

# Year 1

## Small Steps Guidance and Examples

Block 4 – Number: Place Value

**White Rose Maths**

# Overview

## Small Steps

- Count forwards and backwards and write numbers to 20 in numerals and words
- Numbers from 11 to 20
- Tens and ones
- Count one more and one less
- Compare groups of objects
- Compare numbers
- Order groups of objects
- Order numbers

### NC Objectives

Count to **twenty**, forwards and backwards, beginning with 0 or 1, from any given number.

Count, read and write numbers to **20** in numerals and words.

Given a number, identify one more or one less.

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.

## Count & Write Numbers to 20

### Notes and Guidance

Children are building on their existing knowledge of counting forwards and backwards by introducing the numbers 11-20

11, 12, 13 and 15 are usually difficult for children to understand because they cannot hear the single digit in the name like others e.g. sixteen – six ones and a ten.

### Mathematical Talk

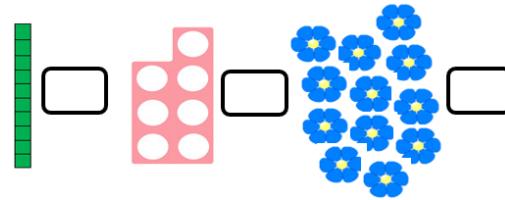
9, 10, 11, 12, 13, 14, 15, 16 what do you notice about the sounds of the numbers?

Do you notice a pattern with the numbers?

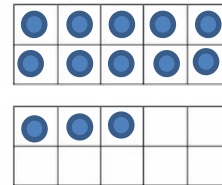
Do the ones always become greater when we count?

### Varied Fluency

1 Write the numeral.



2 Write the numbers shown on the ten frame in numerals and words.



Using your own ten frame, show me:  
Fourteen, 18, nine, 16

3 Fill in the missing numbers.

	15		17	
--	----	--	----	--

16					11
----	--	--	--	--	----

# Count & Write Numbers to 20

## Reasoning and Problem Solving

Circle the odd one out and explain why.

11, 12, 13, 14, 51, 16, 17

51 is incorrect.  
The number  
should be 15

The digits have  
been swapped  
round.

Mr. Monaghan says



I am going to  
count to 20. I start  
at 8. Will I say 11?

Will Mr. Monaghan say 11?

Explain how you know.

Yes, because 11 is  
between 8 and  
20

## Numbers from 11 to 20

### Notes and Guidance

Children are using concrete and pictorial representations to explore the different ways to represent a number.

Base 10 is formally introduced in the next step but if children are familiar with this model then they can include it.

A 4 box diagram can be used to encourage multiple representations.

### Mathematical Talk

Can you show me another way to represent 12? And another?

What's the same and what's different about these representations?

Which representation is the odd one out?

### Varied Fluency

- 1 Draw a picture to show me 13 counters.



- 2 Match the numbers to the words.

seventeen

15

twenty

12

fifteen

17

twelve

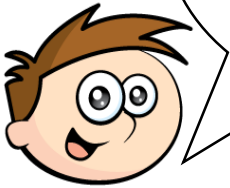
20

- 3 Using two ten frames, show me a number:
  - More than 12
  - Less than 20
  - Equal to  $10 + 10$

# Numbers from 11 to 20

## Reasoning and Problem Solving

Bob says:



I can make all the numbers from eleven to twenty using the digits 1-9

Do you agree?

No, you cannot make 20 because you need a zero.

Which card is the odd one out?

20

fifteen

15

twelve

fourteen

12

twenty

Fourteen as it doesn't have a matching card.

Explain how you know.

Use 2 sets of number cards.

1 set with numerals 1-20

1 set with words 1-20

Play in groups of 3 or 4

Take it in turns to pick a numeral card.

If they match you win the pair, if the cards don't match put them back.

# Tens and Ones

## Notes and Guidance

Children will learn each number from 11 to 19 has ‘1 ten and a bit more’.

They will see 10 and 20 as having just tens and no ones. Children still need to see numbers can be seen in different ways and therefore discuss 1 ten being equal to 10 ones. Base 10 will be introduced in this step. Children can use these concrete but also draw them as ‘sticks and bricks’. A line represents 1 ten and a dot represents 1 one.

## Mathematical Talk

Which is greater 1 ten or 1 one?  
How do you know?

Can you swap tens for ones?  
Will it change the amount?  
Explain.

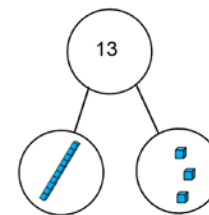
## Varied Fluency

1 Fill in the ten frames with counters to show 14

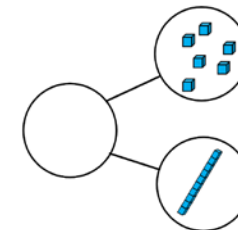


=  ten  ones

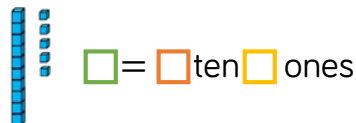
2 My number is \_\_\_\_  
It has \_\_\_\_ tens and \_\_\_\_ ones.



My number is \_\_\_\_  
It has \_\_\_\_ tens and \_\_\_\_ ones.



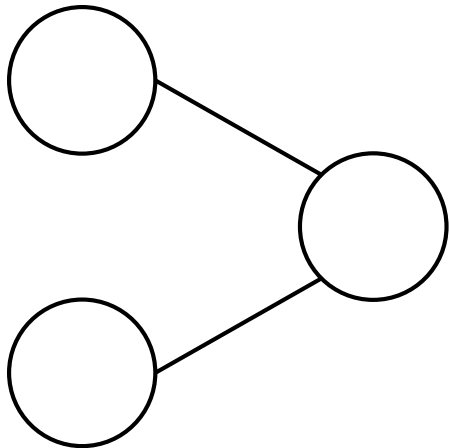
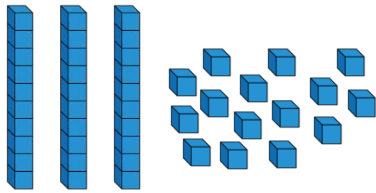
3 Complete:



## Tens and Ones

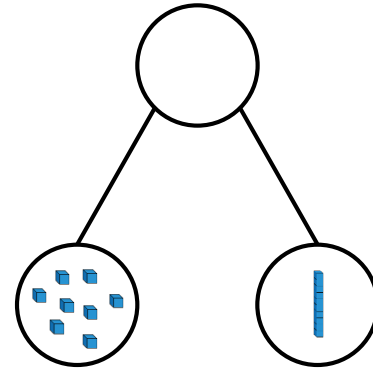
## Reasoning and Problem Solving

How many ways can you complete the part whole model using the Base 10 equipment – you do not have to use it all.

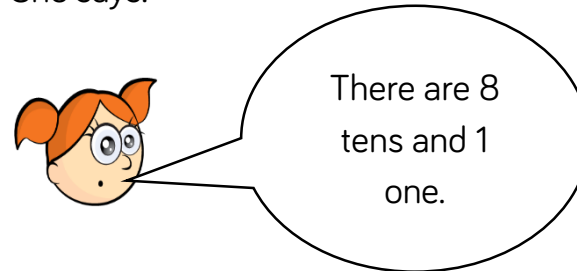


Open ended e.g. 1 ten and 5 ones make 15

Jodie makes a part whole model.



She says:



Explain her mistake.

What is her number?

Jodie has counted the ones as tens and the tens as ones.

She should say there is 1 ten and 8 ones.

Her number is 18



## Count One More & One Less

### Notes and Guidance

Children will apply their skills to find one more and one less. Prior to this small step, children would have been exposed to the language of more and less and used resources such as number lines and number tracks.

A misconception that children might come across, when using the language one more, is whether it is one more 1 or one more 10. Therefore this should be addressed with clear modelling, using practical resources.

### Mathematical Talk

What do you notice about the tens and ones?

Which digit changes?

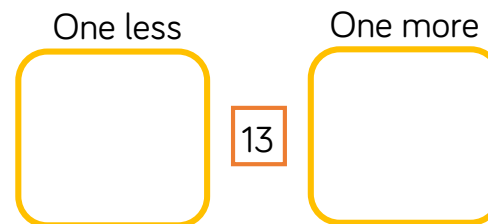
What's the same and what's different between 12 and 13?

### Varied Fluency

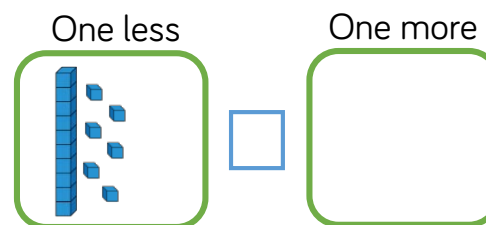
- 1 Make one more and one less than these numbers.



- 2 Draw



- 3 Draw



# Count One More & One Less

## Reasoning and Problem Solving

Dan says,



I am one year older than my sister.  
My sister is one year older than my brother.  
My brother is 13

Dan is 15.  
Dan's brother is 13. So Dan's sister must be 14 – as she is one year older than Dan's brother. Dan must be 15 as he is one year older than his sister.

How old is Dan?  
How old is his sister?

Use number cards 11-20.

How many different ways can you complete the boxes below?

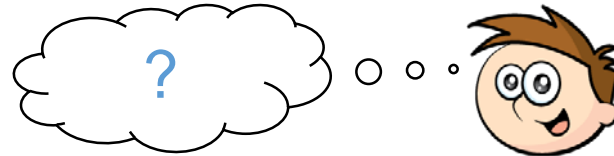


is 1 more than



Example answers:  
18 is 1 more than 17  
12 is 1 more than 11

Adam thinks of a number.

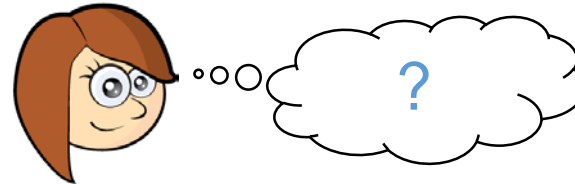


1 more than his number is 11

What is his number?

Adam's number:  
10

Jan thinks of a number.



1 less than her number is 15

What is her number?

Jan's numbers: 16

## Compare Groups of Objects

### Notes and Guidance

Once children have been exposed to making and exploring numbers greater than 10, they can begin to compare groups of numbers. This builds on, and continues to use vocabulary of comparison such as; greater than, less than and equal to. Because children have explored finding the difference, they can use this as a strategy to find out how many more. Thus making it the ideal time to recap finding the difference.

### Mathematical Talk

How many in each group?

Which group has the most?

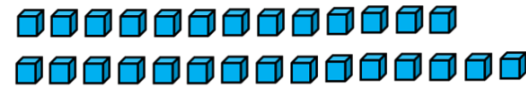
Which group has the least?

How do you know?

What could you call the middle group?

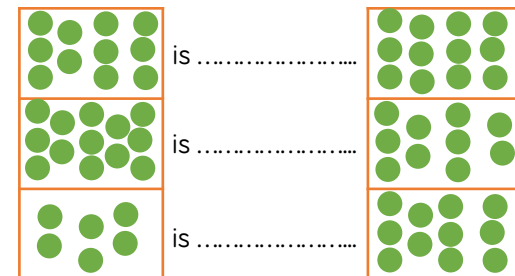
### Varied Fluency

1 Which is greater?



By how many?

2 Use **more than**, **less than** or **equal to** to complete the sentences.



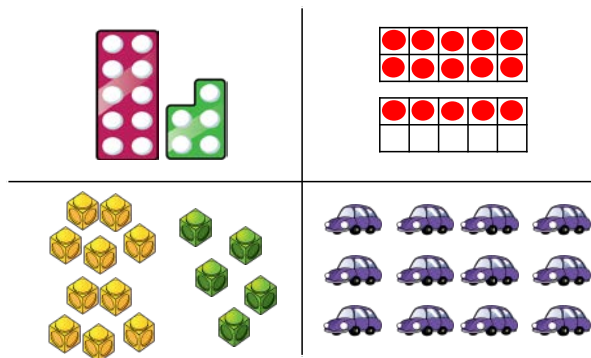
3 In pairs, both make a number on a bead string (only use up to 20 beads). Compare bead strings and use  $<$ ,  $>$  or  $=$  in a sentence.

# Compare Groups of Objects

## Reasoning and Problem Solving

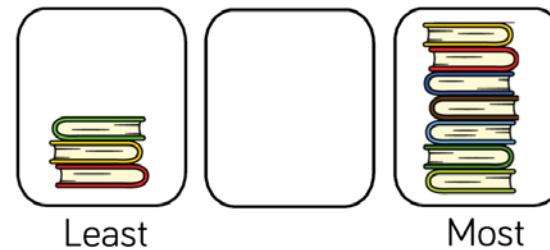
Which image is the odd one out?

Why?



The cars because there are 12 and the rest show 15

How many books can go in the empty box?



The middle box could have 4, 5 or 6

Compare with your partners- have you drawn the same amount of books?

How many possibilities are there?

## Compare Numbers

### Notes and Guidance

Previously, children have compared numbers up to 10. They are now building on this knowledge by comparing numbers up to 20

In this step, children will be given abstract numbers and need to be encouraged to use previous learning to choose an efficient method to compare numbers.

Within examples, make sure children are also continuing to compare numbers below 10 as well as 10 and above.

### Mathematical Talk

What happens to the sign when you swap the numbers around?

Will zero always be the smallest?

### Varied Fluency

1 Circle the greater number.

- Twelve                      Twenty
- 8                                      17

2 Here are two number cards. Use the number track to explain which one is smaller.



3 Complete the statements.

14  9

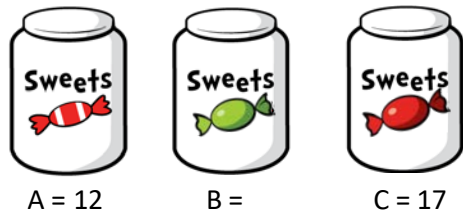
19  20

13   $<$  —

# Compare Numbers

## Reasoning and Problem Solving

Sarah has three jars of sweets.



She says:



How many sweets could be in B?

Possible answers:  
13, 14, 15, 16

Discussion point  
with class:

can it be 12 or 17?

It cannot because  
it would have to  
be phrased 'A and  
B have the  
least/most'.

Fill the gaps:

is more than 15 but less than 20

is less than eighteen but more  
than twelve.

What numbers could go in the boxes?

Explain your answer.

Possible answers:

16, 17, 18, 19

13, 14, 15, 16, 17

## Order Groups of Objects

### Notes and Guidance

Children are building on their knowledge of ordering groups up to 10 by applying the same skills to numbers up to 20. It is important children still order numbers below 10 as well.

Children will be ordering three groups of objects in this step to support them in ordering 3 abstract numbers in the following step.

It is important to share different methods so children are continually exposed to more efficient ways.

### Mathematical Talk

How can you order the groups?

Can you just look at two groups first? Why?

Can you think of an amount less than the smallest group?

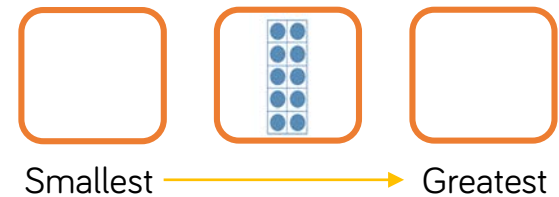
How is your drawing different to your partners?

### Varied Fluency

- 1 Order the crayons from smallest to greatest.



- 2 Draw counters in each box to make it correct.



- 3 Complete.



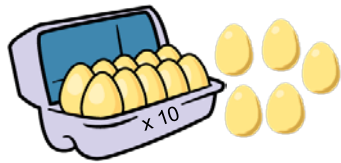
# Order Groups of Objects

## Reasoning and Problem Solving

The eggs are put into the baskets.

All the eggs are used.

How many solutions can you find?



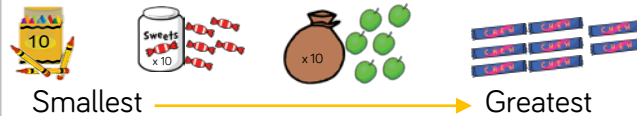
Greatest



Least

Example: 8, 5, 2  
or 9, 4, 1 etc.

Annie orders the following from  
smallest to greatest:



Chris says:



This is the incorrect order  
because there are more  
apples than chew bars.

Do you agree with Chris?

Has Annie done anything else wrong?

I agree with Chris,  
there are more  
apples than chew  
bars. There are  
also more sweets  
and crayons than  
chew bars.

The order should  
be:

chew bars,  
crayons, sweets,  
apples.



## Order Numbers

### Notes and Guidance

Children are now ordering abstract digits from 0-20. They can choose to represent these with concrete materials or draw them pictorially.

Children need to apply their knowledge of tens and ones to help them work within the abstract. For example, when comparing 8 and 15 only one number has a ten therefore 15 must be greater.

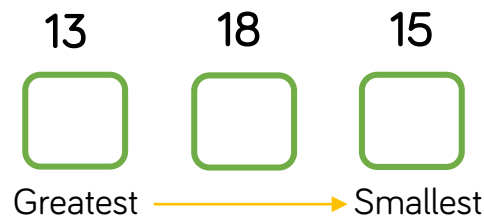
### Mathematical Talk

Is it easier with objects or numbers?  
Why?

If you have numbers, can you still use objects?  
Does this help?  
Why?

### Varied Fluency

- 1 Order the numbers correctly.



- 2 Three children were playing basketball.  
The scoreboard shows how many hoops they scored each.

Kay: 9
Ben: 16
Tim: 13

The winner is the child who scores the most.

1<sup>st</sup> :  
2<sup>nd</sup> :  
3<sup>rd</sup> :

- 3 Order the numbers from greatest to smallest.
  - 12, 5, 7
  - 20, 17, 11

Now order them from smallest to greatest. What do you notice?

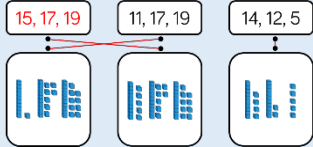
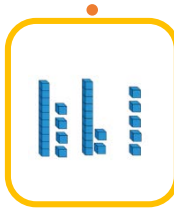
# Order Numbers

## Reasoning and Problem Solving

Complete the image and match the numerals to the correct picture.

11, 17, 19

14, 12, 5



Mr. Woolley says:



My number is greater than 8 but less than 15

What could his number be?

Possible answers:

9, 10, 11, 12, 13 or 14