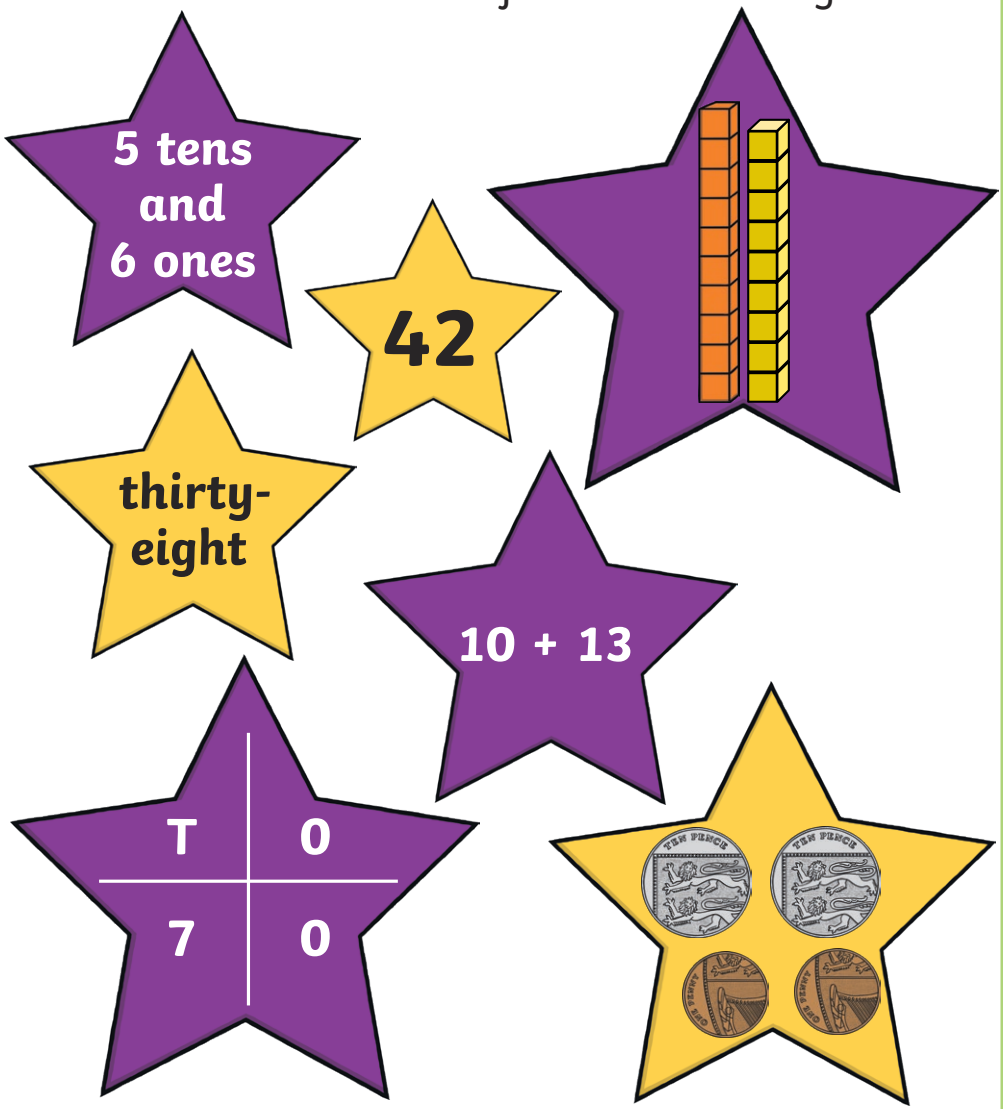
Ordering Numbers Differently

Order the numbers below from smallest to greatest.



Can you order them from greatest to smallest?

Choose numbers of your own, represented in different ways, to order.

Ordering Numbers Differently

Adult Guidance with Question Prompts

Children learn to order numbers which have been represented in different ways. In this activity, children use their understanding of ordering to spot the mistake and correct it. They then go on to represent numbers in different ways. For this activity children will need a variety of concrete materials to represent numbers differently.

What different ways do you know to represent numbers?

Which numbers can you see?

Which number is the smallest? How do you know?

Which number is the greatest? How do you know?

Can you use a hundred square to check Jenny has ordered the numbers correctly?

Which one is incorrect?

How do you know?

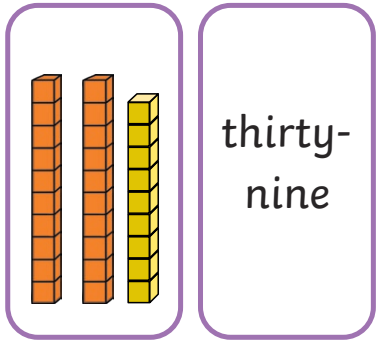
Where should 29 be in the sequence?

Show the correct order but representing each number in a different way to Jenny.

Ordering Numbers Differently

Jenny has put these numbers in order from smallest to greatest but she has made one mistake.

3 tens and 4 ones



thirty-nine

T	O
4	1

Can you explain where Jenny has gone wrong?

Order the numbers again to show Jenny the correct order but this time represent each number in a different way.

Ordering Numbers Differently

Adult Guidance with Question Prompts

Children learn to order numbers which have been represented in different ways. In this activity, children use their understanding of ordering to reason the value of different objects placed in order.

Has he ordered the items smallest to greatest or greatest to smallest?

How do you know?

What lengths could go between the pencil and the scissors?

Is there more than one possible length for the felt tip?

How can we make sure we find all the possibilities?

Who was fastest in the race?

Can you order the children's times?

Tim came second. Who finished before and after him?

What could his time have been?

Is there more than one possible answer?

How can we make sure we find all the possibilities?

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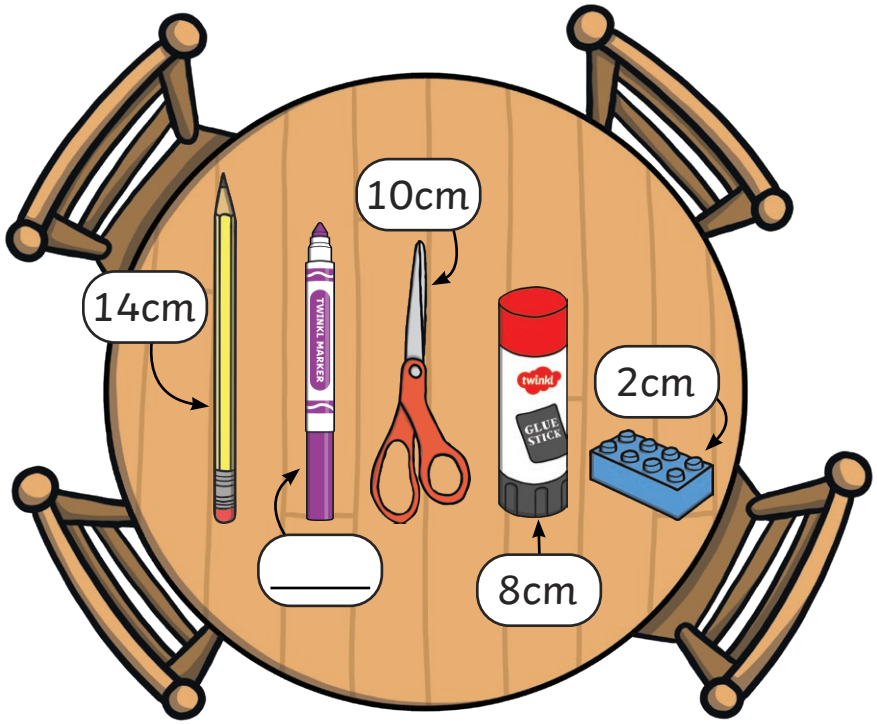
Ordering Numbers Differently

Tim has ordered these items by length.



How long could the felt tip be?

Tim came second in the race. What could his time have been?

- Scarlett: 18 minutes
- Li: 19 minutes
- Ahmed: 10 minutes
- Oscar: 22 minutes
- Tim: _____

Partitioning in Different Ways

Adult Guidance with Question Prompts

Children partition two-digit numbers in a variety of ways and know what each digit represents. In this activity, children match numbers to a representation showing a partitioned number and complete a number line and bar model showing two-digit numbers partitioned in various ways.

How many tens/ones does each number have?
How can we use the whole and part to work out the missing numbers?

If jumps on the number line are different sizes, what does this tell you about the missing numbers?

If bars on the bar model are different sizes, what does this tell you about the missing numbers?

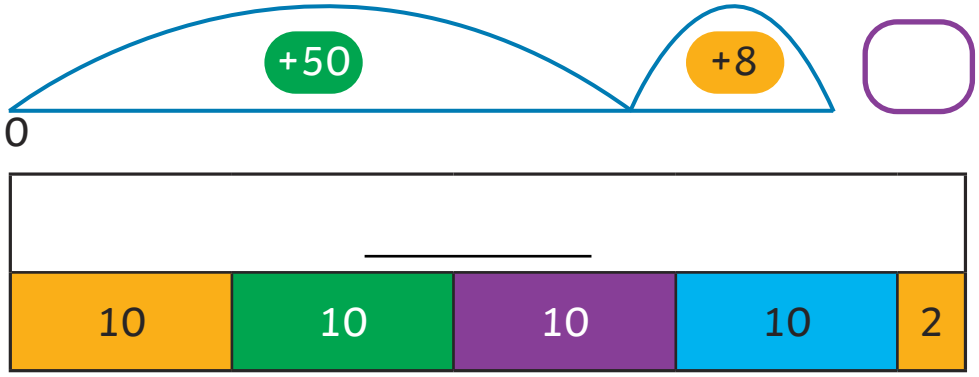
If jumps on the number line are the same size, what does this tell you about the missing numbers?

If bars on the bar model are the same size, what does this tell you about the missing numbers?

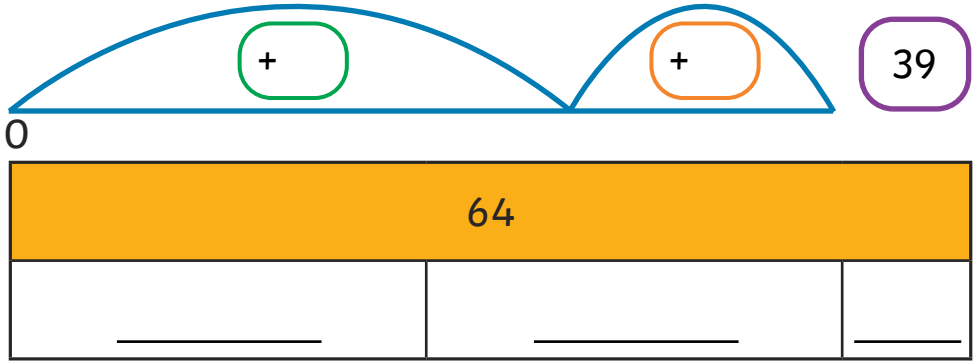
Children can use concrete materials to show how they work this out.

Partitioning in Different Ways

What number is each representation showing?



Can you complete the representations to show how these numbers have been partitioned?



Partition your own number in the bar model.

Partitioning in Different Ways

Adult Guidance with Question Prompts

Children partition two-digit numbers in a variety of ways and know what each digit represents. In this activity, children say whether a number has been correctly partitioned and whether the number line drawn matches this. They can explain their answers and show how the number line should be drawn. They then reason if a number can be partitioned into four parts.

Has Sam partitioned the number 28 correctly?

How many tens does 28 have?

How many ones does 28 have?

If jumps on the number line are different sizes, what should this tell you about the missing numbers?

Can you draw the correct number line to match this partition?

Is there a rule for how many parts you can partition a number into?

Have a go at partitioning it into four.

Is there more than one way to partition it into four parts?

Can you partition it into more than four parts?

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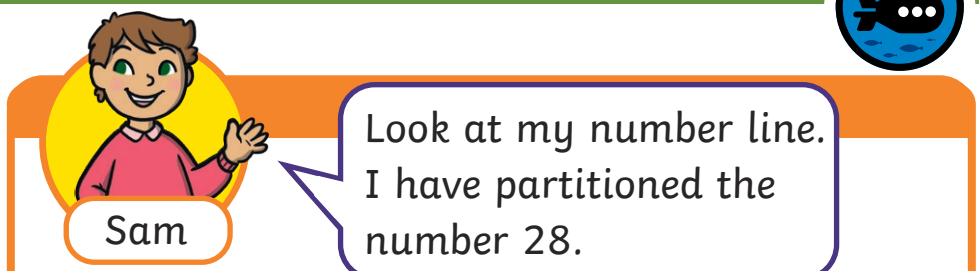
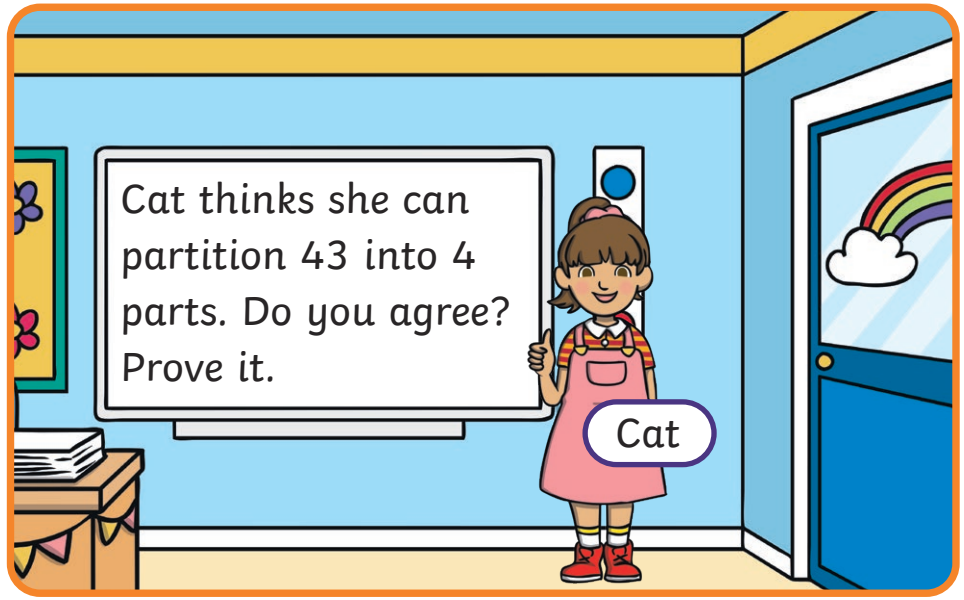
Partitioning in Different Ways



Do you think Sam has done this correctly?
Can you prove it and explain your reasoning?



Partitioning in Different Ways

Adult Guidance with Question Prompts

Children partition two-digit numbers in a variety of ways and know what each digit represents. In this activity, children find the mistake in a variety of representations showing the partitioning of a two-digit number using reasoning to support their answer. They then partition the number 65 in a variety of ways.

How can you check Becky's ideas?

What equipment could you use to help?

Is she correct?

What mistake did she make?

Which is your favourite representation? Why?

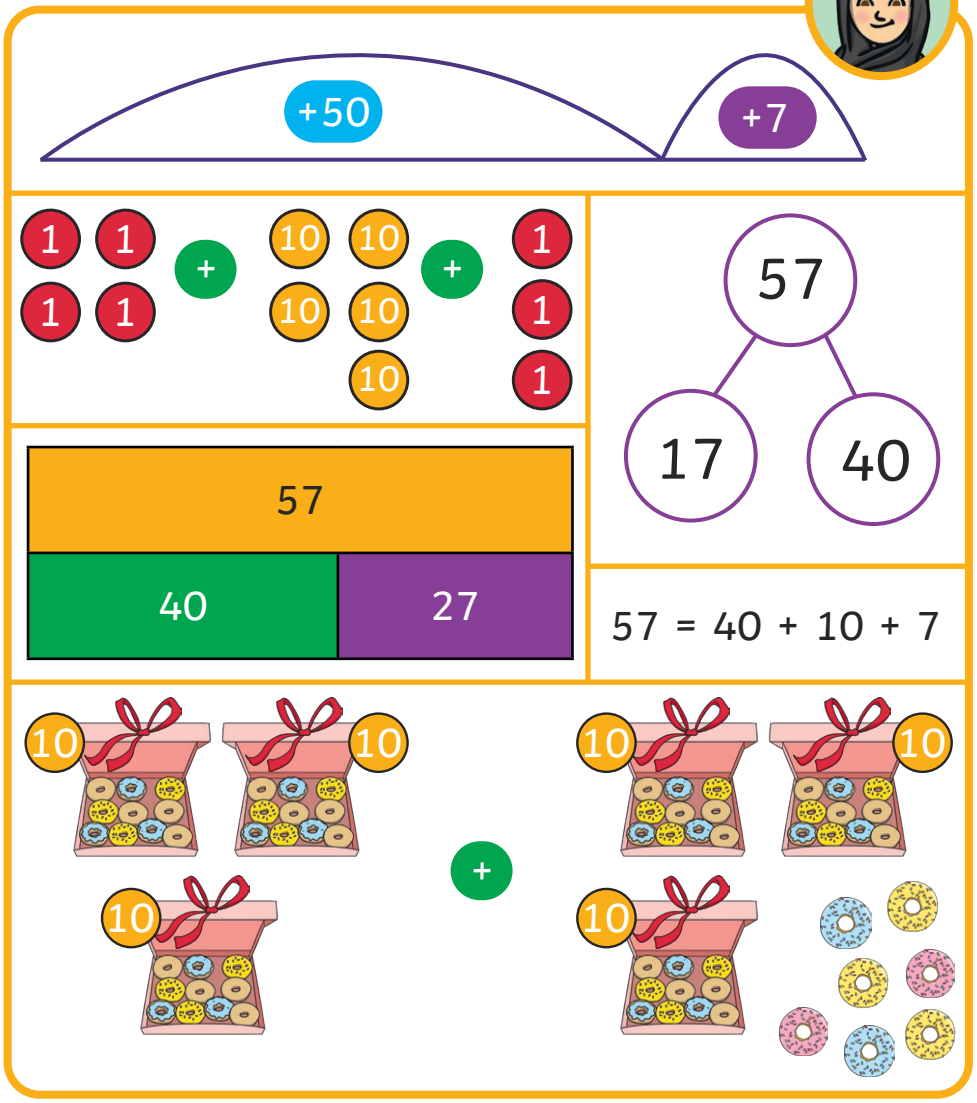
Can you partition 65 in different ways?

Can you represent these in different ways?

Can you partition it to include four parts?

Partitioning in Different Ways

Becky has partitioned 57 in 6 different ways.



Do you agree with Becky? Explain your answer.

Can you do the same for the number 65?

Partitioning

Adult Guidance with Question Prompts

Children develop their understanding of partitioning two-digit numbers into tens and ones. In this activity, children use their knowledge of partitioning to complete a part-whole model and write the correct number sentences to support it. They then go on to create their own part-whole models and supporting number sentences.

How can we use the whole and part to work out the missing part?

Use concrete materials or drawings to make three ones. How many tens can you add or draw until you reach 83?

What number completes the part-whole model?

How can you arrange the numbers in the part-whole model to make four addition calculations?

What other numbers can you partition into tens and ones?

Can you use concrete materials or drawings to show these numbers?

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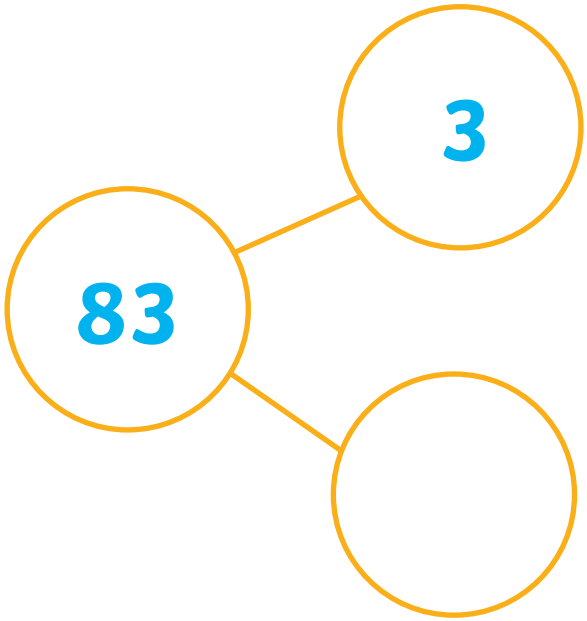
Partitioning

Complete the part-whole model and write four addition number sentences to match it.



____ + ____ = ____

____ + ____ = ____

____ = ____ + ____

____ = ____ + ____

Draw your own part-whole models and write four addition number sentences for each.

Partitioning

Adult Guidance with Question Prompts

Children develop their understanding of partitioning two-digit numbers into tens and ones. In this activity, children match the tens and ones values to the two-digit number to find the ones that don't match. They use reasoning to explain why they don't match.

What clues are there in the number sentences?

Can we look at the tens digit or the ones digit to help us?

Can you explain any patterns you notice?

Which numbers are easier/more difficult to match to their number sentences? Why?

Can you use concrete materials or drawings to show these numbers?

Now, create your own odd one out challenge for a partner. Remember to have one representation that doesn't match.

Can they spot the ones that don't match?

Can they explain why they don't match?

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Partitioning

Match the number sentences to the correct number. Can you find the ones that don't match and explain why they don't match?

10 + 9	66
60 + 6	41
60 + 0	52
80 + 9	19
30 + 1	60
50 + 2	89

Draw part-whole models to represent how each number has been partitioned into tens and ones.

Create your own odd one out challenge for a friend to complete. Can they spot the ones that don't match and explain why?

Partitioning

Adult Guidance with Question Prompts

Children develop their understanding of partitioning two-digit numbers into tens and ones. In this activity, children use their reasoning to explain what will come next in a tens and ones pattern. They then create their own patterns for a friend to continue.

What clues can you see in the pattern?

Can we look at the tens digit or the ones digit to help us?

Write out each number sentence to help you explore the pattern.

What happens at each stage in the pattern? What is the difference?

What number would complete the part-whole model? How do you know?

What do you notice about the numbers of tens and ones at each stage?

Can you show different ways of representing the next three numbers in the pattern using drawings or concrete materials?

Now, create your own pattern for a partner to complete.

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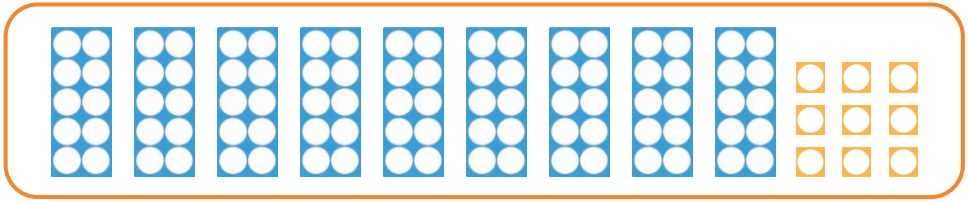
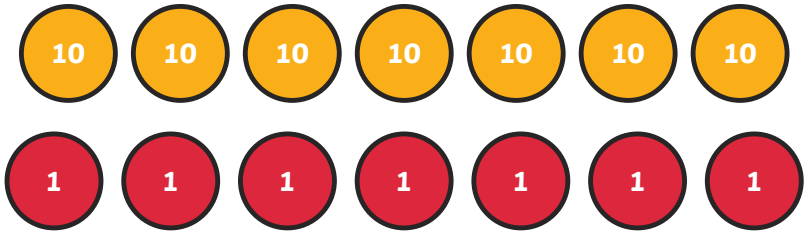
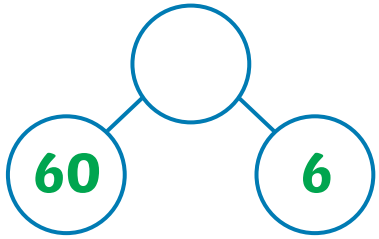
Partitioning

What could come next in the pattern?
Explain how you know.



8 tens and 8 ones





Now, create your own pattern for a friend to complete. Can they say what comes next in the pattern?

Tens and Ones

Adult Guidance with Question Prompts

Children learn to recognise the place value of each digit in a two-digit number. In this activity, children identify the numbers represented and use base ten blocks to represent different numbers.

Which place value grid shows the most/fewest tens?

Which place value grid shows the most/fewest ones?

Which number has six tens?

Which number has one ten?

Which number has seven tens?

Which number has five ones?

Which number has nine ones?

Which number uses zero as a place holder?

Which is the largest number? Can you explain how you know? Which column in the place value grid did you look at first?

Which is the smallest number? Which column in the place value grid did you look at first this time?

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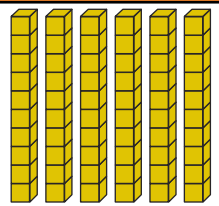
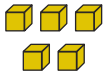
Tens and Ones

What numbers are represented on the place value grids?

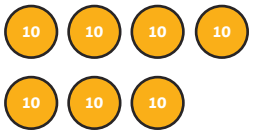
a

Tens	Ones
	

b

Tens	Ones
1	9

c

Tens	Ones
	

Can you make these numbers using equipment?

33 15 72 66 90 28

Tens and Ones

Adult Guidance with Question Prompts

Children learn to recognise the place value of each digit in a two-digit number. In this activity, children use their understanding of place value to explain whether representations are correct or incorrect. It would be useful for children to have access to base ten blocks and place value counters.

What is the biggest digit that can be in the ones column?

What have the children forgotten?

How might each of the children change their answers?

How do you exchanges ones for a ten?

Is it easy to understand these place value grids?

Why not?

Use equipment to show a different way of making the children's numbers.

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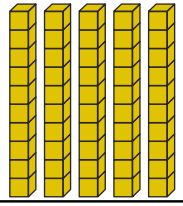
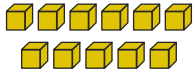
Tens and Ones

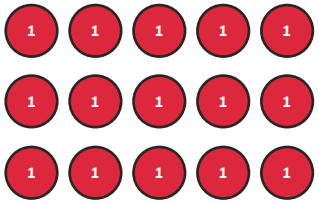
Simon is trying to make the number 61.
Is he right? Can you explain your answer?

Tens	Ones
	

Grace is trying to make the number 39.
Is she right? Can you explain your answer?

Tens	Ones
2	19

Maurice is trying to make the number 55.
Is he right? Can you explain your answer?

Tens	Ones
	

Can you use a place value grid to show how we should make the numbers 61, 39 and 55?

Tens and Ones

Adult Guidance with Question Prompts

Children learn to recognise the place value of each digit in a two-digit number. In this activity, children use their understanding of place value to reason and find all the possibilities of what a number could have been. It would be useful for children to have access to base ten blocks for this activity.

How many tens can you see?

Which numbers are even numbers?

What is the highest number Jane might have made?

What is the lowest number it could have been?

How many even numbers are between 30 and the next tens number?

How many odd numbers are between 30 and the next tens number?

Use equipment to show all the possibilities.

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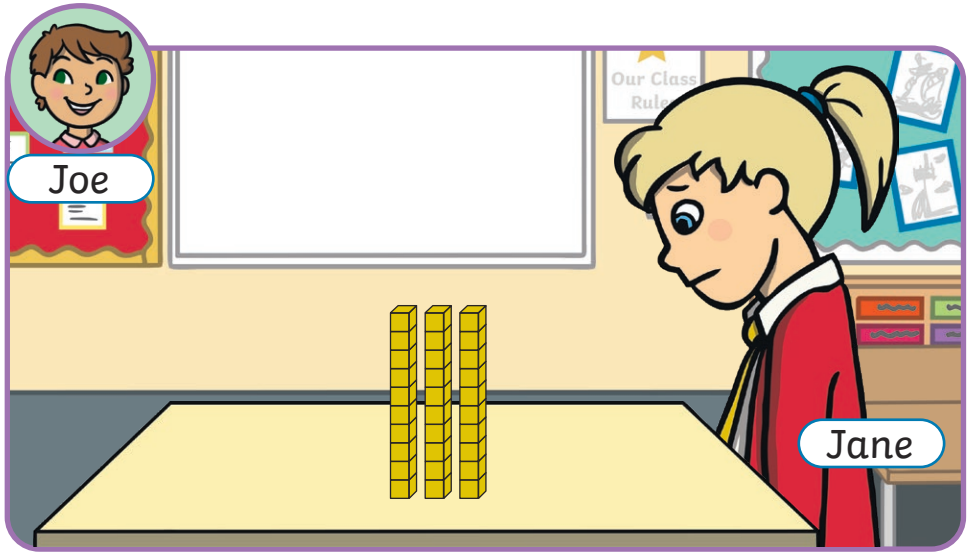
Tens and Ones

Jane made a number using base ten equipment but Joe knocked the ones onto the floor.



Jane's number was an even number.

What numbers could it have been?

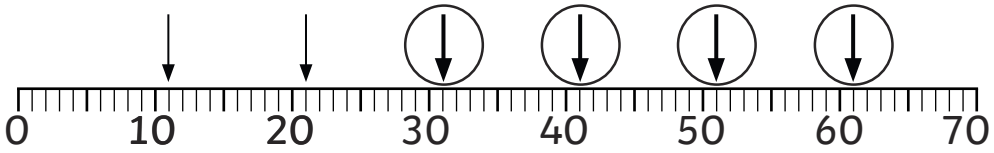
How do you know you have found them all?

What numbers couldn't it have been?

Explain how you know and show your answers on a place value grid.

Count forwards and backwards in tens from the arrows. Mark the numbers on the number line.

a)



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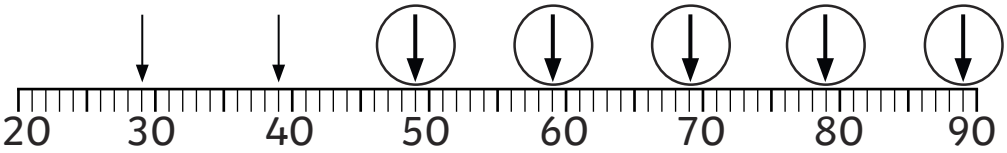

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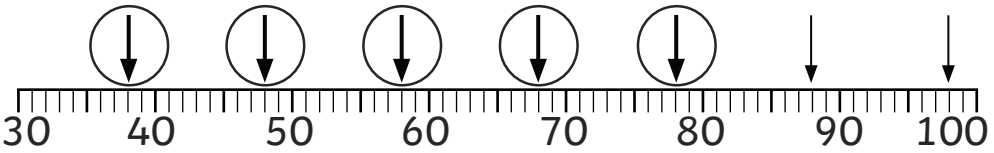

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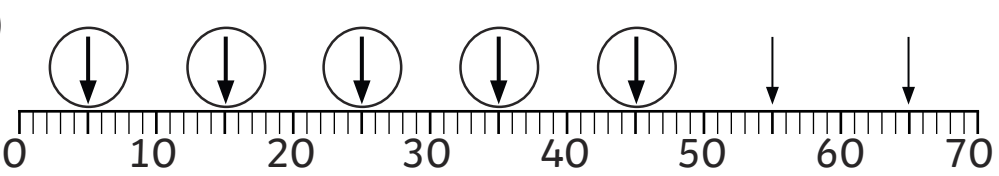
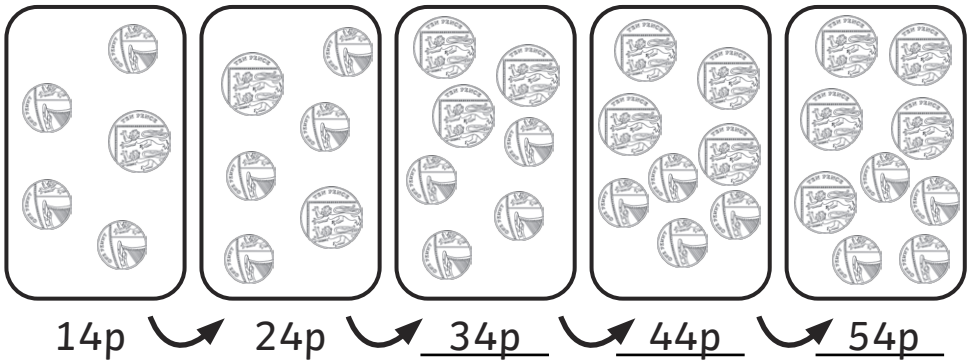
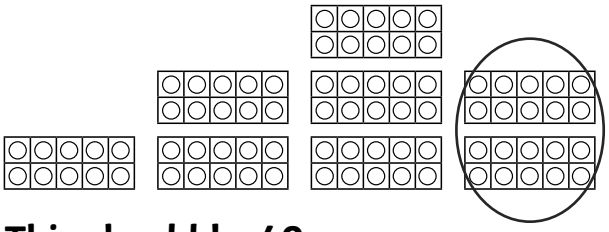
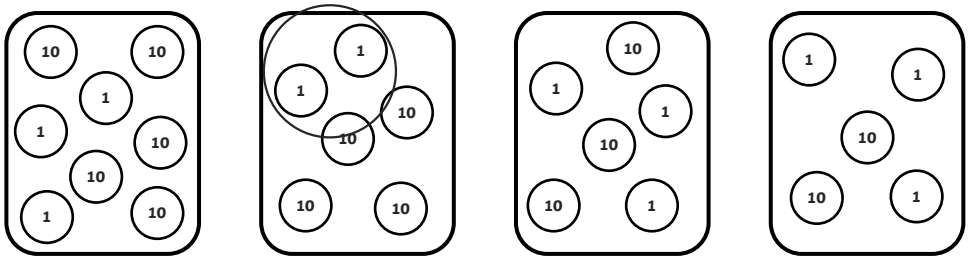


Complete the number sequence:

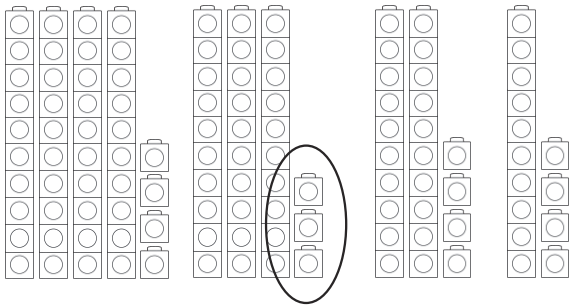




This should be 40.



This should show 43. There should be 3 ones instead of 2.



This should be 34. There should be 4 ones instead of 3.

This should be 79.

James and Debbie will not say the same numbers. James' numbers will always have a 3 in the ones column and Debbie's will always have a 2 in the ones column.

Andrew has 44 doughnuts.

Shamina has 69p left.

Kris will say 100 as he will go:
140, 130, 120, 100

19, 22, 23, 38, 42, 56, 70

70, 56, 42, 38, 23, 22, 19

The incorrect number is 29.

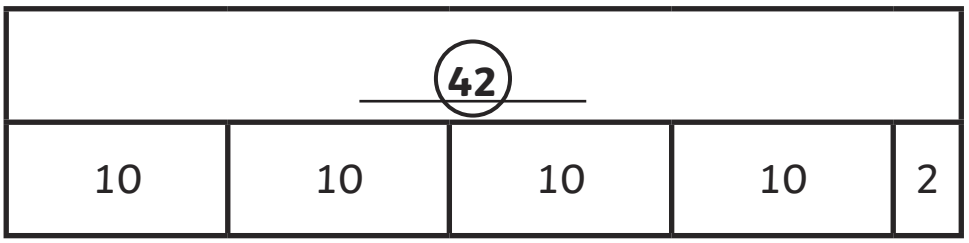
29, 33, 34, 38, 41

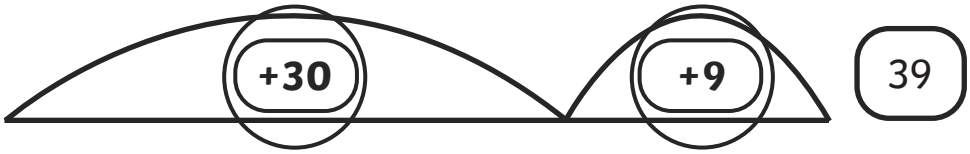
Children represent each number differently when correcting the sequence, for example 33 could be represented as:

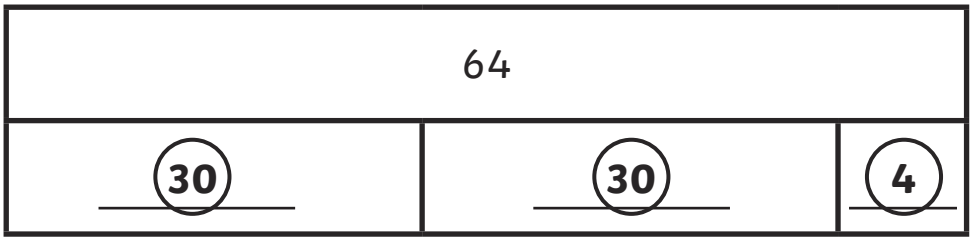
33, three ten pence coins and three one pence coins, 30 + 3, part-whole model, bar model or base ten blocks.

The felt tip could have been 11-13cm.

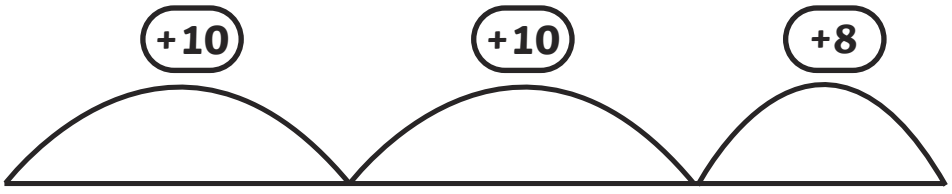
Tim's time could have been 11-17 minutes.







Sam has partitioned 28 correctly but he has not shown it accurately on his number line. The two jumps of 10 should be of equal size and the jump of 8 should only be slightly smaller.

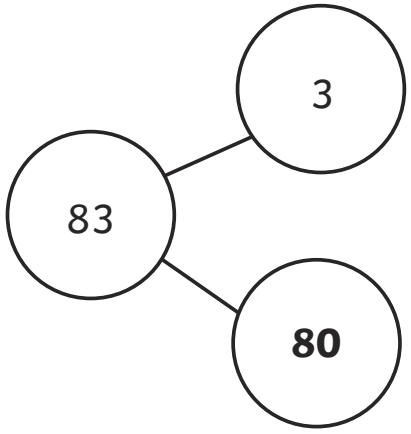


Cat is correct, for example:

20 + 10 + 10 + 3 = 43.

Becky has made a mistake in the bar model. 40 + 27 = 67 not 57.

She has also made a mistake with the doughnuts. 30 + 37 = 67 not 57.



80 + 3 = 83

3 + 80 = 83

83 = 80 + 3

83 = 3 + 80

10 + 9 = 19

60 + 6 = 66

60 + 0 = 60

80 + 9 = 89

50 + 2 = 52

30 + 1 and 41 are the odd ones out as they do not match.
It should be either 30 + 1 and 31 or 40 + 1 and 41.

As the pattern continues each number gets small by 1 ten and 1 one. Next in the pattern would be 5 tens and 5 ones (55) represented in any way.

a) 65

b) 19

c) 70

Children should use the correct number of tens and ones to represent each number.

Simon and Grace have made the correct numbers but Maurice has missed out one ten. However, we normally only have up to nine ones in the ones column. All the children have forgotten that ten ones should be exchanged for one ten.

Jane's number could not have been 31, 33, 35, 37 or 39 as these are all odd numbers. Her number must have been 32, 34, 36 or 38.