White Rose Maths

Summer - Block 4

Place Value (within 100)

Overview

Small Steps

- Counting forwards and backwards within 100
- Partitioning numbers
- Comparing numbers (1)
- Comparing numbers (2)
- Ordering numbers
- One more, one less

Notes for 2020/21

Children continue their learning on place value. Start with numbers within 10, 20 and 50 to ensure understanding of this before moving on to look at numbers within 100.

Counting to 100

Notes and Guidance

Children build on their previous learning of numbers to 50 They continue grouping in 10s to make counting quicker and more efficient.

Children are introduced to the hundred square and use it to count forwards and backwards within 100

Using dot-to-dot activities, both forwards and backwards, with a range of numbers is a fun way to explore counting to 100

Mathematical Talk

What is the most efficient way to count the objects?

How many are in each group?

How many more groups would you need to make 100?

What do you notice about the layout of the hundred square?

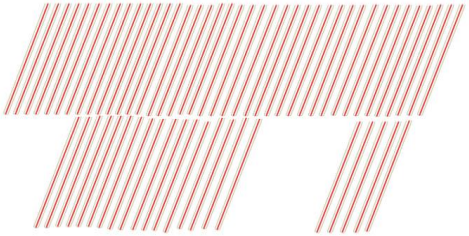
Can you tell you friend an efficient way to find the number 57?

Will I count the number ___ if I am counting from ____ to ____?

Varied Fluency

- How many flowers are there altogether?
  Can you represent the flowers using ten frames and counters?

- How many straws are there?
  Bundle the straws into tens to make them easier to count.



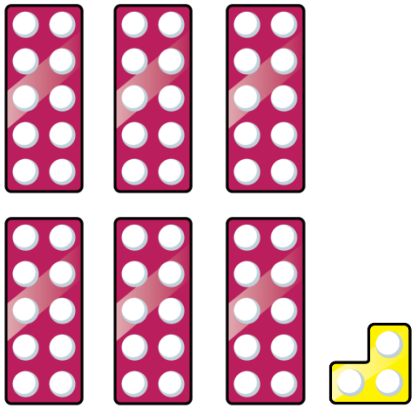
- Use the hundred square to:
  - Count forwards from 80 to 92
  - Count backwards from 73 to 65
  - Write down the numbers between 75 and 81
  - Find what number comes between 46 and 48

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

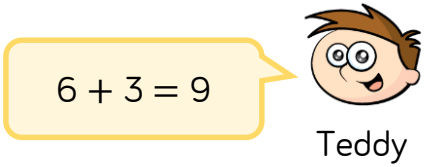
Counting to 100

Reasoning and Problem Solving

Teddy has made a number using the number shapes.



He says



What mistake has Teddy made?

Teddy has counted the six 10s as 1s and added it to the 3

Correct the mistake in each sequence.

- 34, 35, 36, 38, 39
- 98, 97, 96, 95, 93
- 78, 79, 18, 81, 82

- 34, 35, 36, 37, 38, 39
- 98, 97, 96, 95, 94, 93
- 78, 79, 80, 81, 82

Partitioning Numbers

Notes and Guidance

Children continue grouping in 10s to identify how many tens and ones are within a number. Flexible partitioning is not expected at this stage, however children may notice other ways of partitioning numbers by themselves. Children will use concrete resources to group objects into tens and ones. Place value charts can be introduced to read and record tens and ones within a number.

Mathematical Talk

Can you make groups? How many could we put in each group?

What happens when we have 10 ones?

How many groups of 10 are there?

How many ones are there?

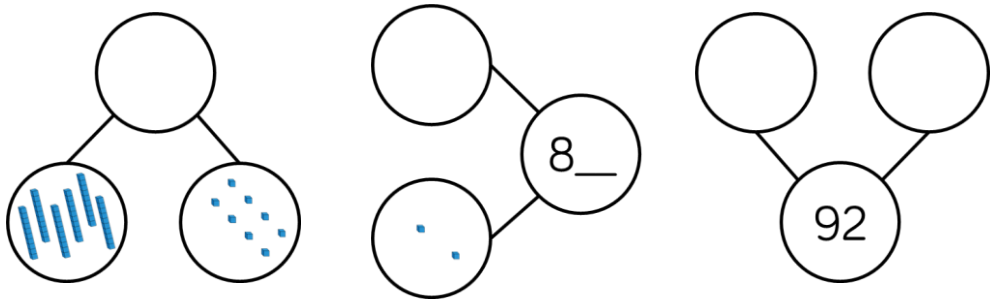
Varied Fluency

- Use Base 10 to make these numbers. Complete the stem sentences.

70 36 64 81 22 66 49

70 has 7 tens and 0 ones.

- Complete the part-whole models.



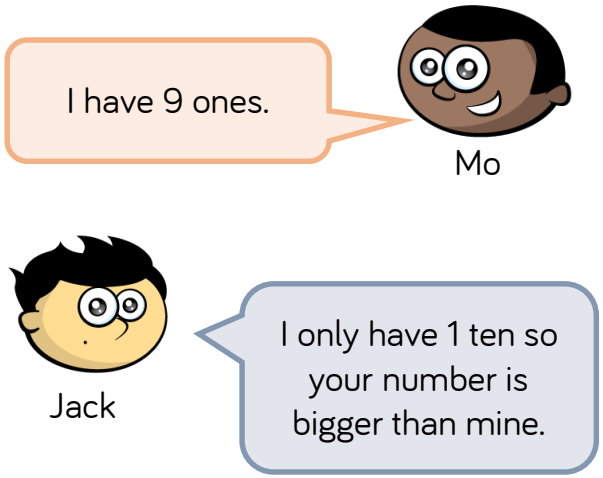
- Show these numbers using a place value chart, Base 10 or straws.

Tens	Ones

73 50 88 79
91 85 62 93

Partitioning Numbers

Reasoning and Problem Solving



Is Jack correct?
Prove it.

Jack is incorrect.

Jack's ten is equal to ten ones.

Mo only has 9 ones.

Use Base 10 to make a number:

- Greater than 84
- Less than 70
- Greater than 75 but less than 87

Children may make a range of numbers to fit the given criteria. Ensure children are not mixing up the tens and ones.

Use Base 10 to make a number.

The number has 5 tens and fewer than 8 ones

How many possible numbers are there?

They could make 50, 51, 52, 53, 54, 55, 56 or 57
So there are eight possibilities.

Comparing Numbers (1)

Notes and Guidance

Children use their partitioning knowledge to begin comparing numbers within 100

It is important for children to work with a range of equipment, both natural and man-made to make comparisons more visual.

Children use the language 'more than', 'less than' and 'equal to' alongside the inequality symbols.

Mathematical Talk

Which number has the most/fewest tens? Which number has the most/fewest ones?

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

If the number is greater/less which direction will we move on the number line?

How can we count efficiently?

Varied Fluency

- Use Base 10 to make these numbers on place value charts. Write how many tens and ones are in each number.

78 and 61

Tens	Ones

90 and 89

Tens	Ones

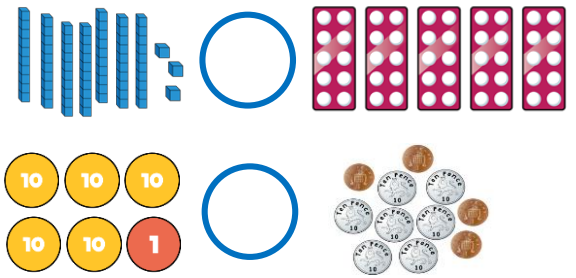
64 and 92

Tens	Ones

Which number from each pair is the largest? Discuss how you know.

- On the hundred square, find a number:
  - Less than 69
  - Greater than 79
  - Greater than 69 but less than 79

- Use equipment from your classroom to compare the amounts using >, < or =

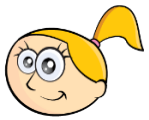


Comparing Numbers (1)

Reasoning and Problem Solving

Eva and Alex have some number cards.

1 2 4



Eva

Alex

3 5 6

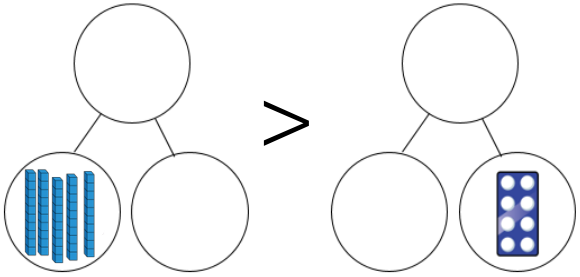
They both use two of their cards to make two-digit numbers.

Eva's number is bigger than Alex's number.

What could their numbers be? How many answers can you find?

Eva could have 41, or 42 and Alex could have 35 or 36.

How many ways can you complete the part-whole models to make the calculation correct?



Children can choose a range of numbers to complete the part-whole models, but need to ensure the first model is greater than the second..
Possible answers include:
50 > 8
51 > 48 etc.

Comparing Numbers (2)

Notes and Guidance

Children compare numbers and amounts using comparison language, more than, less than, equal to as well as the symbols $<$, $>$ and $=$

Children demonstrate their understanding of the value of the digits in a 2-digit number. They represent this using concrete manipulatives before ordering numbers. Children should be aware when comparing three or more numbers opposite inequality symbols should not be used. (e.g. $\square < \square > \square$)

Mathematical Talk

Which number is the biggest/smallest? How do you know?

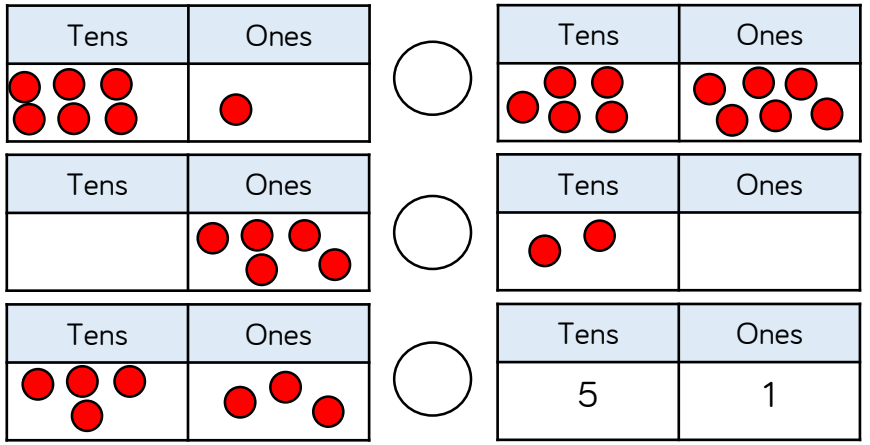
When ordering, which digit should you consider first?

Is there more than one number that could complete the statement?

What is the largest/smallest number that could complete the statement?

Varied Fluency

- Compare the amounts using $<$, $>$ or $=$



- Complete the statements:

$70 < \square$ $\quad \square > 70$ $\quad \square < 70$

$\square < 1$ $\quad 0 < \square$ $\quad \square < 100$

- Complete the stem sentences and statements.

62 is _____ than 55 but _____ than 70

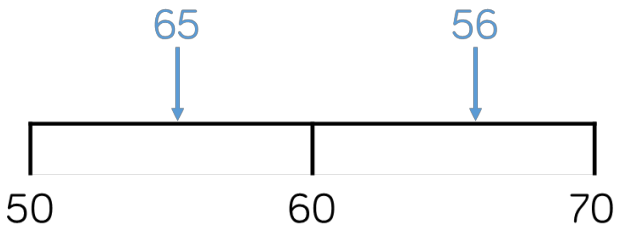
$\square < \square < \square$ $\quad \square > \square > \square$

___ is greater than ____ but less than ____

Comparing Numbers (2)

Reasoning and Problem Solving

Tommy has marked numbers on his number lines.
Has he made any mistakes?



Explain to a friend the mistake you think he has made.

Show the numbers on your own number line.

- 75
- 34
- 91
- 57

65 is greater than 60 and therefore should come after 60 on the number line.

56 is less than 60 so should come before it on the number line.

Tommy could have read the tens and ones digit the wrong way around or mixed up the 2 numbers.

How many different ways can you complete the place value charts to make the statement correct?

Tens	Ones
5	

<

Tens	Ones
	3

$50 < 53$
$51 < 53$
$52 < 53$

Placing a 6, 7, 8 or 9 in the tens column means that children can then place any number in the ones column.

Ordering Numbers

Notes and Guidance

Children order sets of objects and numbers from smallest to largest and largest to smallest.

Children use the language 'most', 'bigger', 'biggest', 'larger', 'largest', 'smaller', 'smallest' and 'least'.
Children revisit and practise position and ordinal numbers (first, second, third etc.)

Mathematical Talk

How are we ordering these objects/numbers? Which should we start with?

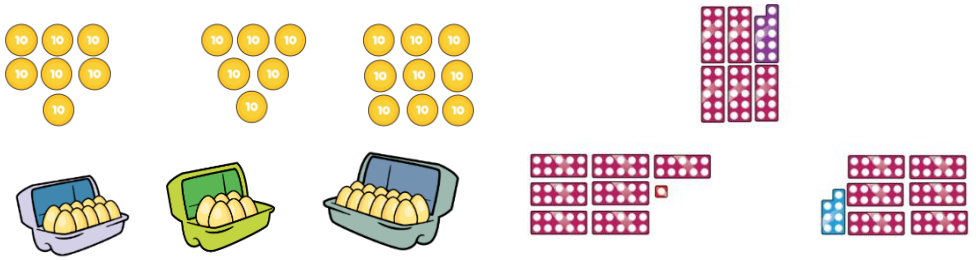
Which is the biggest/has the most?
Which is the smallest/has the least?
Which number/group comes next? How do you know?

How many more/less objects are in group A than group B?

Varied Fluency

- Put these objects in the correct place in the table.

	Most		Least
Counters			
Number Pieces			
Eggs			



- In groups of 4 roll some PE equipment. The furthest roll wins. Give a sticker and a high-five to the person who came first, second, third and fourth.

- Order the numbers from smallest to largest.

57 8 21

100 93 72

Ordering Numbers

Reasoning and Problem Solving

Mo creates a traffic jam using some toy cars on the carpet.
The red car is 3rd from the front.
It is also the 2nd from the back.

Use some cars or manipulatives to find out how many cars are in the traffic jam.

There are four cars in the traffic jam.

The numbers in each list are in size order.
Complete the missing numbers.

65	78		91	99

89	80	72		

		57		

Why did you choose the numbers you did?
Are they the only numbers that could have completed the number tracks?

Children could choose any number > 78 but < 91

Children could choose any numbers < 72

Children can choose any numbers to make the track go from largest to smallest or smallest to largest.

One More, One Less

Notes and Guidance

Children find one more and one less than given numbers or amounts to 100

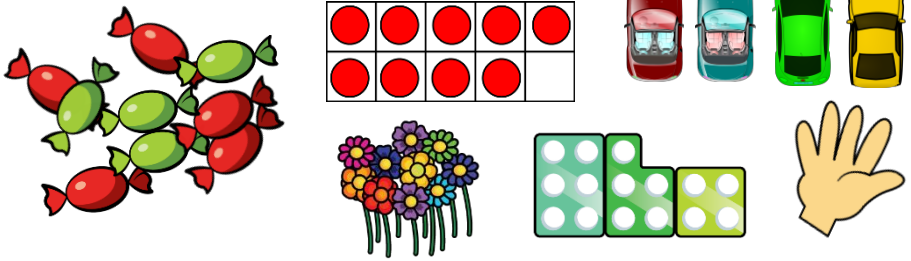
Children use concrete materials and physically add 1 more or take 1 away before moving to more abstract methods such as number tracks or hundred squares.

Mathematical Talk

Do we need to add more or take some away?
How can we represent this?
How many tens were there? How many tens are there now?
How many ones were there? How many ones are there now?
Which place value column changes when finding 1 more and 1 less?
What happens when I find 1 more than a number with 9 ones?
What happens when I find 1 less than a number with 1 one?

Varied Fluency

- Use manipulatives and ask children to show one more and one less than the given amounts.



- Complete the missing numbers.

		37			
	46	47			
55		57			
65					

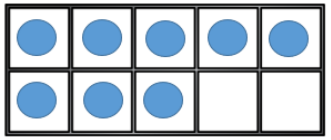
- Use the number cards to make 2 digit numbers.
Now write down one more and one less than the numbers you have made.
Use equipment if needed.

7	5	9	6

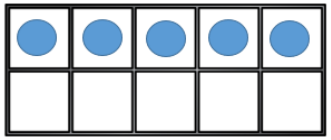
One More, One Less

Reasoning and Problem Solving

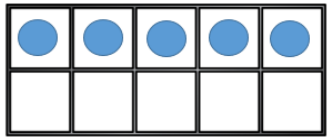
Can you move two of the counters so Rosie has 1 more than Alex and Whitney has 1 less than Alex?



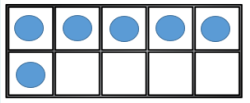
Alex



Rosie



Whitney



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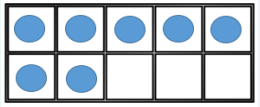

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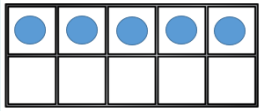


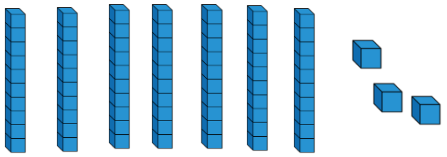
W

Always, Sometimes or Never True?

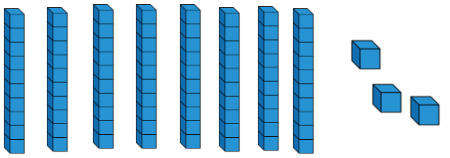
When finding 1 less than a number, the tens digit of the number stays the same.

Sometimes.
If the number has 0 ones, the tens digit will change.

Dora started with this number.



I am going to find one more.



Has Dora shown the correct amount?
Explain how you know.

Dora is not correct.
Dora has shown 10 more by adding another rod instead of 1 more and adding another cube.