Autumn Scheme of Learning

Year 1/2

#MathsEveryoneCan

2019-20

White Rose Maths

How to use the mixed-age SOL

In this document, you will find suggestions of how you may structure a progression in learning for a mixed-age class.

Firstly, we have created a yearly overview.

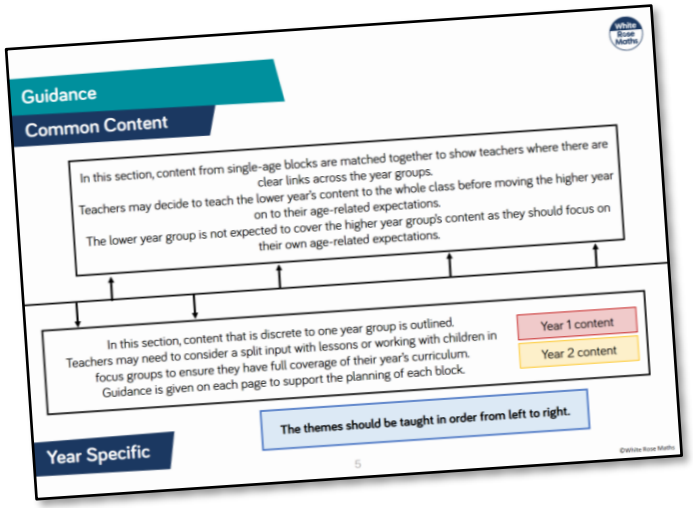
<table>
<tr><th></th><th>Week 1</th><th>Week 2</th><th>Week 3</th><th>Week 4</th><th>Week 5</th><th>Week 6</th><th>Week 7</th><th>Week 8</th><th>Week 9</th><th>Week 10</th><th>Week 11</th><th>Week 12</th></tr>
<tr><td>Autumn</td><td colspan="4">Number: Place Value
Y1 – Numbers to 20
Y2 – Numbers to 100</td><td colspan="5">Number: Addition and Subtraction
Year 1- Numbers within 20 (including recognising money)
Year 2- Numbers within 100 (including money)</td><td colspan="3">Number:
Year 1: Place Value to 50 and Multiplication
Year 2: Multiplication</td></tr>
<tr><td>Spring</td><td colspan="2">Number:
Year 1: Division & consolidation
Year 2: Division</td><td colspan="2">Year 1: Place Value to 100
Year 2: Statistics</td><td>Measurement: Length and Height</td><td colspan="3">Geometry:
Year 1: Shape and Consolidation
Year 2: Properties of Shape</td><td colspan="2">Number:
Year 1: Fractions and Consolidation
Year 2: Fractions</td><td>Consolidation</td></tr>
<tr><td>Summer</td><td>Geometry: Position and Direction</td><td colspan="2">Measurement: Time</td><td colspan="2">Problem solving and efficient methods</td><td colspan="3">Measurement:
Year 1: Weight and Volume
Year 2: Mass, Capacity and Temperature</td><td colspan="3">Consolidation and Investigations</td></tr>
</table>

Each term has 12 weeks of learning. We are aware that some terms are longer and shorter than others, so teachers may adapt the overview to fit their term dates.

The overview shows how the content has been matched up over the year to support teachers in teaching similar concepts to both year groups. Where this is not possible, it is clearly indicated on the overview with 2 separate blocks.

For each block of learning, we have grouped the small steps into themes that have similar content. Within these themes, we list the corresponding small steps from one or both year groups. Teachers can then use the single-age schemes to access the guidance on each small step listed within each theme.

The themes are organised into common content (above the line) and year specific content (below the line). Moving from left to right, the arrows on the line suggest the order to teach the themes.



How to use the mixed-age SOL

Here is an example of one of the themes from the Year 1/2 mixed-age guidance.

Subtraction

Year 1 (Aut B2, Spr B1)
- How many left? (1)
- How many left? (2)
- Counting back
- Subtraction - not crossing 10
- Subtraction - crossing 10 (1)
- Subtraction - crossing 10 (2)

Year 2 (Aut B2, B3)
- Subtract 1-digit from 2-digits
- Subtract with 2-digits (1)
- Subtract with 2-digits (2)
- Find change - money

In order to create a more coherent journey for mixed-age classes, we have re-ordered some of the single-age steps and combined some blocks of learning e.g. Money is covered within Addition and Subtraction.

The bullet points are the names of the small steps from the single-age SOL. We have referenced where the steps are from at the top of each theme e.g. Aut B2 means Autumn term, Block 2. Teachers will need to access both of the single-age SOLs from our website together with this mixed-age guidance in order to plan their learning.

Points to consider

- Use the mixed-age schemes to see where similar skills from both year groups can be taught together. Learning can then be differentiated through the questions on the single-age small steps so both year groups are focusing on their year group content.
- When there is year group specific content, consider teaching in split inputs to classes. This will depend on support in class and may need to be done through focus groups .
- On each of the block overview pages, we have described the key learning in each block and have given suggestions as to how the themes could be approached for each year group.
- We are fully aware that every class is different and the logistics of mixed-age classes can be tricky. We hope that our mixed-age SOL can help teachers to start to draw learning together.

Guidance

Common Content

In this section, content from single-age blocks are matched together to show teachers where there are clear links across the year groups.
Teachers may decide to teach the lower year's content to the whole class before moving the higher year on to their age-related expectations.
The lower year group is not expected to cover the higher year group's content as they should focus on their own age-related expectations.

In this section, content that is discrete to one year group is outlined.
Teachers may need to consider a split input with lessons or working with children in focus groups to ensure they have full coverage of their year's curriculum.
Guidance is given on each page to support the planning of each block.

Year 1 content

Year 2 content

Year Specific

The themes should be taught in order from left to right.

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Year 2: Mass, Capacity and Temperature</td><td colspan="2">Year 1: Four Operations recap
Year 2: Consolidation and Investigations</td><td>Consolidation</td></tr>
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Place Value and Multiplication

Common Content

Counting in multiples

Year 1 (Sum B1, B5)
- Count in 2s
- Count in 5s
- Count in 10s
- Counting in coins

Year 2 (Aut B1, B3)
- Count in 2s, 5s and 10s
- Count in 3s
- Count money - pence
- Count money - pounds

Equal groups

Year 1 (Sum B1)
- Make equal groups
- Add equal groups

Year 2 (Aut B4)
- Recognise equal groups
- Make equal groups
- Add equal groups
- The Multiplication symbol
- Multiplication from pictures

Arrays

Year 1 (Sum B1)
- Make arrays
- Make doubles

Year 2 (Aut B4)
- Use arrays

Year Specific

Numbers to 50

Year 1 (Spr B2)
- Numbers to 50
- Tens and Ones
- Represent numbers to 50
- One more one less
- Compare objects within 50
- Compare numbers within 50
- Order numbers within 50

In this block, there is a clear split in content with Year 1 looking at numbers to 50 discretely. Teachers may decide to recap numbers to 100 with Year 2 before moving on to multiplication as a group.

Counting in multiples could be used as starters in lessons as both year groups have very similar content. Having looked at the structure of multiplication, Year 2 can then practise times tables on a daily basis.

Both year groups look at equal groups and arrays and describe them using repeated addition. Year 2 are then introduced to the multiplication symbol.

Times-tables

Year 2 (Aut B4)
- 2 times-table
- 5 times-table
- 10 times-table

White Rose Maths

Block 3 - Number

Theme 1 – Numbers to 50

Numbers to 50

Notes and Guidance

Children count forwards and backwards within 50. They use a number track to support where needed, in particular crossing the tens boundaries and with teen numbers.
Children build on previous learning of numbers to 20
They learn about grouping in 10s and their understanding of 1 ten being equal to 10 ones is reinforced.

Mathematical Talk

How can we count a larger number of objects more easily.

What happens when we get to 10? 20? 30?

___ ones make ___ ten.

How many groups of 10 can we see in the number ___ ?

Which practical equipment is best for showing groups of 10?

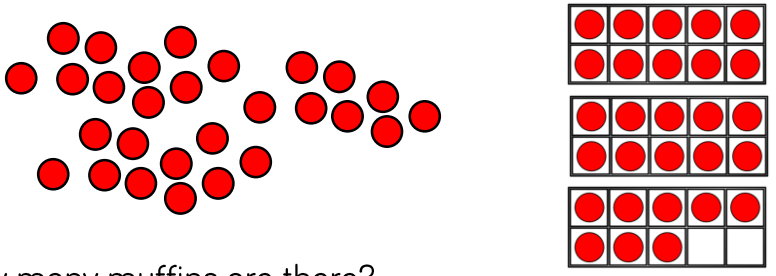
Varied Fluency

Use the number track to
- count forwards from 35 to 49
- count back from 46 to 38

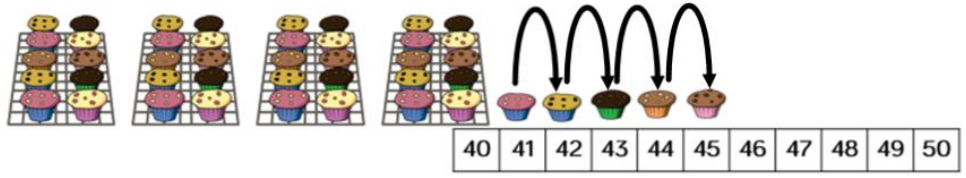
35	36	37	38	39	40	41	42	43	44	45	46	47	48	49

Can you count from ___ to ___ without a number track?

These images both show the same number of counters.
Which counters are easier to count? Why?



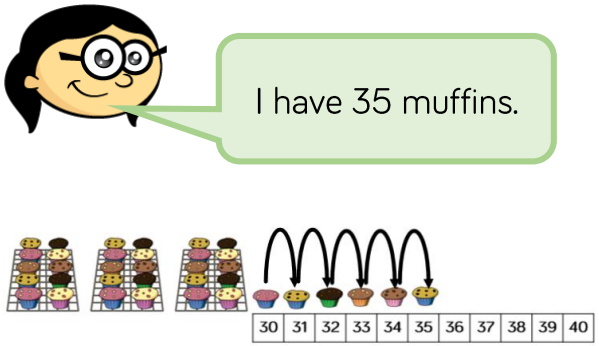
How many muffins are there?



Numbers to 50

Reasoning and Problem Solving

Annie counts how many muffins she has.

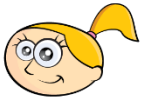


Do you agree with Annie?

Explain your answer.

Possible answer:
I do not agree with Annie because she has counted 30 twice. There should be 36 muffins.

Eva is counting from 38 to 24



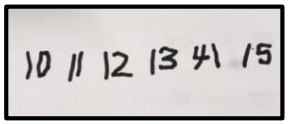
Will she say the number 39?
Will she say the number 29?
Will she say the number 19?

Explain how you know.

Eva will not say 39 or 19 because they are not between 38 and 24
She will say 29
Children could show this on a number track.

Ron and Whitney are counting.
Ron says:

Whitney writes:



Can you spot their mistakes?

Ron has started counting up after 40 when he should have continued counting back.
Whitney has also written 41 instead of 14. She has reversed her digits.

Tens and Ones

Notes and Guidance

Children use practical equipment to represent numbers to 50 They continue to build their understanding that ten ones can be grouped into one ten. They need to practice grouping equipment into tens themselves (straws, cubes, lolly sticks, 10 frames) before introducing ready made tens or place value counters.

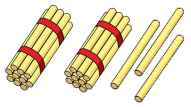
It is important that children understand how a number is made up of tens and ones, e.g. 34 = 3 tens and 4 ones.

Mathematical Talk

How many have we got? How can we make them easier to count?
How many tens are there?
How many ones are there?
I have ___ tens and ___ ones. What number does that make?
How do we record this number in words?

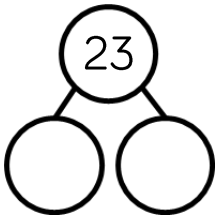
Varied Fluency

Count out 23 straws. How many bundles of 10 can you make?

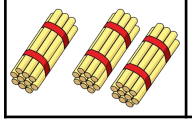
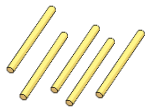


There are ___ tens and ___ ones.

___ tens + ___ ones = 23

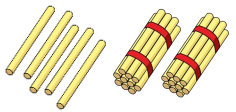


What number is represented in the grid?

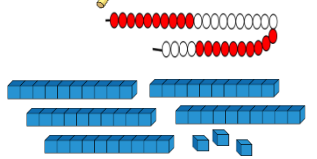
Tens	Ones
	

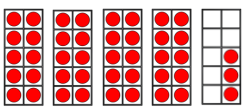
There are ___ tens and ___ ones.
___ tens + ___ ones = ___

Match the pictures and words.



How many?



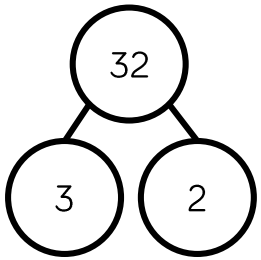


- Four tens and three ones
- Two tens and five ones
- Three tens and four ones
- Three ones and five tens

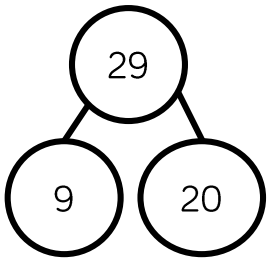
Tens and Ones

Reasoning and Problem Solving

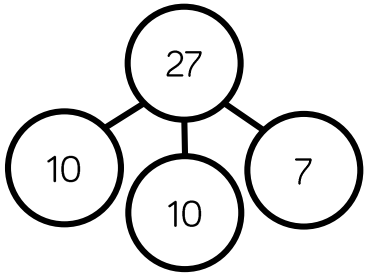
The children are completing the part whole models.



Tommy



Rosie



Jack

Are they correct?
Explain why.

Tommy is wrong. He has wrote 3 which should be 30 or 3 tens.

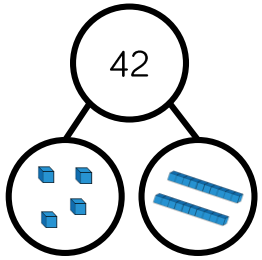
Rosie is correct – she has just recorded the ones first.

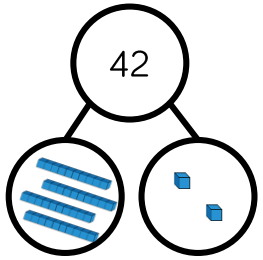
Jack is correct.
10 + 10 = 20
Two tens is the same as twenty.

Dora and Amir both try to build the same number.

Dora

Amir





Who is correct?

Can you explain the mistake that has been made?

Amir is correct.

Dora has got mixed up with tens and ones and shown 4 ones and 2 tens (24).

Represent Numbers to 50

Notes and Guidance

Children continue to represent numbers to 50 using a variety of concrete materials.

Children should continue to see the groups of tens and ones in each number to support their understanding of place value.

Mathematical Talk

Which digit represents the tens?

Which digit represents the ones?

What do you notice about the numbers 30, 40, 50?

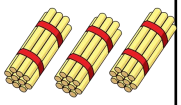
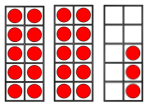
How many tens are there? How many ones?

How do we say/write/represent/partition this number?

What's the same about your representations? What's different?

Varied Fluency

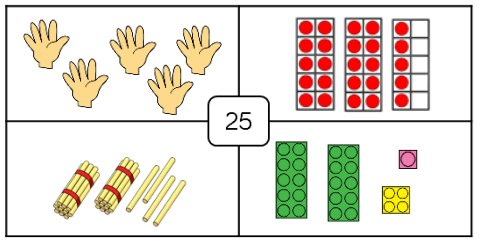
Complete the table.

Number	Tens and Ones	Ten Frame	Straws	Words
26	2 tens 6 ones			Twenty-six
	___ tens ___ ones			Thirty
	___ tens ___ ones			
	___ tens ___ ones			Seventeen

How many different ways can you represent the following numbers?

- 34
- 28
- 40
- 16

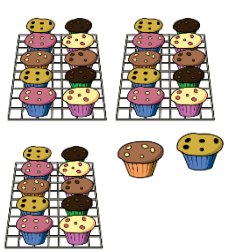
Here is an example for 25

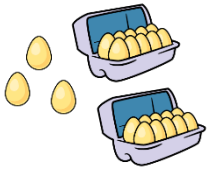


Represent Numbers to 50

Reasoning and Problem Solving

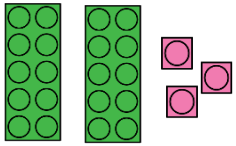
Sort the representations in to two groups.

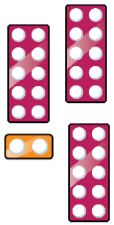




23

Three tens and 2 ones





Twenty and three

Explain how you have sorted them.

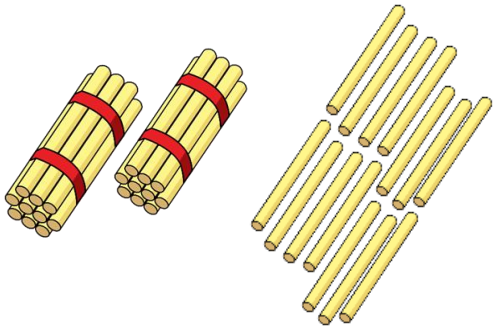
Can you add your own representations?

Children sort the representations in to those which show 23 and those which show 32

Whitney says,

I have 2 tens and 14 ones.

How many straws does Whitney have?



Whitney has 34 She could also make 3 groups of ten and four ones.

One More One Less

Notes and Guidance

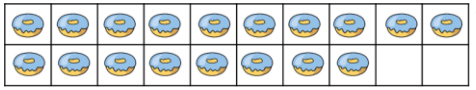
Children find one more and one less than given numbers up to 50. Children build numbers concretely before using number tracks and 1–50 grids. As they have already found one more and one less within 10 and 20, they should be able to use this knowledge with larger numbers. Encourage them to notice that it is the ones column that changes most of the time apart from when the ones number is a nine. If they know that 8 is one more than 7 then they also know that 48 is one more than 47

Mathematical Talk

How many do we have? What number does this represent?
What would be the number after/before...?
What is one more/one less than...?
When finding one more and one less, which digit changes?
Why? Does this always happen?

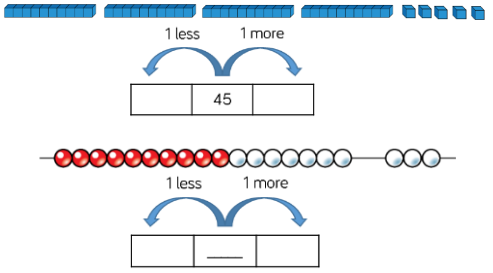
Varied Fluency

Fill in the blanks:



There are ___ donuts.
One more than ___ is ___
There are ___ donuts. One less than ___ is ___

Build and find one more and one less.



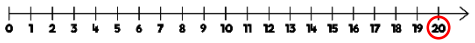
One more than ___ is ___
One less than ___ is ___

One more than ___ is ___
One less than ___ is ___

Find one more and one less:

36	37	38	39	40	41	42	43	44	45

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



One more than ___ is ___
One less than ___ is ___

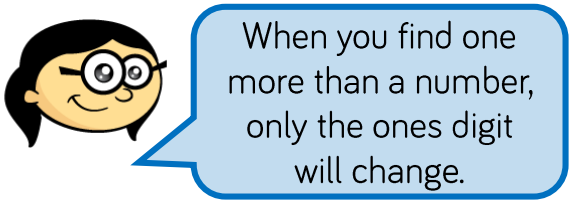
One more than ___ is ___
One less than ___ is ___

One more than ___ is ___
One less than ___ is ___

One More One Less

Reasoning and Problem Solving

Always, sometimes, never...



Convince me using some examples.

Sometimes.
One more than 19 is 20
The tens and ones digit has changed..
One more than 24 is 25
Only the ones has changed.

Use the clues to work out the number.

- I have a number with 3 tens.
- One less than my number makes the tens digit change.
- One more than my number has 1 one.

What is my number?
Can you make some clues to describe your secret number?

30

Choose the correct numbers to make the sentences correct.

28	26	33	45
36	43	35	49

☐ is one less than 27

34 is one less than ☐

☐ is one more than 44

50 is one more than ☐

26
35
45
49

Compare Objects within 50

Notes and Guidance

Children compare two sets of objects using the language 'more than', 'less than' and 'equal to'. Children also use the inequality symbols to compare the sets of objects.

If children are struggling to understand how to use the inequality symbols a visual may help them, for example,

Mathematical Talk

How could we arrange the objects to help us compare them?

What do <, > and = mean?

How do you know you have more or less?

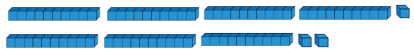
Can you record your ideas in a different way?

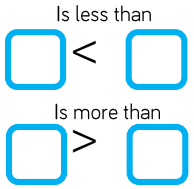
Varied Fluency

- Teddy and Eva each have some muffins.
  Who has more muffins?
  Which picture helps you to compare?

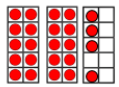
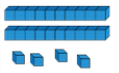
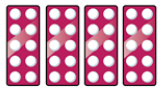
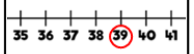
___ is more than ___
___ > ___
_____ has more muffins.

- Fill in the blanks:





- Complete each box using <, > or =
  Say and write the number sentences for each one.

		
		
2 tens and 8 ones		3 tens and 6 ones

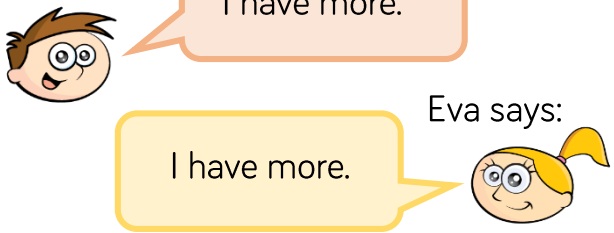
Compare Objects within 50

Reasoning and Problem Solving

Jack and Eva are playing a game.
They each collect a handful of cubes.
They arrange their cubes to see who has more.

Jack

Eva

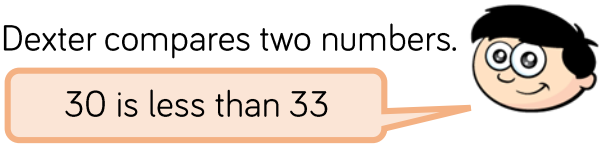


Who is right?
Practise comparing objects with your friend.

Jack looks like he has more but his cubes are spread out.
Eva has more.

This illustrates the importance of lining up the objects carefully when comparing.

Dexter compares two numbers.



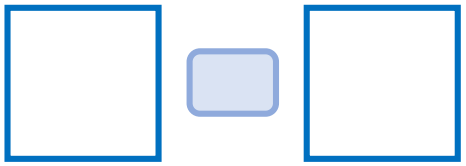
Do you agree with Dexter?

Explain your answer.

Dexter is correct but he has used the wrong symbol.

Pick a card.

Draw pictures in the boxes to make the comparison true.



Encourage children to use the correct language of 'more than', 'less than' or 'equal to'

Compare Numbers within 50

Notes and Guidance

Building on previous learning of comparing practical objects within 50, children now compare two numbers within 50 using the inequality symbols.

Children continue to use the language 'more than', 'less than' and 'equal to' alongside the correct symbols to compare numbers.

Mathematical Talk

Which number is more? Which is less?

What could we use to represent the numbers?

What do <, > and = mean?

How do you know you have more or less?

What could you use to help you compare?

Varied Fluency

Use the number track to compare the two numbers using words and inequality symbols.

19	20	21	23	24	25	26	27	28	29

21 is _____ than 26

26 is _____ than 21

21 ○ 26 26 ○ 21

29	30	31	32	33	34	35	36	37	38

□ is more than □

□ is less than □

□ > □ □ < □

Use the 1-50 grid to compare the numbers.

12 ○ 21

38 ○ nineteen

40 ○ 39 + 1

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

Use a number line or 1-50 grid to compare:

fifteen ○ 50

28 ○ 29

48 ○ 39

2 tens < □

Compare Numbers within 50

Reasoning and Problem Solving

Teddy is comparing two numbers.

My number is larger than 19 but not one more than 19

23 > ☐

What could Teddy's number be?

What can't it be?

Teddy's number could be 21 or 22
It can't be 20 as this is one more than 19

Dora compares the two values.

23 < 3 tens and 3 ones

Change one thing in the values so they are equal.

Dora could change 23 = 2 tens and 3 ones or 33 = 3 tens and 3 ones.

Pick two dominoes to represent two two-digit numbers.
For example,

43 21

Then compare them using <, > or =
43 > 21 21 < 43
Explain how you know.

Children could do this with a partner.

Possible response:
43 is larger than 21 as it has more tens.

Order Numbers within 50

Notes and Guidance

Children order numbers using the language, 'largest', 'smallest', 'more than', 'less than', 'least', 'most' and 'equal to'. They continue to use inequality symbols to order numbers in ascending and descending order.
Children should be able to justify the order of numbers using their place value knowledge. They need to know that they should compare the highest place value column first (tens), then move onto the ones if the tens are equal.

Mathematical Talk

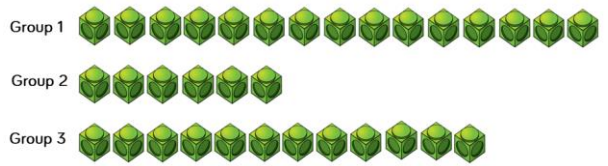
Which group has the most? Which group has the least?
How does knowing this help us order the groups from largest to smallest?

Can you build the groups using equipment and compare?

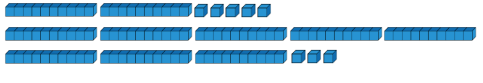
What is the smallest/largest number that could complete the empty box?

Varied Fluency

Order the groups of cubes from smallest to largest.



Order the base 10 from smallest to largest:



□ < □ < □

Using base 10, build and order from largest to smallest:

- 23, 49, 19
- 11, 33, 22
- 41, 14, 42, 24

Use the four numbers to complete the statement.

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

□ > □ > □ > □

Order Numbers within 50

Reasoning and Problem Solving

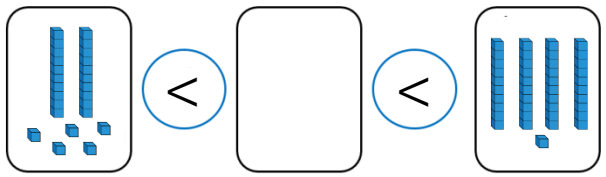
Spot the Mistake

$12 > 21 > 33 > 35$

Can you correct it?

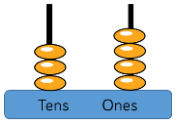
The wrong inequality symbol has been used.
It should be
$12 < 21 < 33 < 35$
or
$35 > 33 > 21 > 12$

Find at least 5 different numbers that could complete the statement.

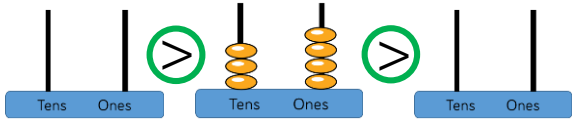


Any number from 27 to 40

Alex has this abacus.



She uses 6 discs on each empty abacus.
Her numbers must have some tens and some ones.
Draw on the abacus what her numbers could be.



Can you find more than one answer?

$51 > 34 > 33$
$51 > 34 > 24$
$51 > 34 > 15$
$42 > 34 > 33$
$42 > 34 > 24$
$42 > 34 > 15$

White Rose Maths

Block 3 - Number

Theme 2 – Counting in multiples

Count in 2s

Notes and Guidance

Children build on their previous knowledge of counting in multiples of 2 and go beyond 20 up to 50

They will apply previous learning of one more and one less to counting forwards and backwards in twos. For example, two more than and two less than. The 1-50 grid can be used to spot and discuss patterns that emerge when counting in 2s.

Mathematical Talk

How can we count the pairs?
What does it mean to count in pairs?

Can we use tens frames to help us count in 2s?
Can you see any patterns when you count in 2s?

Varied Fluency

How many socks are there?

There are ___ socks in total.

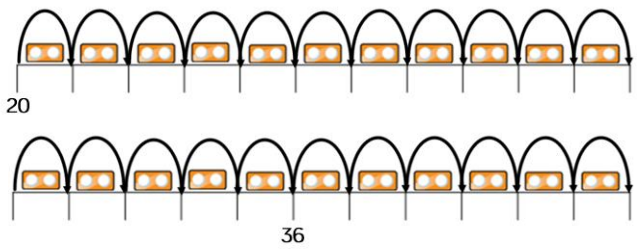
How many gloves are there?

There are ___ gloves in total.
Represent the gloves using ten frames.

Continue colouring in 2s on the grid. What do you notice?

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

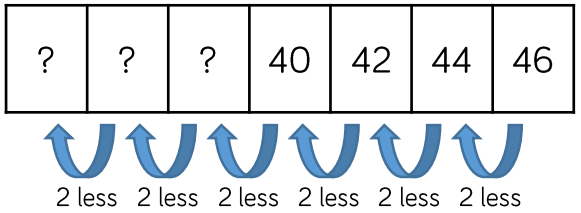
Complete the number lines by counting in 2s.



Count in 2s

Reasoning and Problem Solving

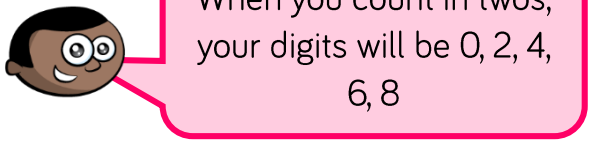
Count in 2s backwards to complete the number track.



If you continue counting, will you say the number 25?

38, 36, 34
Possible answer: Children will not say 25 because it is not a multiple of 2, they will say 28, 26, 24 and 22

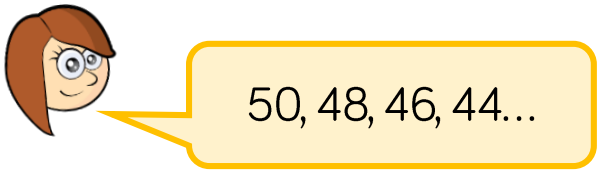
Always, sometimes, never...

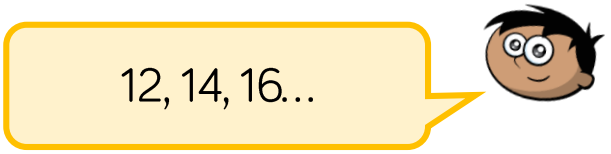


Prove it!

Sometimes. It depends on your starting number. For example 1, 3, 5...
Also for 12, 14, 16, the tens digit is 1

Rosie counts back from 50 in 2s.
Amir counts up from 12 in 2s.





They say their numbers together.
Who will say 30 first.

Rosie says 11 numbers to reach 30
Amir says 10 numbers to reach 30
So Amir will get there first.

Count in 5s

Notes and Guidance

Children build on previous learning of counting in fives to go beyond 20 and up to 50

The 1-50 grid can be used to spot and discuss patterns that emerge when counting in 5s.

Mathematical Talk

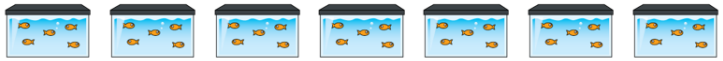
How can we count the groups of 5?

Can you describe the pattern when you count in 5s?

Will _____ appear on our number line? Why/why not?

Varied Fluency

How many fish are there?



There are ___ fish in each tank.
There are ___ tanks.
There are ___ fish altogether.

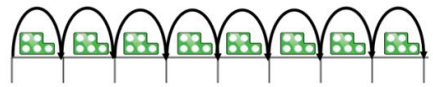
How many grapes are there?

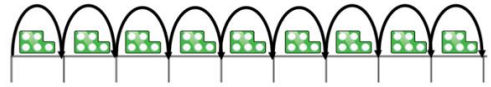
There are ___ grapes in each bunch.
There are ___ bunches.
There are ___ grapes altogether.

Continue counting in 5s on the grid.

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

Complete the number lines by counting in 5s.

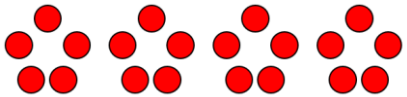




Count in 5s

Reasoning and Problem Solving

Amir is making this flower pattern with counters.



Annie says,

If you make 9 flowers, you will use 43 counters.

Do you agree with Annie?
Explain your answer.

Annie is wrong because 43 does not end in a 5 or a 0

If she makes 9 flowers she will use 45 counters.

Odd One Out

25

30

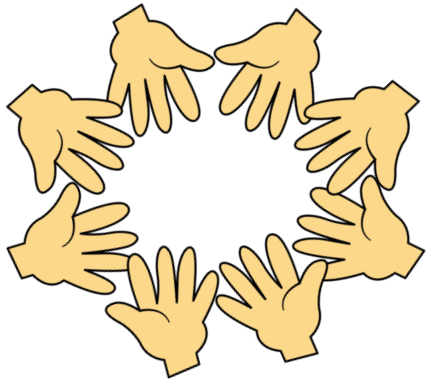
27

45

Which is the odd one out? Explain your answer.

27 because you would not count it if you were counting in 5s. Children also may give other responses.

Work in groups.
Create a circle with your hands. You can choose to put in one hand or both hands.



Count how many fingers and thumbs you can see altogether.

Can you predict how many? Count to check.

Children can practise counting in 5s and recognise one hand is worth 5 They may start to spot patterns and reason about how many there will be.

Count in 10s

Notes and Guidance

Children count in groups of tens for the first time. Previously they have counted in 2s and 5s.
They use pictures, bead strings and number lines to support their counting.

Counting in 10s on a hundred square will also support children to see the similarities between the numbers when we count in tens.

Mathematical Talk

How many birds/flowers are there in total?

How can we use our number lines to help us count them?

Will _____ appear on our number line? Why?

What is the same about all the numbers we say when we are counting in tens?

Varied Fluency

How many birds are there altogether?

There are _____ birds in each tree.
There are _____ trees.
There are _____ birds altogether.

How many flowers are there altogether?

There are _____ flowers in each bunch.
There are _____ bunches.
There are _____ flowers altogether.

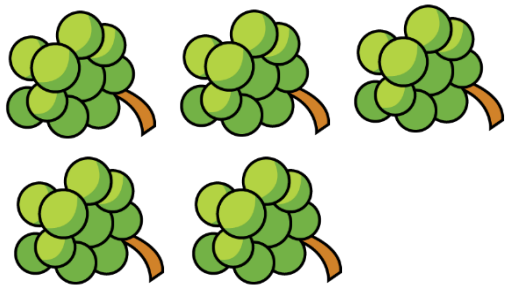
Use a 0-100 bead string to count in tens.
Can we count forwards and backwards in tens?

Can we count in tens on a number track as well?
How does this match counting on a bead string?

Count in 10s

Reasoning and Problem Solving

In a shop, grapes come in bunches of 10



Max wants to buy forty grapes.

Are there enough grapes?

Yes there are enough grapes. There are fifty grapes and Max only needs forty.

Jemima is counting in 10s on part of a hundred square.

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

She starts at 10

Shade in all the numbers Jemima will say.

What is the same about the numbers she says?

What is different about the numbers?

Jemima will say 10, 20, 30, 40 and 50
All the numbers have the same ones digit (0)
They all have different tens digit.
The tens digit goes up by 1 for each new number she says.

Counting in Coins

Notes and Guidance

Children combine their knowledge of money with counting in 2s, 5s and 10s to count money efficiently.

They may draw coins or representations to match a given amount and use previous understanding to compare amounts of money.

Mathematical Talk

Can two people have the same amount of money, with a different number of coins?

Is the largest amount of coins always the largest amount of money? Can you prove it?

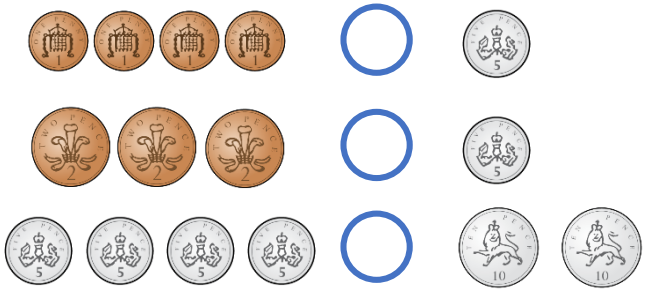
Is there one way, or more than one way?

Varied Fluency

- Using coins children make links to times tables. What do they notice?

- Use or draw coins to show the given amounts.
  - 10p in 5p coins.
  - 50p in 5p coins.
  - 50p in 10p coins.
  - 40p in 5p coins.

- Use <, > or = to compare the amounts.



Counting in Coins

Reasoning and Problem Solving

Tommy's piggy bank is full of 2 pence pieces, 5 pence pieces and 10 pence pieces.

Using one type of coin at a time, how can he make 30 p?

Fifteen 2 pence pieces equal 30 p.

Six 5 pence pieces equal 30 p.

Three 10 pence pieces equals 30 p.

Alex has 2 silver coins.

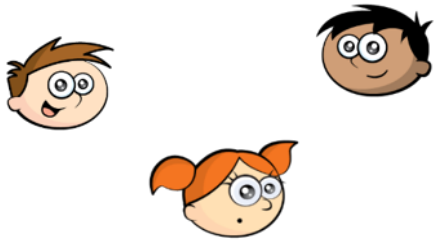
Teddy has 5 bronze coins.

Amir has 1 silver coin.

They all have the same amount of money.

Which coins do they each have?

Collect or draw the coins to prove it.



Are there any other amounts that this works for?

Alex has two 5 pence coins.

Teddy has five 2 pence coins.

Amir has one 10 pence coin.

They all have 10 p.

You could have two 10 pence coins making 20 pence and one 20 pence coin but there are not 5 bronze coins which make 20 pence.

Count in 2s, 5s and 10s

Notes and Guidance

Children count forwards and backwards in 2s, 5s and 10s.
It is important that children do not always start from zero, however they should start on a multiple of 2 or 5 when counting in 2s and 5s but can start from any number when counting in 10s. For example when counting in 2s they should not start at 3.
Encourage children to look for patterns as they count.

Mathematical Talk

What do you notice? Are the numbers getting larger or smaller?

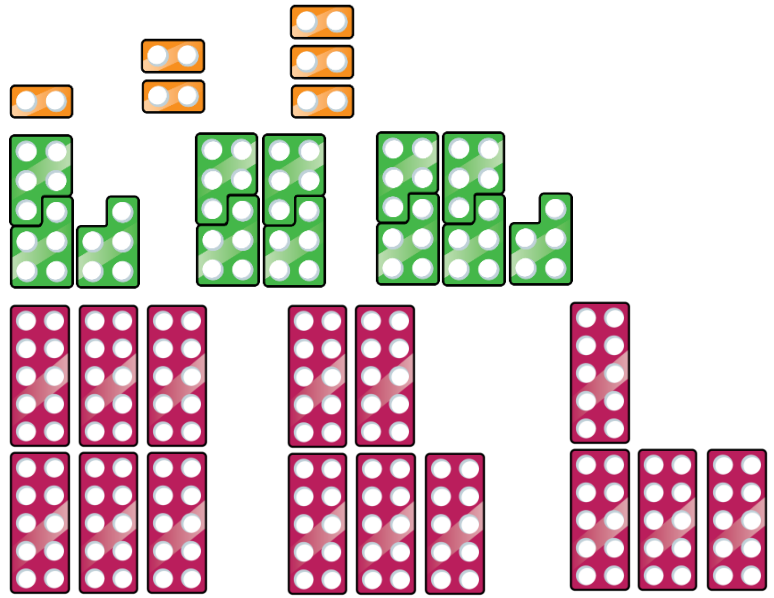
Are the numbers getting bigger or smaller each time? By how many?

Can you spot a pattern?

Why is it the odd one out? Can you correct the mistake?

Varied Fluency

Continue each number sequence.



Circle the odd one out in each number sequence.

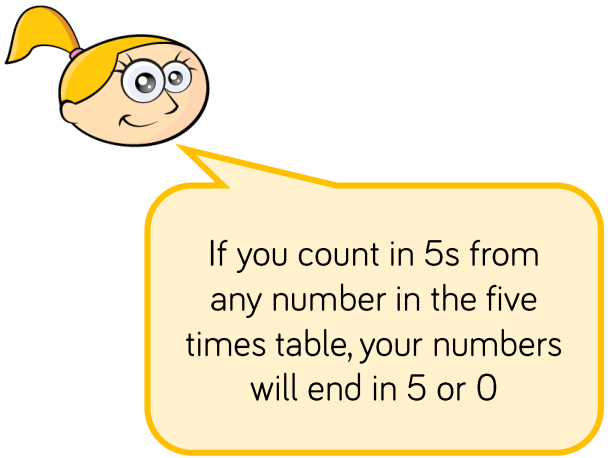
- 2, 4, 6, 8, 9, 10, 12……
- 0, 5, 10, 20, 30, 40……
- 35, 30, 25, 20, 12, 10……

Count forwards and backwards in jumps of 10 from fifty-seven.

Count in 2s, 5s and 10s

Reasoning and Problem Solving

Eva says,



Do you agree with Eva?

Prove it.

Agree.
Each number in the 5 times table does end in a 5 or 0
5, 10, 15, 20, 25, 30, 35, 40, 45, 50 etc.

Always, Sometimes, Never

- When counting in 2s from zero the numbers are even.
- When counting in 5s from zero the numbers are even.
- When counting in 10s from zero the numbers are even.

- Always
- Sometimes
- Always

Teddy and Whitney are both counting from zero to twenty.

- Teddy is counting in 2s.
- Whitney is counting in 5s.

Will they say any of the same numbers?
What do you notice about your answer?

Yes they will both say 10 and 20

The numbers that are the same are the tens.

Count in 3s

Notes and Guidance

Children count forwards and backwards in 3s from any multiple of 3

Encourage children to look for patterns as they count and use resources such as a number track, a counting stick and concrete representations.

Mathematical Talk

What do you notice about the numbers?

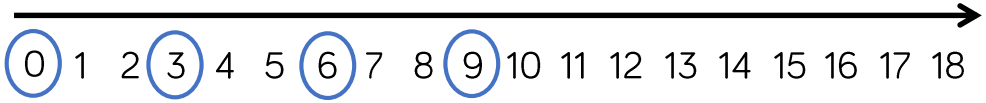
Are the numbers in the sequence getting larger or smaller?

Can you spot a pattern?

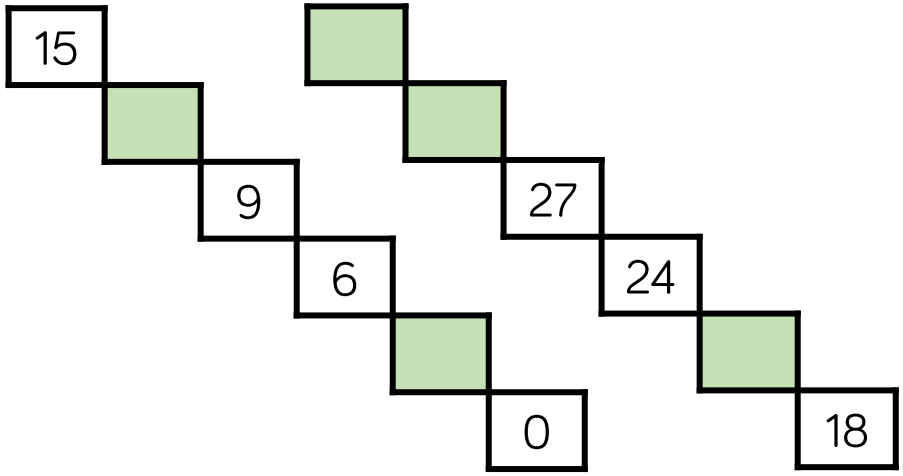
What are you counting up in?

Varied Fluency

- What do you notice about the numbers that are circled?
  Continue the pattern.



- Complete the number sequences.



- Amir has 15 stickers. He collects 3 more each day.
  Complete the number track to show how many he will have in six days.

Count in 3s

Reasoning and Problem Solving

True or False?

I start at 0 and count in 3s
I say the number 14

Explain your answer.

False.
If I count in 3s I say 3, 6, 9, 12, 15....

Teddy is counting in 2s and Jack is counting in 3s.

Teddy	2	4	6	8
Jack	3	6	9	12
+				

Teddy says,

If we add our numbers together as we count we can make a new number pattern.

What pattern do they make?
What happens if both Teddy and Jack count in 5s and they add them together to make a new pattern?

If Teddy and Jack add their numbers together they will be counting in 5s.

If Teddy and Jack both count in 5s their new pattern would be counting in 10s.

Count Money - Pence

Notes and Guidance

This block introduces the £ and p symbols for the first time.

Children will count in 1 p, 2 p, 5 p and 10 p coins. Children can also use related facts to count in 20 p coins.

Children do not convert between pounds and pence, therefore children will need to recognise the 50 p coin but they will not count up in 50 p coins.

Mathematical Talk

What is different about the coins you have counted?

Is the group with the most coins always the biggest amount? Why?

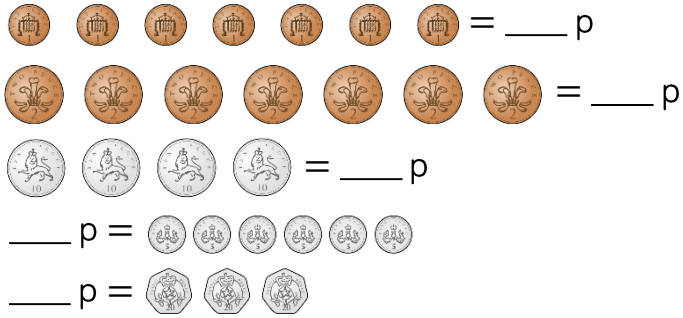
What do you notice about the totals?

Are silver coins always worth more than copper coins?

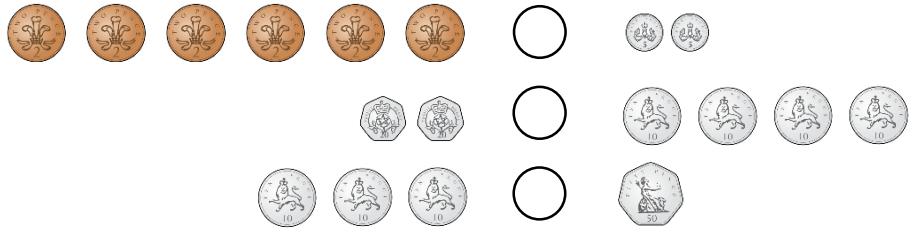
What different ways can you count the coins?
Which is the quickest way?

Varied Fluency

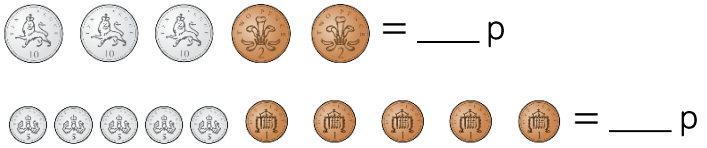
Count the money.



Use <, > or = to compare the money.



Count the money.



Count Money - Pence

Reasoning and Problem Solving

Jack selects four of these coins.

He can use the coins more than once.

What total could he make?

What is the lowest total?

What is the greatest total?

Example answers:

20 p, 10 p, 10 p and 1 p makes 41 p.

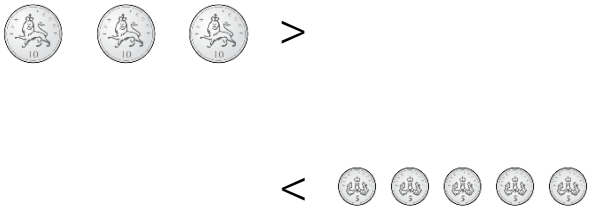
5 p, 5 p, 5 p and 5 p makes 20 p.

1 p, 20 p, 5 p and 2 p makes 28 p.

The lowest total would be 1 p, 1 p, 1 p and 1 p, makes 4 p.

The greatest total would be 20 p, 20 p, 20 p and 20 p makes 80 p.

Draw coins to make the statements correct.



For the first one, any answer showing less than 30 p on the right is correct. E.g. two 10 p coins.

For the second one, any answer showing less than 25 p on the left. E.g. three 2 p coins.

Count Money - Pounds

Notes and Guidance

Children will continue counting but this time it will be in pounds, not pence. The £ symbol will be introduced.
Children must be aware that both coins and notes are used to represent amounts in pounds.
Children will count in £1, £2, £5, £10 and £20s.
In this year group, children work within 100, therefore they will not count in £50s.

Mathematical Talk

Do the notes have a greater value than the coins?

Which is the hardest to count? Which is the easiest? Why?

What do you notice about the amounts?

Does it matter which side the equals sign is?

Can you find the total in a different way?

Varied Fluency

Count the money.

 = £____

£____ = 

 = £____

£____ = 

Complete the bar models.

Match the money to the correct total.

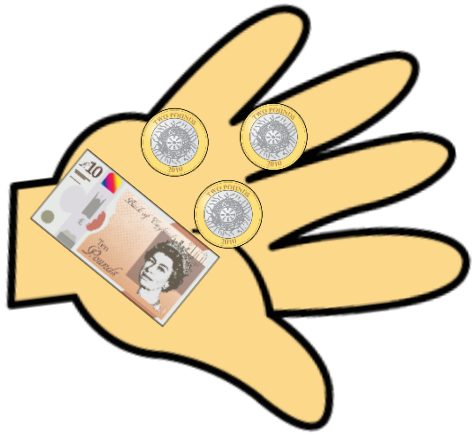
£25 £60 £10

Which is the odd one out? Explain why.

Count Money - Pounds

Reasoning and Problem Solving

Ron thinks he has £13



Is he correct?
Explain your answer.

No, because three £2 coins make £6

£10 and £6 is equal to £16

He has mistaken his £2 coins for £1 coins.

Explain the mistake.

£2, £4, £6, £7, £8, £10

£7 is the mistake. It is an odd number. The 2 times table are all even.

When counting in £2s, we would say

£2, £4, £6, £8, £10

White Rose Maths

Block 3 - Number

Theme 3 – Equal groups

Making Equal Groups

Notes and Guidance

Children begin by using stories which link to pictures and concrete manipulatives to explore making equal groups and write statements such as 'there are ___ groups of ___.' They will recognise and explain how they know when they are equal or not. Children see equal groups that are arranged differently so they understand that the groups look different but can still be equal in number.
At this stage children do not explore multiplication formally.

Mathematical Talk

How do I know that the groups are equal? What does equal mean?

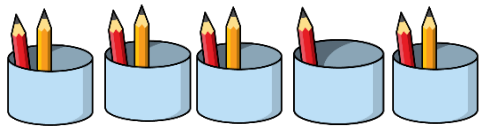
How many pencils are there in each pot? How can I complete the sentence to describe the groups?

What's the same and what's different?

Are Josh's groups equal or unequal? How can we make them equal?

Varied Fluency

Are the groups equal or unequal? Write a label for each.



Complete the sentences

There are ___ groups of ___ pencils.

There are ___ groups of ___ flowers.

Josh is drawing equal groups of 3

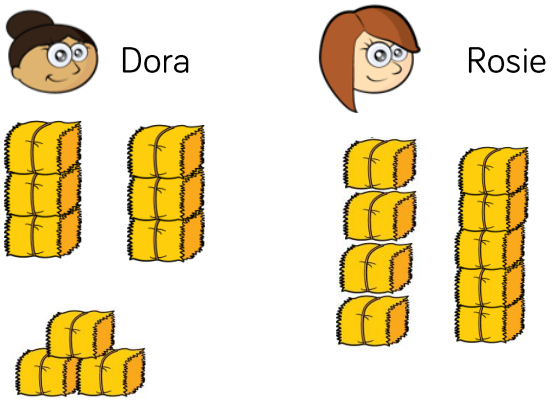
Complete his drawing.

Making Equal Groups

Reasoning and Problem Solving

Dora and Rosie are making hay bundles.

Who has made equal groups?



Explain how you know.

Possible answer:
Dora has made equal groups because she has 3 groups of 3 hay bundles.

Rosie has two unequal groups.

Use concrete materials or pictures to complete the questions.

Alex has 4 equal groups.
Show me what Alex's groups could look like.

Whitney has 3 unequal groups.
Show me what Whitney's groups could look like.

Children will show 4 groups where there are the same amount in each group for Alex and 3 groups that are unequal for Whitney.

Encourage children to do this in more than one way.

Add Equal Groups

Notes and Guidance

Children use equal groups to find a total. They focus on counting equal groups of 2, 5 and 10 and explore this within 50.
Children could begin by linking this to real life, for example animal legs, wheels, flowers in vases etc.
Stem sentences alongside number sentences can help children link the calculation with the situation. Ensure children have the opportunity to say their sentences aloud.

Mathematical Talk

How many apples are there in each bag?
Do all of the bags have an equal number of apples?
How many equal groups can you see?

How can we represent this with counters/cubes/on a number line/in a number sentence etc?

What other equipment could you use to represent your pattern? What's the same? What's different?

Which is more, 3 groups of 10 or 4 groups of 5? Prove why.

Varied Fluency

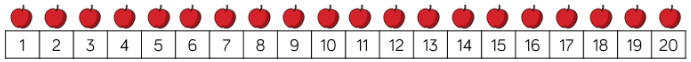
How many wheels altogether?

2 + 2 + 2 + 2 + 2 =

How many fingers altogether?

5 + 5 + 5 =

How many apples are there? Complete the sentences.

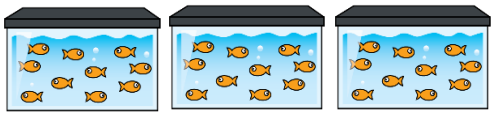


5 + 5 + 5 + 5 = ____

There are ____ apples.

There are ____ groups of ____ apples which is equal to ___

How many fish are there?
Complete the sentences.



___ + ___ + ___ = ___

There are ____ fish.

Can you show this using ten frames?

Add Equal Groups

Reasoning and Problem Solving

Eva and Whitney are making equal groups of bread rolls.

Eva

We need one more group to make 40

We need 10 more rolls to make 40

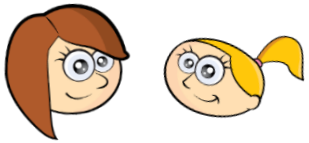
Whitney

Who do you agree with? Explain why.

Possible answer:
I agree with both.

They are counting in groups of 10 so they need one more group of 10

Rosie and Eva have equal groups of either 2, 5 or 10



Each of their totals is less than 40

Rosie has 5 equal groups.
Eva has 3 equal groups.

Eva's total is more than Rosie's total.

What could they be counting in?

Use equipment to help you.

Possible answers:
Rosie: 2 + 2 + 2 + 2 + 2 = 10
Eva: 5 + 5 + 5 = 15

Rosie: 5 + 5 + 5 + 5 + 5 = 25
Eva: 10 + 10 + 10 = 30

Rosie: 2 + 2 + 2 + 2 + 2= 10
Eva: 10 + 10 + 10 = 30

Recognise Equal Groups

Notes and Guidance

Children describe equal groups using stem sentences to support them. It is important that children know which groups are equal and unequal, and why they are equal or unequal. The addition and multiplication symbols are not used within this small step but use of the language of addition and multiplication will support them in understanding repeated addition and multiplication. The examples included refer to the times tables facts that Year 2 children need to know.

Mathematical Talk

What does the 2 represent? What does the 3 represent?

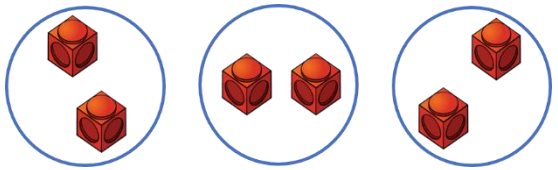
What does the 5 represent? What does the 2 represent?

I have ___ equal groups, with ___ in each group. Which image am I describing?

Why are these groups equal/unequal?

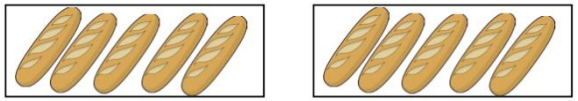
Varied Fluency

- Complete the stem sentences.



There are ____ equal groups with ____ in each group.

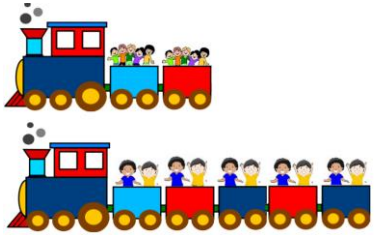
- Complete the sentences.



There are ____ equal groups with ____ in each group.

There are _____ baguettes altogether.

- Describe the equal groups.

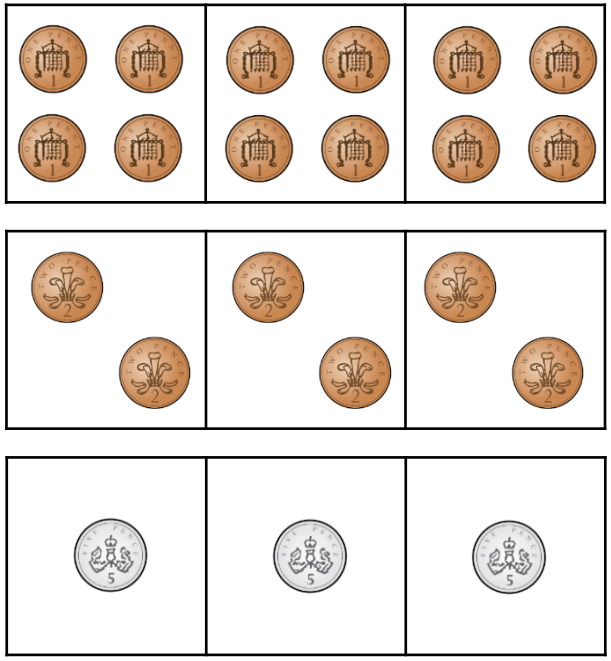


What is the same and what is different in each group?

Recognise Equal Groups

Reasoning and Problem Solving

Which group of money is the odd one out?

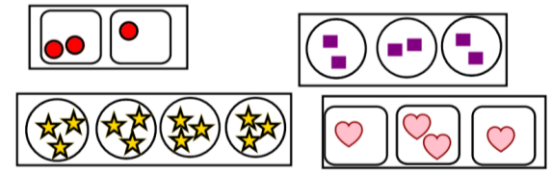


Explain why.

The bags with 5 p in each because the 2 ps and 1 ps have 4 p in each group.

Sort into equal and unequal groups.

Equal Groups	Unequal Groups

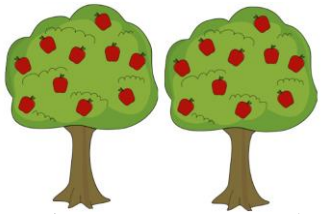


Create your own picture to go in each column.

Hearts and dots in unequal groups.

Stars and squares in equal groups.

Spot the mistake.



Alex says, "There are 10 equal groups with 2 in each group. There are ten 2s."

There are 2 equal groups with 10 in each group

There are two 10s.

Make Equal Groups

Notes and Guidance

Children should be able to make equal groups to demonstrate their understanding of the word 'equal'.

With the examples provided to the children, it is important that they are exposed to numerals and words, as well as multiple representations.

Mathematical Talk

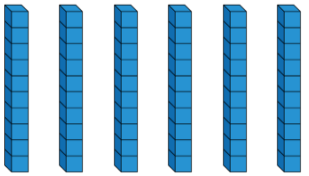
How else could you represent these in equal groups?

How many ways can you represent this?

How have you grouped your items?

Varied Fluency

- The Base 10 shows six equal groups with ten in each group.
There are six tens.



How else can you represent these as equal groups?

- How many ways can you represent 'four equal groups with three in each group'?

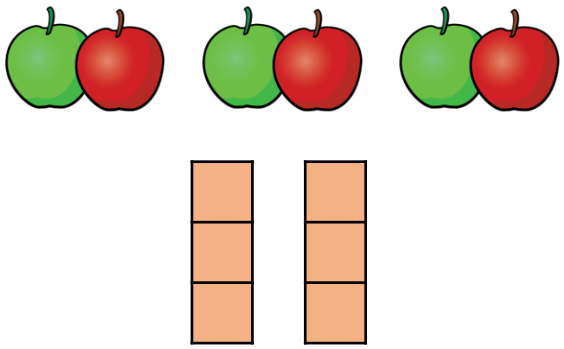
- What else do we need to show 'five 3s'?

How else can we show five equal groups with 3 in each group?
Compare your answer with a partner.

Make Equal Groups

Reasoning and Problem Solving

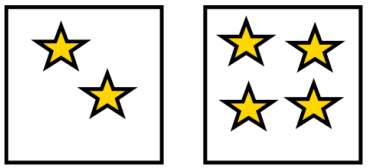
Has Eva shown the equal groups correctly?



Draw or use cubes to show what Eva should have done.

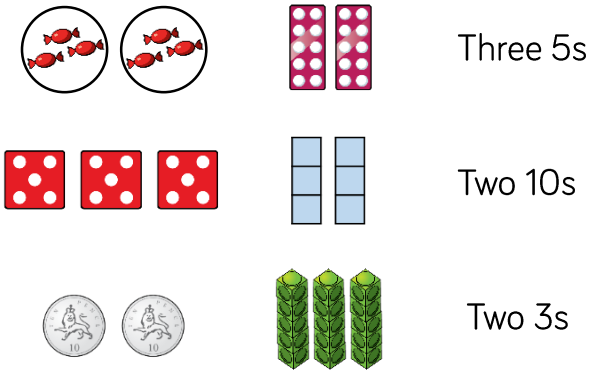
Children to draw or make 3 towers with 2 in each tower.

How can you make the groups equal?



Various answers e.g. move one star from right to left box. Any answer that makes them equal.

Match the equal groups.



Sweets, squares, two 3s.

Dice, cubes, three 5s.

Coins, number pieces, two 10s.

Add Equal Groups

Notes and Guidance

Children begin to connect equal groups to repeated addition.

At this point children have added 3 one digit numbers together, therefore they can add up to 3 equal groups when each group is any one digit number.

If there are more than 3 equal groups, the examples must be limited to 2s, 5s, 10s and 3s.

Mathematical Talk

What do the two 3s represent?

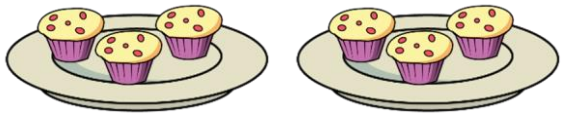
Why are we using the addition symbol?

How else can we show the equal groups?

What is the total?

Varied Fluency

Complete:



There are ____ equal groups with ____ in each group.
There are ____ 3s.
____ + ____ = 6

Complete:

There are ____ equal groups with ____ in each group.
There are three ____s.
____ + ____ + ____ = 12

Complete the table.

	Draw It	Say It	Add It
			

Add Equal Groups

Reasoning and Problem Solving

True or False?

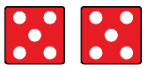
$5 + 5 = 2 + 2 + 2 + 2 + 2$

Draw an image or use cubes to help you explain your answer.

This is true because they are both equal to 10 but the groups look different.

To the left of the 'equal to' sign are 2 equal groups of 5, and to the right of the 'equal to' sign are 5 equal groups of 2.

Which one does not belong?



Two 5s

Ten

$5 + 5$

What do we need to change to make them all represent the same?

The three 5s do not belong. We would have to take away one five.

The Multiplication Symbol

Notes and Guidance

Children are introduced to the multiplication symbol for the first time. They should link repeated addition and multiplication together, using stem sentences to support their understanding.
They should also be able to interpret mathematical stories and create their own involving multiplication.
The use of concrete resources and pictorial representations is still vital for understanding.

Mathematical Talk

What does the 3 represent? What does the 6 represent?

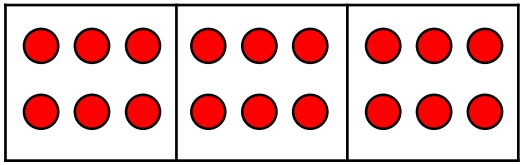
What does 'lots of' mean?

Does $18 = 3 \times 6$ mean the same?

How is $6 + 6 + 6$ the same as 3×6? How is it different?

Varied Fluency

Complete the sentences to describe the equal groups.



___ + ___ + ___ = 18

___ × ___ = 18

There are ___ equal groups with ____ in each group.
There are three ____.

Complete:

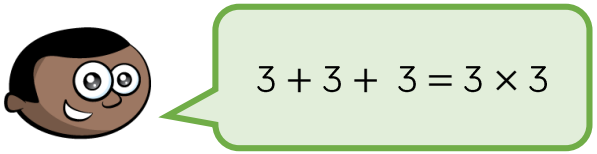
Three 2s	Draw It	Addition	Multiplication
There are 3 equal groups with 2 in each group.			

Complete:

Addition	Multiplication	Story
10 + 10 + 10		
	6 × 5	

The Multiplication Symbol

Reasoning and Problem Solving



Is Mo correct? Explain why.

Draw an image to help you.

He is correct because
3 + 3 + 3 = 9
and 3 × 3 = 9

Use <, > or = to make the statements correct.

3 × 5	◯	5 + 5 + 5 + 5
2 × 2	◯	2 + 2
10 × 2	◯	5 + 5 + 5

3 × 5 < 5 + 5 + 5 + 5

2 × 2 = 2 + 2

10 × 2 > 5 + 5 + 5

Think of a multiplication to complete:

6 + 6 + 6 > ___ × ___

Any two numbers which multiply together to give an answer of less than 18

The total is 12, what could the addition and multiplication be?

6 + 6 = 2 × 6

2 + 2 + 2 + 2 + 2 + 2 = 6 × 2

3 + 3 + 3 + 3 = 4 × 3

4 + 4 + 4 = 3 × 4

12 = 1 × 12

1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 12 × 1

Multiplication from Pictures

Notes and Guidance

Children will use the multiplication symbol and work out the total from pictures.

They should also be able to interpret a multiplication word problem by drawing images to help them solve it.

Coins could be used within this small step too.

Mathematical Talk

What does the 4 represent?

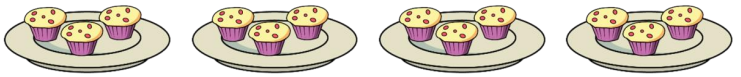
What does the 3 represent?

What does the 12 represent?

Can you think of your own story for $3 \times 4 = 12$?

Varied Fluency

Complete:



___ × ___ = ___

___ lots of 3 = ___

___ multiplied by ___ = 12

Complete:

4 lots of 3 ○

= 1 × ___

Complete the table.

Picture	Multiplication	Sentence
	4 × 10 = 40	4 lots of 10 is equal to 40
	35 = 7 × 5	
		6 lots of 3 is equal to 18

Multiplication from Pictures

Reasoning and Problem Solving

There are four baskets.

There are three dolls in each basket.

How many dolls are there altogether?

Draw an image and write a calculation to represent the problem.

The image could be 4 circles with 3 dots in each.

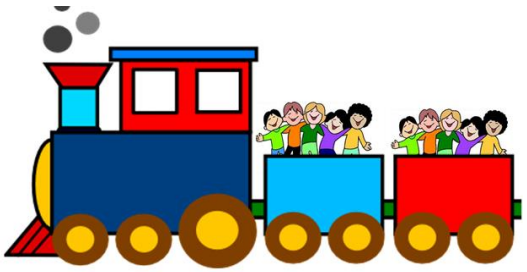
The calculation:

$4 \times 3 = 12$

Write a story for the calculation 4×10

Draw an image to illustrate your story.

Stories with 4 groups and 10 in each group, for example:
Four tables with ten children on each table.
Four purses with 10p in each purse.



2×5
$5 + 5$
5×2

Each calculation could explain the image.

Explain why.

There are 2 groups with 5 people in each group.

There are 5 people in one group and 5 in the other.

There are 5 lots of 2 people.

White Rose Maths

Block 3 - Number

Theme 4 – Arrays

Make Arrays

Notes and Guidance

Children begin to make arrays by making equal groups and building them up in columns or rows.

They use a range of concrete and pictorial representations alongside sentence stems to support their understanding.

Children also explore arrays built incorrectly and recognise the importance of columns and rows.

Mathematical Talk

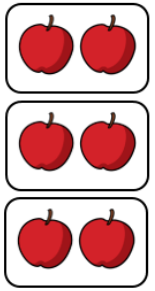
How many equal groups do I have? How many in each group?
Can I represent my apples with counters?

What is the difference between columns and rows?
How many counters in each row? How many counters in each column?

How can I record my array with a number sentence?

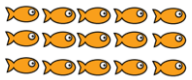
Varied Fluency

- Build an array with counters to represent the apples.
Complete the sentences.



There are ____ apples in each row.
There are ____ rows.
____ + ____ + ____ = ____
There are ____ apples altogether.

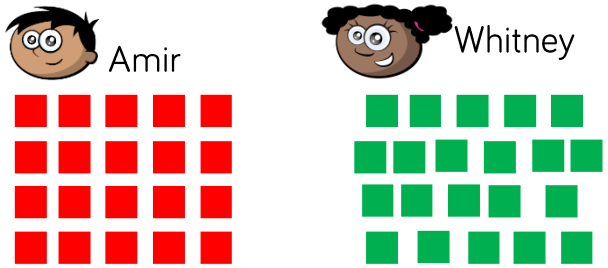
- Complete the table.

Array	Description - columns	Description - rows	Totals
	5 columns 2 cookies in each column	2 rows 5 cookies in each row	2 + 2 + 2 + 2 + 2 = 10 5 + 5 = 10
	___ columns ___ donuts in each column	___ rows ___ donuts in each row	
	___ columns ___ fish in each column	___ rows ___ fish in each row	
	3 columns 5 cupcakes in each column	5 rows 3 cupcakes in each row	

Make Arrays

Reasoning and Problem Solving

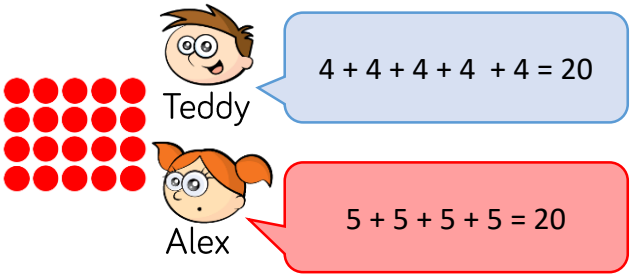
Amir and Whitney are making arrays.



Who has made a mistake? Explain why.

Possible answer: Whitney has made a mistake because her array is not in columns. There are an unequal amount of squares in each row.

Teddy and Alex are writing number sentences to describe the array.



Who do you agree with? Explain why.

Possible answer: They are both right. Teddy has counted the columns. Alex has counted the rows.

Eva begins to make an array with 40 counters.
She has finished her first row and her first column.
Complete her array.

Write two different number sentences to describe the finished array.

Possible answer:
Array showing 10 + 10 + 10 + 10 = 40

Or

4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 40

Making Doubles

Notes and Guidance

Children explore doubling with numbers up to 20
Reinforce understanding that 'double' is two groups of a number or an amount. Children show and explain what doubling means using concrete and pictorial representations.

They record doubling using the sentence, 'Double ___ is ____' and use repeated addition to represent doubles in the abstract. They look at representations to decide whether that shows doubling or not.

Mathematical Talk

Can you sort these representations in to doubles and not doubles? How do you know they've been doubled?

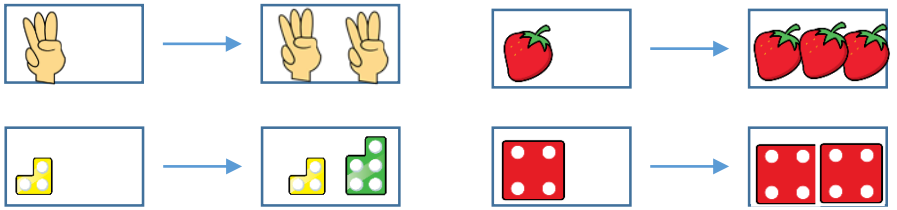
What comes next in my table, why?

How can we show the double differently?

If double 2 is 4, what is double 20?
What is the largest double we can roll on a normal dice?

Varied Fluency

Circle the representations which have been doubled:

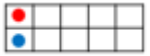
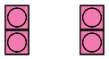


Take a number piece and double it. Complete the sentence.

Double ____ is ____

Double ____ is ____

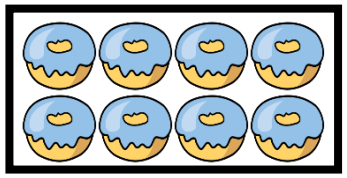
Complete and continue the table.

Build	Represent	Add	Double
		1 + 1 = 2	Double 1 is 2
		2 + 2 = __	Double 2 is __
		3 + 3 = __	Double 3 is __
		__ + __ = __	Double 4 is __

Making Doubles

Reasoning and Problem Solving

Louise doubles her donuts. The picture shows what she had after she doubled her donuts.

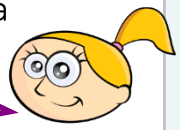


Whitney

Louise started with 4 and ended with 8 donuts.

Eva

Louise started with 8 and ended with 16 donuts.



Mo

Louise started with 2 and ended with 4 donuts.

Who do you agree with? Explain why.

Possible answer:
Whitney is correct because the image shows what she was left with. She had 8 after she doubled and double 4 is 8

Complete the table by doubling each number.

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

What patterns do you notice?

Possible answer:

1	2
2	4
3	6
4	8
5	10
6	12
7	14
8	16
9	18
10	20

The doubles increase by 2 each time.
The doubles are all even.
The doubles end in 2,4,6,8 or 0

Use Arrays

Notes and Guidance

Children explore arrays to see the commutativity of multiplication facts e.g. $5 \times 2 = 2 \times 5$

The use of the array could be used to help children calculate multiplication statements.

The multiplication symbol and language of 'lots of' should be used interchangeably.

Mathematical Talk

Where are the 2 lots of 3?

Where are the 3 lots of 2?

What do you notice?

What can we use to represent the eggs?

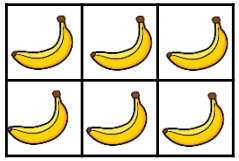
Can you draw an image?

Varied Fluency

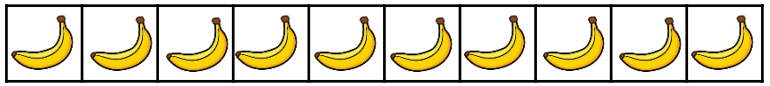
- On the image, find 2×5 and 5×2

Can you represent this array using another object?

- Complete the number sentences to describe the arrays.



2 × 3 and ___ × ___



___ × ___ and ___ × ___

- Draw an array to show:

$4 \times 5 = 5 \times 4$
3 lots of 10 = 10 lots of 3

Use Arrays

Reasoning and Problem Solving

With 12 cubes, how many different arrays can you create?

Once you have created your array complete:

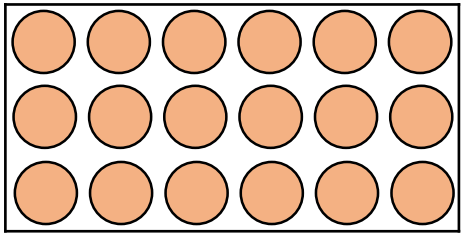
___ × ___ = ___ × ___

$1 \times 12 = 12 \times 1$

$2 \times 6 = 6 \times 2$

$3 \times 4 = 4 \times 3$

Find different ways to solve six lots of three.



Count in 3s
3 lots of 3 add 3 lots of 3
5 × 3 add 1 × 3
etc.

Part of this array is hidden.

The total is less than 16

What could the array be?

4×2
5×2
6×2
7×2

White Rose Maths

Block 3 - Number

Theme 5 – Times tables

The 2 Times-Table

Notes and Guidance

Children should be comfortable with the concept of multiplication so they can apply this to multiplication tables.

Images, as well as number tracks, should be used to encourage children to count in twos.

Resources such as cubes and number pieces are important for children to explore equal groups within the 2 times-table.

Mathematical Talk

If 16 p is made using 2 p coins, how many coins would there be?

How many 2s go into 16?

How can the images of the 5 bicycles help you to solve the problems?

Varied Fluency

- Count in 2s to calculate how many eyes there are.

There are ____ eyes in total.

____ × ____ = ____

- Complete the number track.

2	4		8		12
14	16	18			24
	2	4	6	8	

- How many wheels are there on five bicycles?

If there are 14 wheels, how many bicycles are there?

The 2 Times-Table

Reasoning and Problem Solving

Fill in the blanks.

$3 \times \_\_\_ = 6$

$\_\_\_ \times 2 = 20$

$\_\_\_ = 8 \times 2$

2

10

16

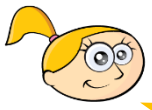
Tommy says that $10 \times 2 = 22$

Is he correct?

Explain how you know.

No Tommy is wrong because $10 \times 2 = 20$
Children could draw an array or a picture to explain their answer.

Eva says,



Every number in the 2 times-table is even.

Is she correct? Explain your answer.

Yes, because 2 is even, and the 2 times-table is going up in 2s. When you add two even numbers the answer is always even.

The 5 Times-Table

Notes and Guidance

Children can already count in 5s from any given number. They will also have developed understanding of the 2 times-table.

This small step is focused on the 5 times table and it is important to include the use of zero. Children should see the = sign at both ends of the calculation to understand that it means 'equals to'.

Mathematical Talk

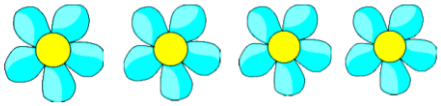
If there are 30 petals, how many flowers? Can you count in 5s to 30? How many 5s go into 30?

How many 5s go into 35?

What does each symbol mean?

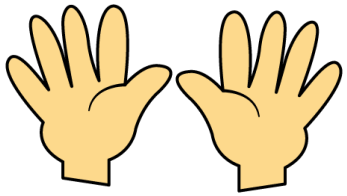
Varied Fluency

- How many petals altogether?



Write the calculation.

- There are 35 fingers.
How many hands?



___ × 5 = 35

- Use <, > or = to make the statements correct.

2 × 5 ◯ 5 × 2

3 × 2 ◯ 4 × 5

10 × 5 ◯ 5 × 5

The 5 Times-Table

Reasoning and Problem Solving

Is Mo correct?

Explain your answer.

Mo is incorrect because some of the multiples of the five times-table are even, e.g. 10, 20, 30

Tubes of tennis balls come in packs of 2 and 5

Whitney has 22 tubes of balls.

How many of each pack could she have?

How many ways can you do it?

Whitney could have:
4 packs of 5 and 1 pack of 2,
11 packs of 2 and 0 packs of 5,
2 packs of 5 and 6 packs of 2

Tommy and Rosie have both drawn bar models to show 7 × 5

35						
5	5	5	5	5	5	5

35				
7	7	7	7	7

What's the same and what is different about their bar models?

Draw your own bar model to represent 4 × 5

The total shown is the same.
Tommy's bar shows seven lots of 5 whereas Rosie's bar show five lots of 7

Children can choose either way to represent 4 × 5

The 10 Times-Table

Notes and Guidance

Children have counted in 10s from any given whole number. This small step is focused on the 10 times-table and it is important to include the use of zero.

Children should see the = sign at both ends of the calculation to understand what it means.

Mathematical Talk

What if there were 10 packs of crayons?

If there are 50 crayons altogether, how many packets are there? How do you know?

How many tens go into 30? Can you count in 10s to 30?

What does greater than mean? What does less than mean?

Varied Fluency

- How many crayons are there altogether?

There are ____ crayons altogether.

____ × 10 = ____

- Altogether there are 30 bottles, how many walls are there?

__ × 10 = 30

- Think of a multiplication fact for 10s to go in each box.

2 × 10		9 × 10	0 × 10		2 × 10
smallest		greatest	smallest		greatest
	1 × 10	6 × 10		5 × 10	
smallest		greatest	smallest		greatest

The 10 Times-Table

Reasoning and Problem Solving

On sports day, Jack runs 10 metres, 7 times.

Which of these calculations do **not** describe this word problem?

$10 + 7$

7×10

$7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7$

$10 + 10 + 10 + 10 + 10 + 10 + 10$

Explain why.

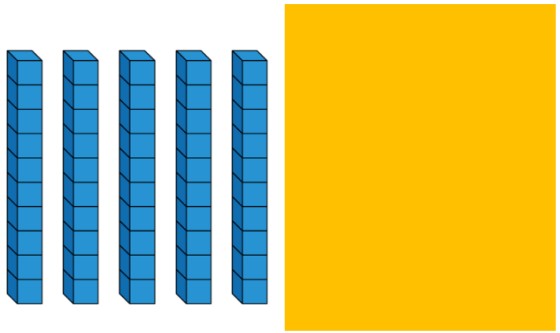
$10 + 7$ is incorrect because he has run 10 metres, 7 times, not 10 metres then 7 metres.

$7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7$ is incorrect because he does not run 7 metres each time but 10 metres.

Some Base 10 is hidden.

The total is less than 100

What could the calculation be?



$\_\_\_ \times 10 = \_\_\_$

Tim says it could be 10×10
Is he correct? Explain your answer.

It could be
$6 \times 10 = 60$
$7 \times 10 = 70$
$8 \times 10 = 80$
$9 \times 10 = 90$

It can't be 10×10 because 100 is not less than 100, it is equal to 100.