

**White**

**Rose  
Maths**

Spring - Block 2

**Place Value (within 50)**

# Overview

## Small Steps

Notes for 2020/21

- 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
- Count in 2s
- Count in 5s

This block builds on previous learning on place value.

Spend time consolidating work with smaller numbers before moving on to numbers within 50.

Links should be made between numbers below 10 so that children are constantly using their prior learning to help them.

## 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

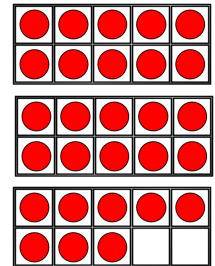
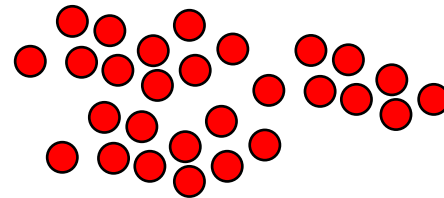
- count forwards from 35 to 49
- count back from 46 to 38

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 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?



|    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|
| 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
|----|----|----|----|----|----|----|----|----|----|----|

# Numbers to 50

## Reasoning and Problem Solving

Annie counts how many muffins she has.



I have 35 muffins.

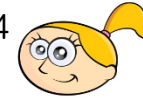


Do you agree with Annie?

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:



43, 42, 41, 40, 41, 42

Whitney writes:

10 11 12 13 41 15



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?

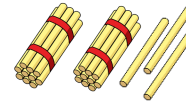
How many ones are there?

I have \_\_\_ tens and \_\_\_ ones. What number does that make?

How do we record this number in words?

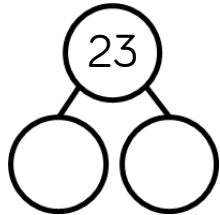
## Varied Fluency

- 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.

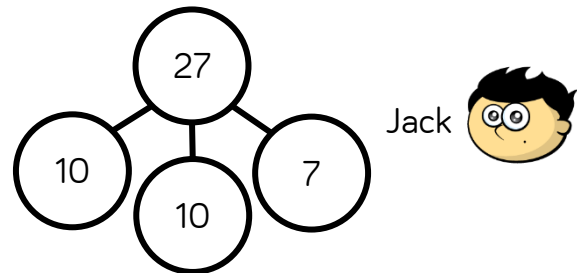
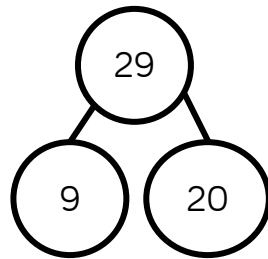
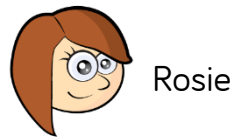
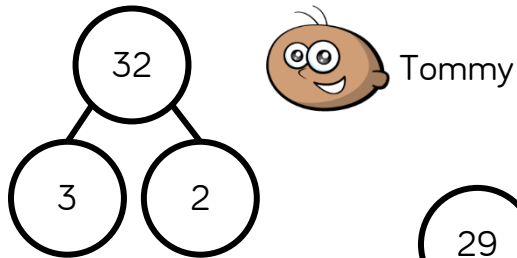
- Four tens and three ones
- Two tens and five ones
- Three tens and four ones
- Three ones and five tens

How many?

# Tens and Ones

## Reasoning and Problem Solving

The children are completing the part whole models.



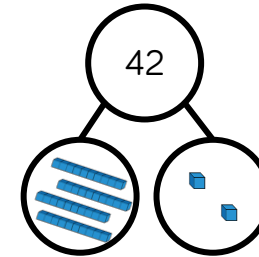
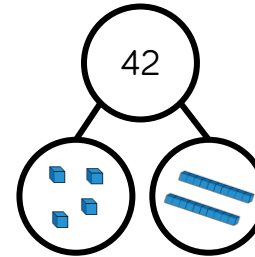
Are they correct?  
Explain why.

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.



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?

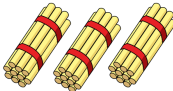
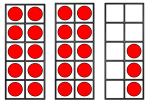
How many tens are there? How many ones?

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

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

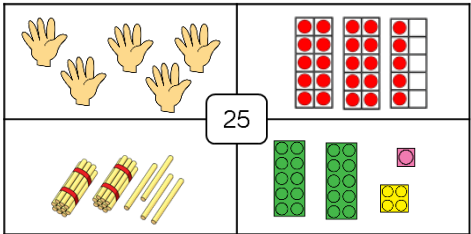
## Varied Fluency

Complete the table.

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

How many different ways can you represent the following numbers?  
Here is an example for 25

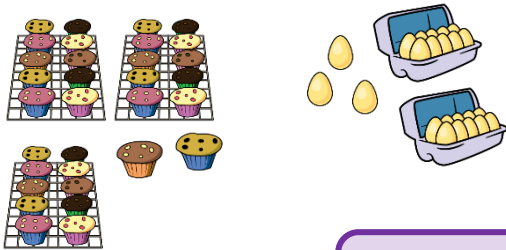
- 34
- 28
- 40
- 16



# Represent Numbers to 50

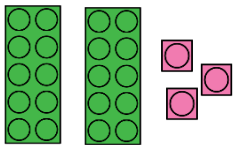
## Reasoning and Problem Solving

Sort the representations in to two groups.

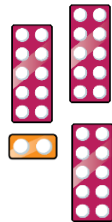


23

Three tens  
and 2 ones



Twenty and  
three



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

Explain how you have sorted them.

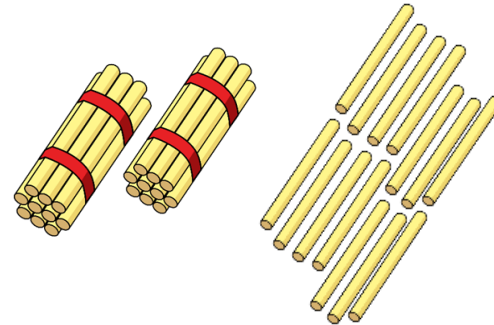
Can you add your own representations?

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

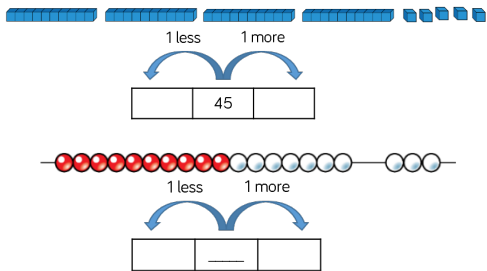
Fill in the blanks:



There are \_\_\_\_ donuts.  
One more than \_\_\_\_ is \_\_\_\_

There are \_\_\_\_ donuts. One less than \_\_\_\_ is \_\_\_\_

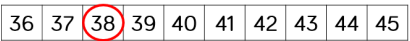
Build and find one more and one less.



One more than \_\_\_\_ is \_\_\_\_  
One less than \_\_\_\_ is \_\_\_\_

One more than \_\_\_\_ is \_\_\_\_  
One less than \_\_\_\_ is \_\_\_\_

Find one more and one less:

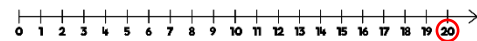


One more than \_\_\_\_ is \_\_\_\_  
One less than \_\_\_\_ is \_\_\_\_

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 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 One Less

## Reasoning and Problem Solving

Always, sometimes, never...



When you find one more than a number, only the ones digit will change.

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 ☐

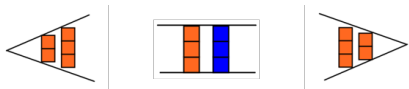
26  
35  
45  
49

# 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?

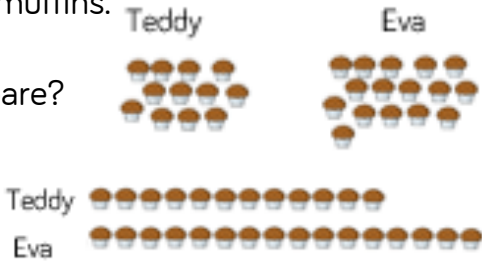
How do you know you have more or less?

Can you record your ideas in a different way?

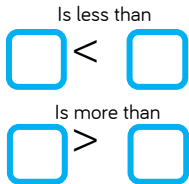
## Varied Fluency

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 

Jack says:

I have more.



Eva says:

I have more.



Who is right?

Practise comparing objects with your friend.

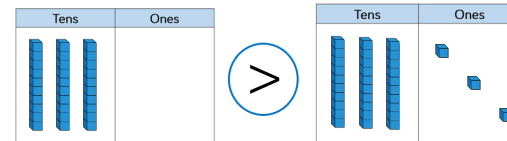
Jack looks like he has more but his cubes are spread out.

Eva has more.

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

Dexter compares two numbers.

30 is less than 33



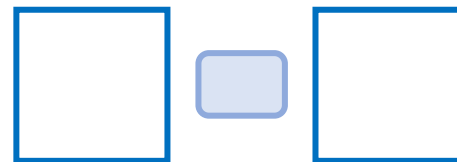
Do you agree with Dexter?

Explain your answer.

Pick a card.



Draw pictures in the boxes to make the comparison true.



Dexter is correct but he has used the wrong symbol.

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?

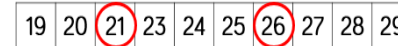
What do  $<$ ,  $>$  and  $=$  mean?

How do you know you have more or less?

What could you use to help you compare?

## Varied Fluency

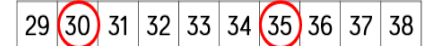
Use the number track to compare the two numbers using words and inequality symbols.



21 is \_\_\_\_\_ than 26

26 is \_\_\_\_\_ than 21

21 ○ 26      26 ○ 21



□ 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

48 ○ 39

28 ○ 29

2 tens < □

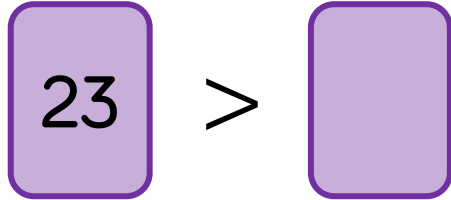
# Compare Numbers within 50

## Reasoning and Problem Solving

Teddy is comparing two numbers.



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



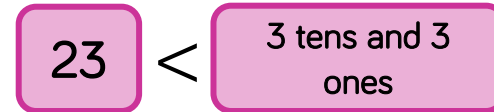
What could Teddy's number be?

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.

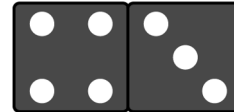


Change one thing in the values so they are equal.

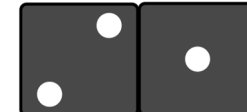
Pick two dominoes to represent two two-digit numbers.

For example,

43



21



Then compare them using  $<$ ,  $>$  or  $=$

$43 > 21$   $21 < 43$

Explain how you know.

Dora could change  $23 = \underline{2}$  tens and 3 ones or  $\underline{3}3 = 3$  tens and 3 ones.

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

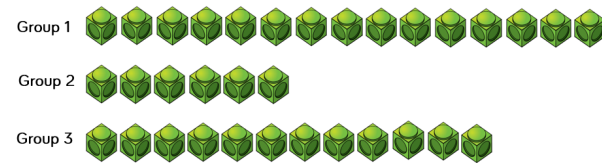
Which group has the most? Which group has the least?  
How does knowing this help us order the groups from largest to smallest?

Can you build the groups using equipment and compare?

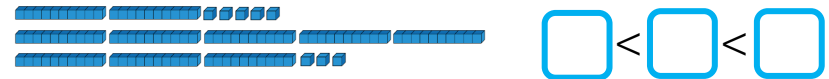
What is the smallest/largest number that could complete the empty box?

### 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

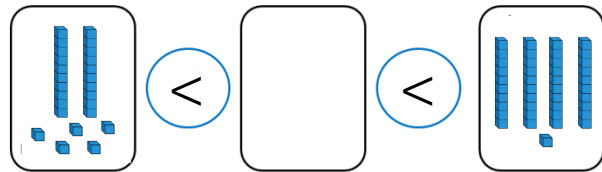
Spot the Mistake

$$12 > 21 > 33 > 35$$

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

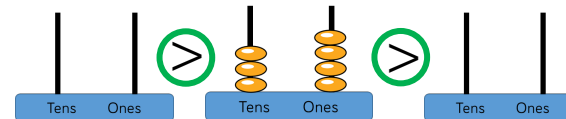
Alex has this abacus.



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?

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

## 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?



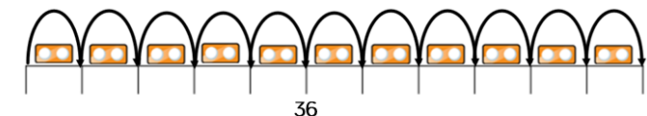
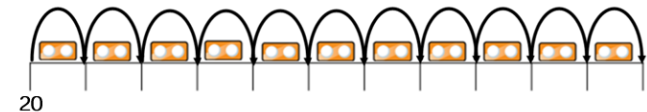
There are \_\_\_ gloves in total.

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 |

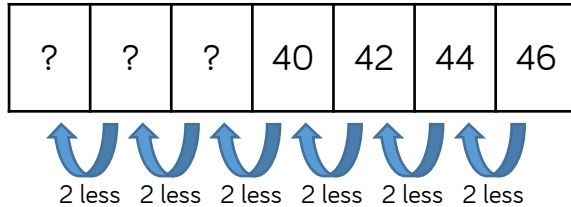
Complete the number lines by counting in 2s.



## 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?

Always, sometimes, never...



When you count in twos, your digits will be 0, 2, 4, 6, 8

Prove it!

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

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.



50, 48, 46, 44...

12, 14, 16...



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

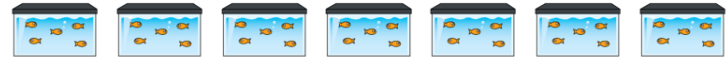
How can we count the groups of 5?

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.

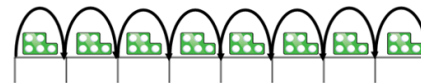
There are \_\_\_\_ bunches.

There are \_\_\_\_ grapes altogether.

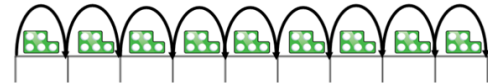
Continue counting in 5s on the grid.

|    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|
| 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.



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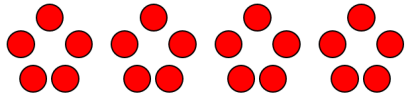


35

## 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.

#### Odd One Out

25

27

30

45

Which is the odd one out? 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.

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.