Summer Block 4

Place value (within 100)

Small steps

Step 1	Count from 50 to 100
Step 2	Tens to 100
Step 3	Partition into tens and ones
Step 4	The number line to 100
Step 5	1 more, 1 less
Step 6	Compare numbers with the same number of tens
Step 7	Compare any two numbers

Count from 50 to 100

Notes and guidance

In this small step, children practise counting to 100, building on their knowledge of place value to 50 from the Spring term. They may have already explored counting within 100 in different ways through classroom routines or experiences at home.

Children explore oral counting of numbers 50 to 100, both forwards and backwards. Provide opportunities for them to hear the patterns in the sequence of numbers and to help them get used to the sound of the number names. They also explore counting quantities of objects and think about counting as a way of finding "how many?"

Use representations such as hundred squares to point to the numbers written in numerals while counting. This supports children to link the numeral to the sound of the number name.

Things to look out for

- Children may struggle to count when crossing a tens boundary, for example 59, 60, 61
- Children may confuse the pronunciation of the "teen" numbers with the "ty" numbers, for example fifteen and fifty.

Key questions

- What number comes after _____?
- What number comes before _____?
- Do you always need to start counting from 1?
- When you count from _____ to _____ , will you say the number _____?
- Which number comes after 9/19/49/59/99?
- Which number comes before 50/60/70/80/90/100?
- Which numbers sound similar?

Possible sentence stems

- The number that comes after _____ is _____
- The number that comes before _____ is _____
- I want to count to _____ , so I could start counting from _____
- I will/will not say the number _____ because ...
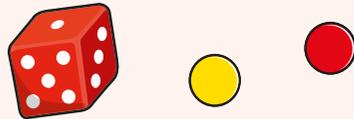
National Curriculum links

- Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number

Count from 50 to 100

Key learning

Provide children with hundred squares, dice and counters.

In pairs, children take turns to roll a dice and move a counter the corresponding numbers of spaces on a hundred square. Encourage children to say the number on each space as they move, not the number they have rolled on the dice. The aim of the game is to be the first to reach 100. Children could also start at 100 and race backwards to zero.

Read *One Is a Snail, Ten Is a Crab* by April Pulley Sayre and Jeff Sayre.

Ask children to select a creature, count the number of legs and place that number of counters on ten frames. The aim of the game is to be the first to 100

Encourage children to count on as they place their counters on their ten frames.

Say a starting number and ask children to count on from that number together. You could point up or down to indicate whether they need to count forwards or backwards.

To extend this activity, children could give you a starting number and you could make some deliberate mistakes for them to spot.

• Complete the number tracks.

| 52 | 53 | | | | | | |

| 68 | 67 | | | | | |

| | 48 | 49 | | | | |

| 77 | 78 | | | | | |

| | | | 71 | 72 | | |

Count from 50 to 100

Reasoning and problem solving

Mrs Smith asks Jo, Ron and Tiny to count to 63, starting from 58

Jo: 58, 59, 61, 62, 63

Ron: fifty-eight, fifty-nine, sixteen, sixty-one, sixty-two, sixty-three

Tiny: 63, 62, 61, 60, 59, 58

What mistakes have they made?

Jo: missed out 60

Ron: confused sixty with sixteen

Tiny: counted backwards, not forwards

Tom writes the numbers in a hundred square.

Help him to fill in the gaps.

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

hundred square completed correctly

How did you know which numbers to write?

Tens to 100

Notes and guidance

In this small step, children continue to develop their understanding of numbers to 100

Children begin by extending their knowledge of multiples of 10 from the Spring term to include 60, 70, 80, 90 and 100. They then explore the efficiency of counting in ones compared to grouping in tens. The use of practical equipment such as ten frames, base 10 and bead strings supports this. Provide children with a range of different practical experiences where they can explore counting by grouping in tens and counting by leaving items as ones. This lays the foundation and underpins children's understanding of tens and ones. It is crucial for future learning that they are provided with opportunities to explore and understand that 1 ten is equal to 10 ones.

Things to look out for

- Children may not see the equivalence between 10 ones and 1 ten.

- Children may rely on counting items individually as ones, rather than grouping objects into tens.

Key questions

- How can you show 1 one/10 ones?

- How can you show 1 ten?

- How many tens are there in _____?

- If you have 7 full ten frames, what number have you made?

- Is there more than one way to count the objects?

- What is the most efficient way to count the objects?

Possible sentence stems

- _____ ten frames are full, so I know that I have made _____

- There are _____ tens.

  This is equal to _____

  There are _____ more ones.

  The number is _____

National Curriculum links

- Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number

- Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s
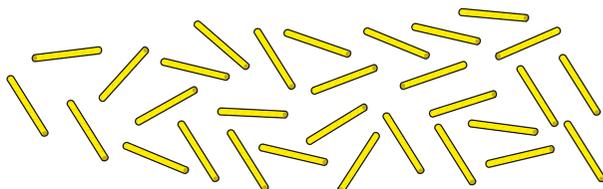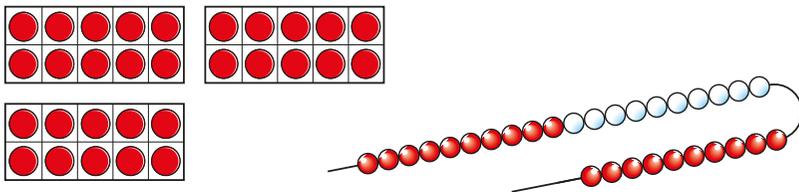
Tens to 100

Key learning

Show children representations of numbers, some of which show multiples of 10 and some that do not. Ask them to decide if the number shown is a multiple of 10 and to explain how they know.
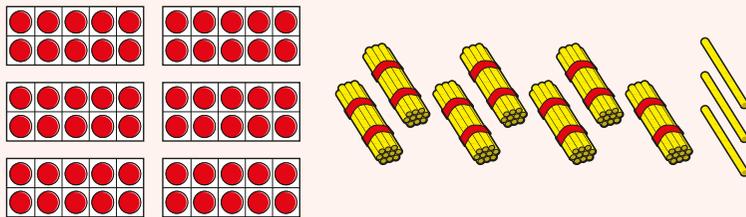
- What is the same? What is different?

Which is easiest to count? Why?

- Complete the table.

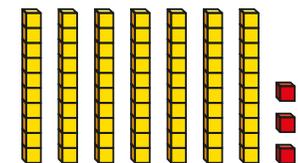| Base 10	Number	How many tens?
	50	
		6 tens
	80	
		9 tens

- Complete the sentences to match the base 10

There are _____ tens.

This is equal to _____

There are _____ more ones.

The number is _____

Tens to 100

Reasoning and problem solving

Tiny uses number pieces to make a number.
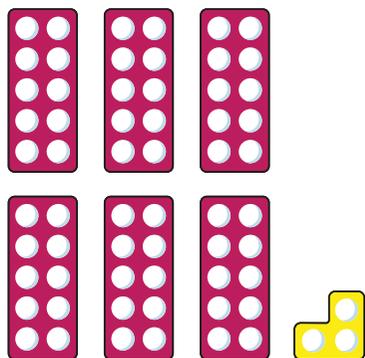
6 + 3 = 9

What mistake has Tiny made?

What number is shown?

How do you know?

63

6 tens and 3 more

Kay is playing a darts game.
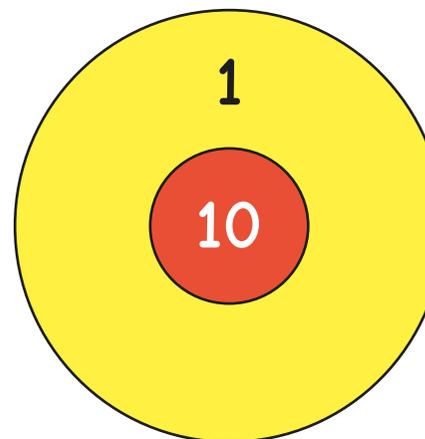
She scores 10 points if the dart lands in the red zone.

She scores 1 point if the dart lands in the yellow zone.

Kay throws 9 darts.

How many points could she have scored?

9, 18, 27, 36, 45, 54, 63, 72, 81, 90

Partition into tens and ones

Notes and guidance

In this small step, children further develop their understanding of place value for 2-digit numbers from the Spring term, as they now partition numbers to 100

Children identify how many tens and how many ones make a number. They begin by investigating partitioning with concrete resources, such as base 10, followed by abstract numbers and other representations such as part-whole models. They need to recognise that it does not matter whether they record the tens part or the ones part first, as the whole remains the same.

Children explore the link between the number names, the digits used and the tens and ones structure to support their understanding of numbers up to 100

At this stage, children do not need to describe the part-whole model as an addition number sentence.

Things to look out for

- Children may partition the number into its digits, rather than considering the value of each digit, for example stating that 64 is made up of 6 and 4

- Children may find it confusing if the parts are shown in a non-standard order and may write that, for example, 2 and 80 are equal to 280 or 28 rather than 82

Key questions

- How many tens are there? How many ones are there? What is the number?

- What is the whole?

- What are the parts?

- Does it matter which way round the parts are?

- How does partitioning a number help you to read and write it?

Possible sentence stems

- There are _____ tens.

  There are _____ ones.

  The number is _____

- _____ is the whole.
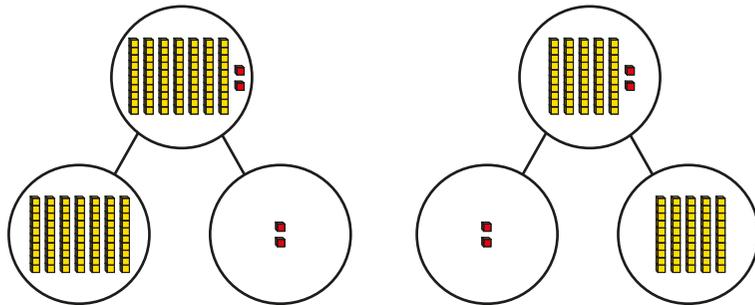
  _____ is a part and _____ is a part.

National Curriculum links

- Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number

- Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s

Partition into tens and ones

Key learning

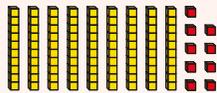- Complete the sentences for each part-whole model.

There are _____ tens.

There are _____ ones.

The number is _____

What is the same and what is different about the part-whole models?

Provide children with 9 tens and 9 ones in base 10 and ask them to make a number using some of their base 10. They can then partition their number into tens and ones. Ask children to complete a part-whole model to show their number.

Read *Penguin Place Value* by Kathleen L Stone and ask questions about the book. How many fish have the penguins caught? How many groups of ten were there? How many extra ones are there?

Ask children to draw a part-whole model for the number of fish caught.

- Complete the part-whole models.
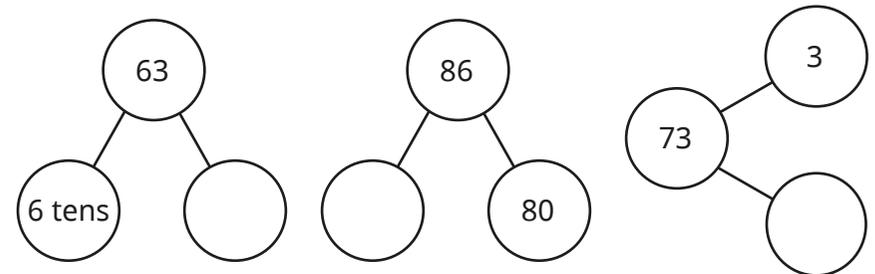
- Use part-whole models to partition the numbers into tens and ones.

| 54 | 94 | 87 | 61 |

Partition into tens and ones

Reasoning and problem solving

Tiny is working out how many sweets there are.

10 **10** **10** **10** **10** **10** **10**
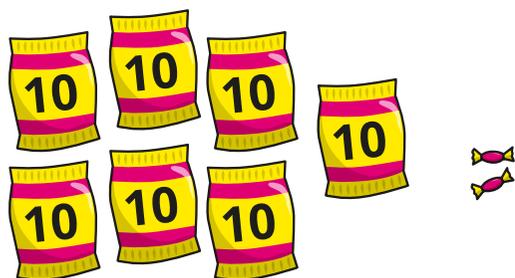
There are 9 sweets.

Do you agree with Tiny?
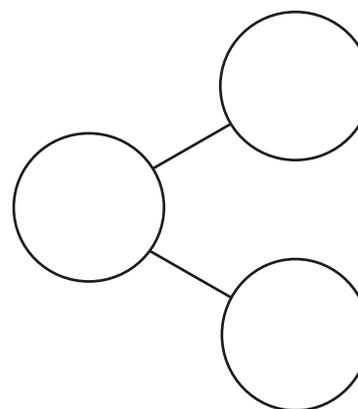
Explain your answer.

No

Here are four digit cards.

5 **7** **9** **0**

What 2-digit numbers can you make?

Use a part-whole model to partition each number.

50, 57, 59, 70, 75, 79, 90, 95, 97

multiple possible answers

The number line to 100

Notes and guidance

Children have previously encountered number lines to 10, 20 and 50. In this small step, this is extended to number lines up to 100

Children see examples of number lines with different start and end point values that have intervals in both 1s and 10s. They use their knowledge of counting both forwards and backwards to label number lines counting up in 1s, then in 10s. They identify missing values on a number line, as well as marking the positions of given numbers on unlabelled number lines.

Once they are confident with labelling and finding numbers on unlabelled number lines, children can progress to estimating the positions of numbers on blank number lines.

Things to look out for

- Children may struggle to label a number line if it crosses a multiple of 10
- Children may assume that all number lines start from zero or count in 1s.
- Children may label the intervals rather than the divisions.

Key questions

- What number comes after/before _____ ?
- What is the value of the start/end of the number line?
- How much is each jump on the number line? How do you know?
- What number is halfway along the number line?
- Should _____ be to the left or right of halfway? How do you know?
- Is _____ closer to _____ or _____ ?

Possible sentence stems

- I know the number line is going up in _____ s because …
- The number halfway along the number line is _____
- _____ is to the left/right of halfway.

National Curriculum links

- Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number
- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
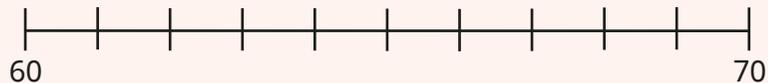
The number line to 100

Key learning

Use chalk to draw number lines with different start and end point values on the playground so that the number line is always counting in 1s. Children practise starting on a given number and hopping to another. Discuss which numbers they land on.
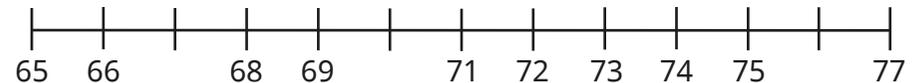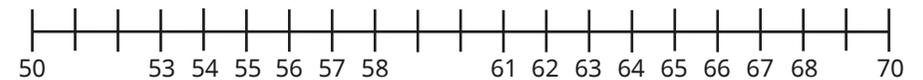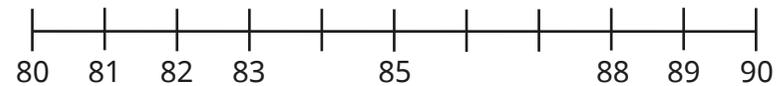
Provide children with a number line and digit cards from 0 to 9

6

60 _____ 70

Children take turns to pick a digit card to complete the 2-digit number. They then write their number in the correct position on the number line.

This could be extended to number lines with different start and end point values for example 54 to 66, to see if there are other 2-digit numbers that could be made using the digit cards.
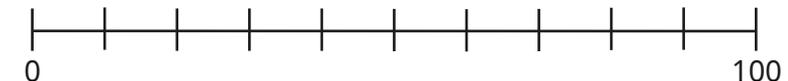
- Complete the number lines.

80 81 82 83   85   88 89 90

50   53 54 55 56 57 58   61 62 63 64 65 66 67 68   70

65 66   68 69   71 72 73 74 75   77

- Draw arrows to show where the numbers belong on the number line.

| 73 | | 79 | | 82 |

71 _____ 83

- Complete the number line.

0 _____ 100

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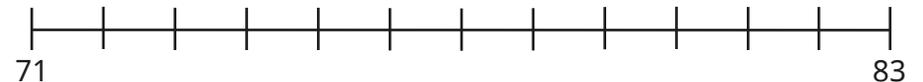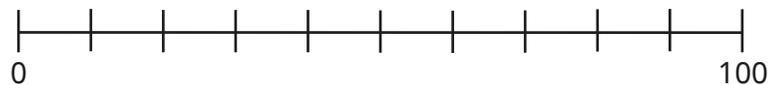
The number line to 100

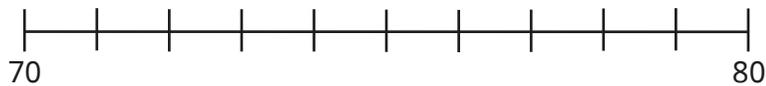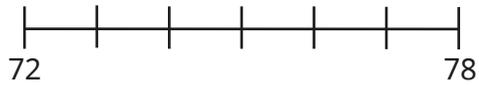## Reasoning and problem solving

Label 75 on each number line.

72   78

70   80
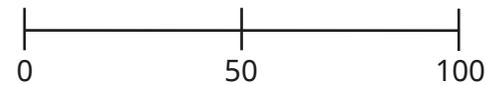
0   100

Which number line was easiest to label?

Which number line was hardest to label?

75 accurately marked on each number line

Tiny estimates where the numbers belong on the number line.

| 21 | 53 | 94 | 48 |

0   50   100

I know that 21 is to the left of 50

Explain why Tiny is correct.

Write **left** or **right** to complete the sentences.

53 is to the _____ of 50

94 is to the _____ of 50

48 is to the _____ of 50

right
right
left

1 more, 1 less

Notes and guidance

In this small step, children revisit the concept of 1 more and 1 less. They explore this in the context of numbers from 50 to 100 by applying the counting skills developed earlier in the block.

To support children in understanding the meaning of the words "more" and "less", provide opportunities for them to hear and use these words in context, for example "Please pass me 1 more pen." They need to know that 1 more is the number after the given number, and 1 less is the number before the given number.

Base 10, hundred squares and number lines can be useful representations to support children in exploring this concept.

Things to look out for

- Children can find counting backwards more challenging and miss out numbers or say them in the wrong order.

- Children may struggle to identify 1 more or 1 less when the number crosses a multiple of 10

- When using base 10, children may add or remove a ten rather than a one piece. As a result, they find 10 more or less rather than 1 more or less.

Key questions

- How can you show the number_____?

- What does 1 more/less mean?

- How can you find 1 more/less?

- How can you use a number line to find 1 more/less?

- How does this change the number? What digit(s) change?

- Is it only ever the ones digit that changes?

Possible sentence stems

- 1 more than _____ is _____

- 1 less than _____ is _____

- _____ is 1 more than _____

- _____ is 1 less than _____

National Curriculum links

- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

1 more, 1 less

Key learning

Choose a number. On a hundred square, remove or cover up the numbers before and after your number. Ask children to tell you 1 more and 1 less than your number.

Ask children to build different 2-digit numbers using base 10. They then explore how to use the base 10 to find 1 more or 1 less than their starting number. Discuss what happens if their number has 9 ones and they find 1 more, or zero ones and they find 1 less.
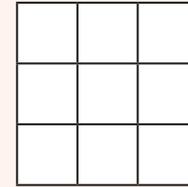
Provide children with a selection of digit cards.

7   **5**   **9**   **6**

Children choose two cards to make a 2-digit number. Ask them what is 1 more and 1 less than their number. Discuss which digit(s) change.

Provide children with a 3 × 3 grid to play "1 more, 1 less bingo".

Ask children to put a number between 50 and 100 in each box.

Call out numbers between 50 and 100. Children can only cross out a number on their grid if it is 1 more or 1 less than the number called out.
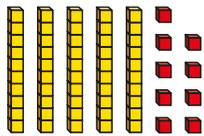
- Part of a hundred square has been cut out.

		37	
	46	47	
55		57		
65			
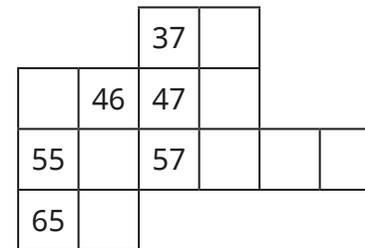
Fill in the missing numbers.
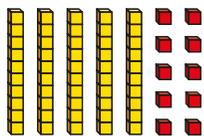
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1 more, 1 less

Reasoning and problem solving

Tiny uses base 10 to make a number.

Tiny makes 1 more than the number.

1 more than my starting number is 510
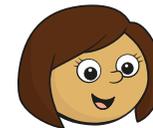
60

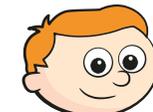What mistake has Tiny made?

Use base 10 to find 1 more than 59
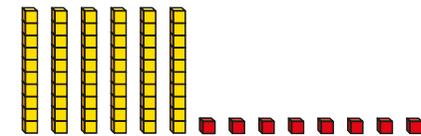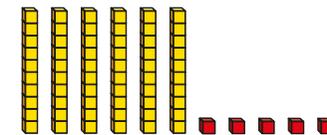
Move 2 ones to make the statements correct.

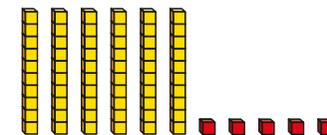- Ron has 1 more than Kim
- Jo has 1 less than Kim

Kim

Ron

Jo

Move 2 ones from Kim and give them to Ron.

Compare numbers with the same number of tens

Notes and guidance

In this small step, children build on their learning from earlier in the year to compare numbers within 100. In previous blocks, children were introduced to the terms "greater than", "less than" and "equal to" alongside the corresponding inequality symbols >, < and =.

Children will need to practise using the words "fewer" and "less" accurately. Fewer is used when talking about a number of objects, whereas less is used when talking about values.

Children use their understanding of the values of the digits in a 2-digit number to compare numbers with the same number of tens but a different number of ones. Encourage them to notice that when the tens digit is the same, they only need to compare the number of ones to decide which number is greater.

Key questions

- How can you use base 10 to show the numbers?

- How many tens does each number have? How many ones does each number have?

- Is _____ greater/less than _____? How do you know?

- How can a number line help you to compare numbers?

Possible sentence stems

- _____ is equal to _____ tens and _____ ones.

- _____ tens is _____ to _____ tens. _____ ones is greater/less than _____ ones. So _____ is greater/less than _____

- _____ is greater/less than _____ because ...

Things to look out for

- Children may confuse the inequality signs.

- Children may confuse the values of the ones digit and the tens digit.

National Curriculum links

- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
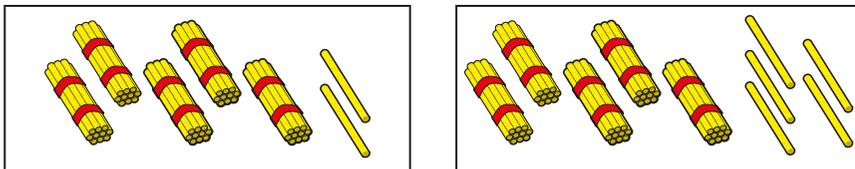
Compare numbers with the same number of tens

Key learning

Provide pairs of children with the same number of tens each. Then give them between 1 and 18 ones to share. Ask them to split their ones to make two 2-digit numbers. They can then compare their numbers, completing the sentence using "greater" or "less".
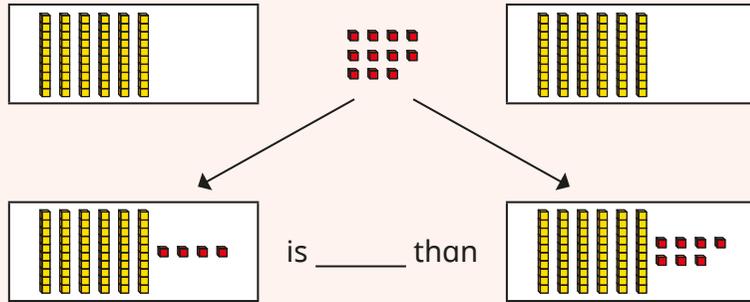
is _____ than

- Complete the sentences to compare the numbers.
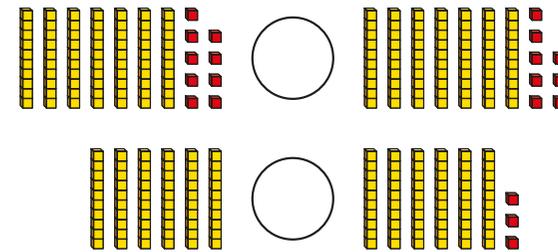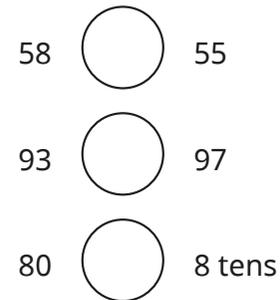
There are _____ tens in each number.
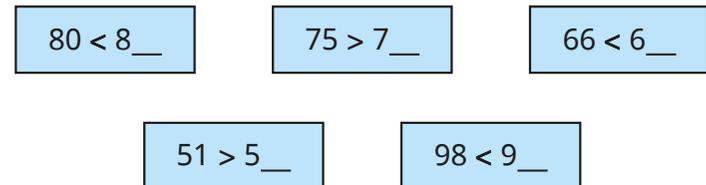
2 ones is _____ than 5 ones.

So 52 is _____ than 55

- Write < or > to compare the numbers.

- Write <, > or = to compare the numbers.

58 ◯ 55

93 ◯ 97

80 ◯ 8 tens

- Complete the statements.

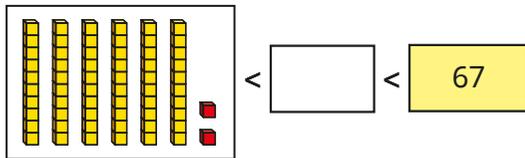| 80 < 8__ | 75 > 7__ | 66 < 6__ |

| 51 > 5__ | 98 < 9__ |

Is there more than one way to complete any of the statements?

Compare numbers with the same number of tens

Reasoning and problem solving

What could the missing number be?

 < [ ] < 67

Is there more than one answer?

63, 64, 65, 66

When I compare 2-digit numbers with the same number of tens, I only need to compare the number of ones.

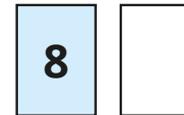Do you agree with Tiny?

Explain your answer.

Yes

Here are some digit cards.

4   0   7   5

Ron and Mo each choose a digit card to make a 2-digit number.

Ron   8 [ ]

Mo   8 [ ]

Ron's number is greater than Mo's number.

What numbers could they have made?

How many answers can you find?
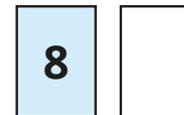
six possible combinations:

87 and 85/84/80

85 and 84/80

84 and 80

Compare any two numbers

Notes and guidance

In this small step, children build on their learning from the previous step to compare any two numbers.

To begin with, children compare multiples of 10. They then use their understanding of the value of the digits in a 2-digit number to firstly compare two numbers with the same number of ones and different tens, before comparing two numbers with different numbers of tens and ones. They use their knowledge of partitioning to support them in this. It is important for children to explore a range of concrete resources to make comparisons more visual.

Children use the terms "greater than", "less than" and "equal to" alongside the corresponding inequality symbols >, < and =. It is important that they have the opportunity to use all the symbols, in order to reinforce the meaning of each one.

Things to look out for

- Children may confuse the inequality symbols.

- Children may confuse the values of the ones digit and the tens digit.

- Children may compare numbers by only looking at either the ones digit or the tens digit.

Key questions

- Which is greater, 7 tens or 3 tens/70 or 30? How do you know?

- How can you make both numbers using base 10?

- Which number has more/fewer tens?

- Which number has more/fewer ones?

- Which number is greater? How do you know?

- Why is it important to look at the tens before the ones?

Possible sentence stems

- _____ tens are greater/less than _____ tens.

- When I compare numbers, I need to compare the _____ first.

- _____ is equal to _____ tens and _____ ones.

- _____ is greater/less than _____ because …

National Curriculum links

- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

Compare any two numbers

Key learning

- Write **greater** or **less** to complete the sentences.

  Use base 10 to help you.

  ▶ 7 tens is _____ than 4 tens

  ▶ 2 tens is _____ than 9 tens.

  ▶ 80 is _____ than 30

Provide pairs of children with the same number of ones each. Then give them between 1 and 18 tens to share. Ask them to split the tens to make two 2-digit numbers. They can then compare their numbers, completing the sentence using "greater" or "less".
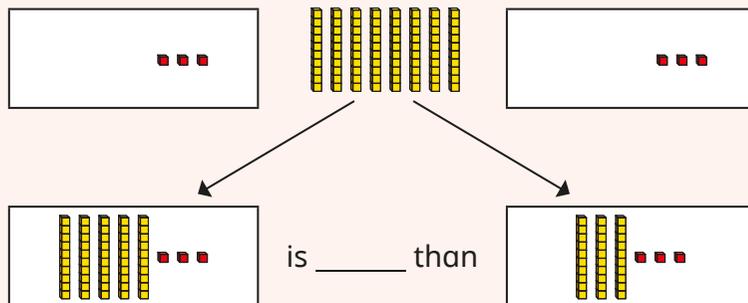
is _____ than

What do they notice?

Put children into pairs. Each child needs base 10 and two 0–9 dice.

Both children roll their dice to make a 2-digit number. The first dice gives the number of tens and the second dice the number of ones. Children then use base 10 to build their numbers and compare them using the inequality symbols.

- Estimate where the numbers belong on the number line.

  | 55 | 75 | 69 | 81 |

  50   60   70   80   90   100
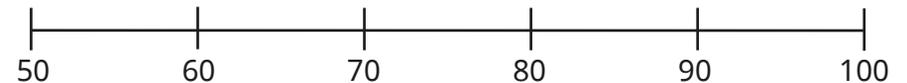
  Write < , > or = to compare the numbers.

  55 ◯ 75   69 ◯ 75

  75 ◯ 81   81 ◯ 69

Compare any two numbers

Reasoning and problem solving

What could the missing number be?

$>$ ☐ $>$ 7 ones and 4 tens

How many possible answers can you find?

48, 49, 50, 51 or 52 either written, drawn or built

Tiny is comparing numbers.

I only need to look at the number of ones to compare numbers.

Do you agree with Tiny?

Explain your answer.

No

Use the numbers to complete the statements.

| 63 | 45 | 24 | 99 |

You can use each number only once.

☐ $<$ ☐   ☐ $>$ ☐

How many answers can you find?

multiple possible answers, e.g.

63 < 99   45 > 24

45 < 63   99 > 24

Here are some digit cards.

| 1 | 3 | 5 | 6 |

Use the digit cards to make the statement correct.

☐☐ $<$ ☐☐

How many answers can you find?

multiple possible answers, e.g.

31 < 65