

Friday 26.02.21

Year 2 Maths Division

TIME FOR MATHS



Lesson 5
Division by grouping using a number line

Spring 2

To make equal groups by grouping

Success Criteria

I can make equal groups from a set of objects

I know that division is making equal groups

I know that counting equal groups is multiplication or repeated addition



In our lesson today we will learn how to use a number line to divide by grouping.
Watch the lesson video where I explain each step.

To make equal groups by grouping

Key Vocabulary:

equal lots of	equal sets of	equal groups of
grouping	share equally	division
divide	left over	One each, two each...

Sentence Stems:

There areequal groups of (number). There arealtogether.

Example

There are 6 equal groups of 2. There are 12 altogether.

.....can be put into groups of This is the same asbeing divided into groups of which equals This can be written as \div =

Example

20 can be put into groups of 4. This is the same as 20 divided into groups of 4, which equals 5. This can be written as $20 \div 4 = 5$

.....divided by equals

Example

20 divided by 4 equals 5.

Daily Fluency and Recall Tasks

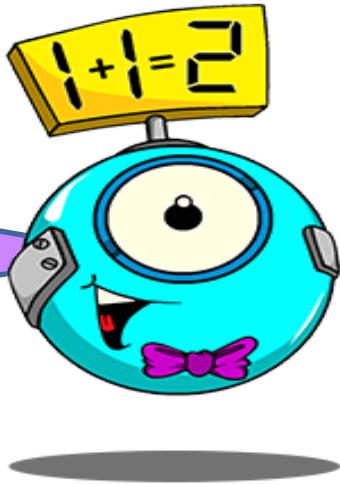
Challenge:

Can you find 2 division sentences that go with

$$3 \times 10 = 30$$

and

$$9 \times 5 = 45$$



Why not try Hit the button at
<https://www.topmarks.co.uk/mathsgame/hit-the-button>

You could practise your number bonds, division facts and doubles as well.

Try to learn your:

2 times table

5 times table

10 times table

3 x table

It's really important that you practise your times tables every day as they will help you with lots of the maths you will meet in KS2.

Revision

$$66 - 59 =$$

$$51 - 25 =$$

$$7 \times 5 =$$

$$16 \div 2 =$$

Mrs. Riley has 10 apples. She puts 2 apples in a bag. How many bags does she need ?



Write a number story for $16 \div 2$.

We practise the key mathematical operations every day to help us improve our skills.

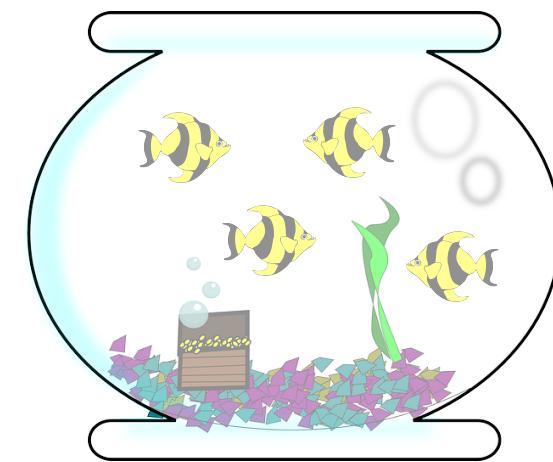
Anchor Task:

How many ways could you solve this?

John has 20 fish.

He puts 4 fish in each tank.

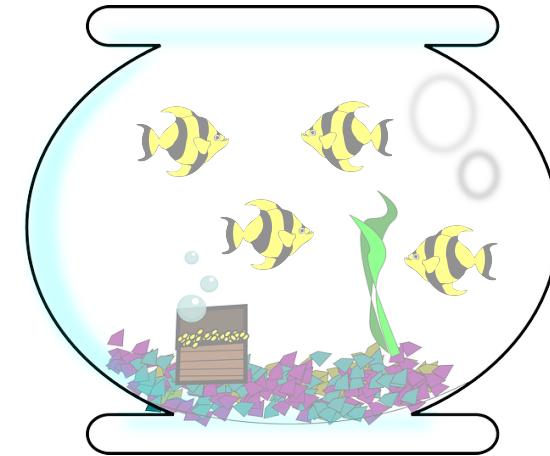
How many tanks can he fill?



Anchor Task:

How many ways could you solve this?

John has 20 fish.
He puts 4 fish in each tank.
How many tanks can he fill?



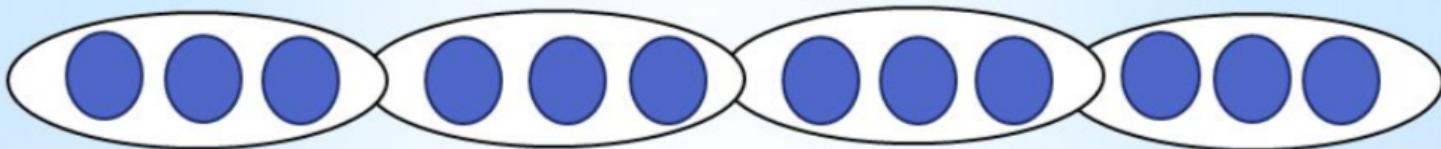
You could draw a picture. You could use objects. You could use your times tables.

Recap

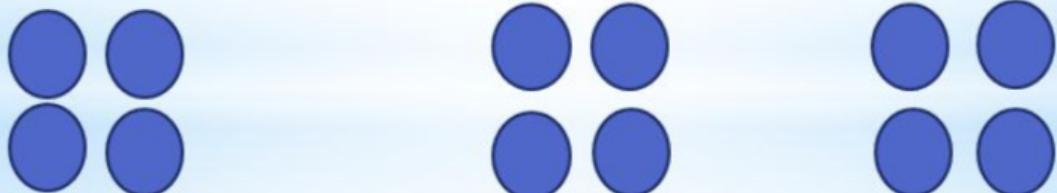
Grouping and Sharing

$$12 \text{ divided by } 3 = 4$$

Grouping – we know how many are in each group but not how many groups there will be. **The answer is the number of groups.**



Sharing – we know how many groups there are but not how many are in each group. **The answer is the number in each group.**



Use the language of division in every day life. E.g. 10 cakes divided by 5 equals 2 each
10 socks sorted in pairs makes 5 pairs.

When we divide by sharing we know how many groups there will be but **have to work out how many will be in each group.**

When we divide by grouping we know how many will be in each group. **What we have to work out is how many groups we can make.**

Recap

We have learned to divide by grouping.

Doughnuts come in packs of 100. We need to put 10 doughnuts on each tray. How many trays will we need? Talk to your grown up.



Recap

Doughnuts come in packs of 100. We need to put 10 doughnuts on each tray. How many trays will we need?

There are 100 doughnuts altogether.

There are 10 doughnuts on each tray.

There are 10 trays.

$$100 \div 10 = 10$$

$$10 \times 10 = 100$$

We can collect 100 objects, split them into groups of 10 and count the groups.



Explore

How many equal groups of 5 can you make from 15?

As well as drawing pictures or using objects, we can use a number line to group. Watch the video to see how to do this.

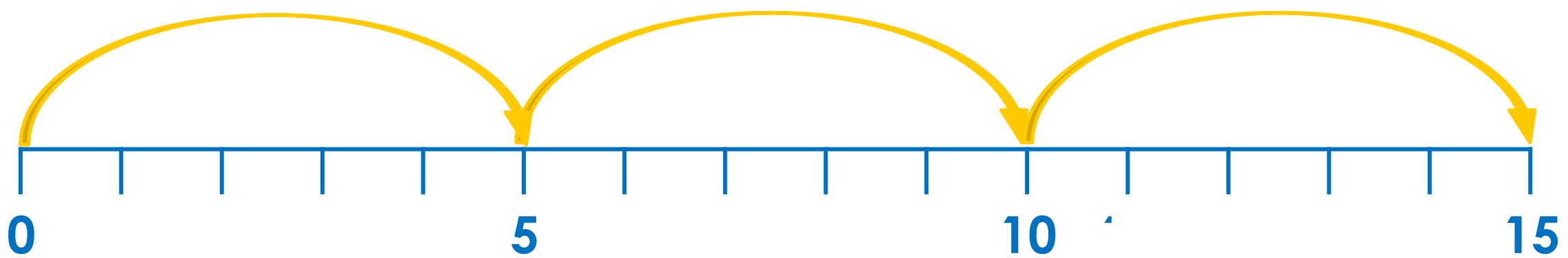


_____ groups of 5 make _____.

Explore

How many equal groups of 5 can you make from 15?

As well as drawing pictures, we can use a number line to group.



3 groups of 5 make 15.

To make equal groups by grouping

Guided Practice:

Mrs Riley uses a number line to work out how many equal groups of 3 she can make from 12.



You need to draw a number line starting at 0 and stopping at 12 - the total number of objects you have .

To make equal groups by grouping

Guided Practice:

Mrs Riley uses a number line to work out how many equal groups of 3 she can make from 12.

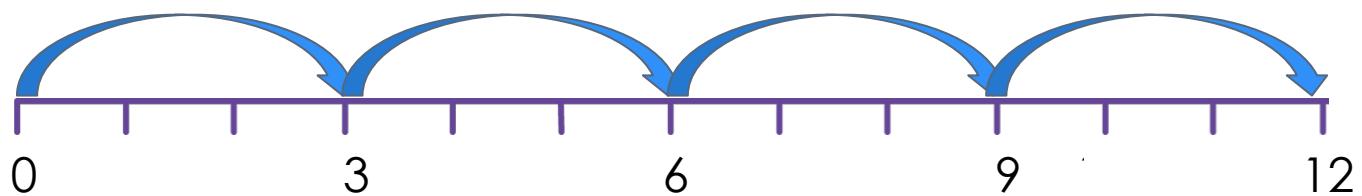


Then you need to jump on along the number line in steps of 3 – this is how many there are in each group. You keep jumping in 3s until you reach 12.

To make equal groups by grouping

Guided Practice:

Mrs Riley uses a number line to work out how many equal groups of 3 she can make from 12. ($12 \div 3 =$)



Stop when you reach 12. Then count how many jumps you have made. (Each jump is a group.)

I can make 4 groups of 3.

$$12 \div 3 = 4$$

To make equal groups by grouping

Guided Practice:



Can you use a number line to work out how many groups of 5 you can make from 25? $(25 \div 5 =)$

Remember to begin by drawing a number line. You don't need to put numbers on it. Then you need to jump on along the number line in steps of 5 – this is how many there are in each group. Once you have reached 25 in jumps of 5, count your jumps.

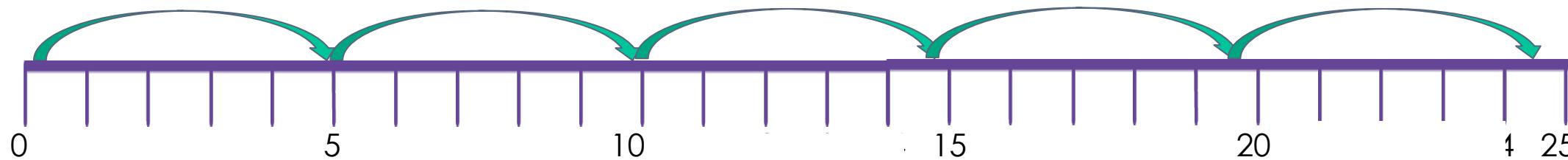
To make equal groups by grouping

Guided Practice:

Can you use a number line to work out how many groups of 5 you can make from 25? ($25 \div 5 =$)

You can make 5 groups of 5.

$$25 \div 5 = 5$$

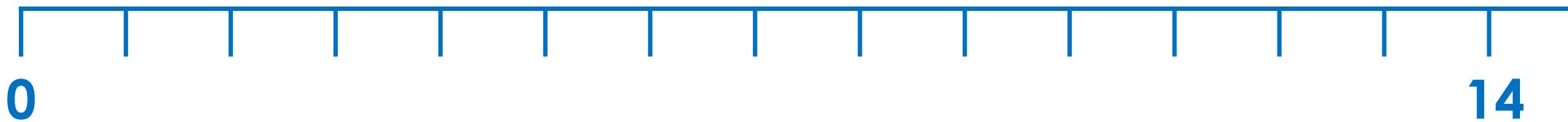


To make equal groups by grouping

Guided Practice:

$$14 \div 2 =$$

How many equal groups of 2 can you make from 14?



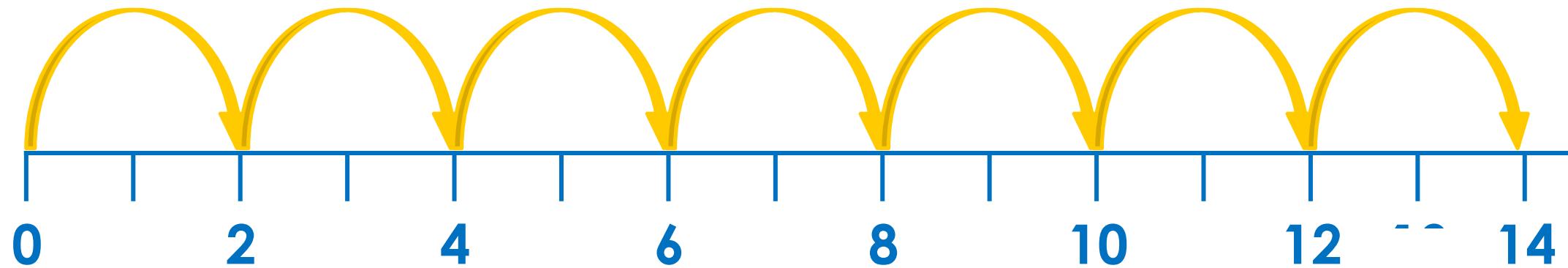
_____ groups of 2 make _____.

To make equal groups by grouping

Guided Practice:

$$14 \div 2 =$$

How many equal groups of 2 can you make from 14?



7 groups of 2 make 14 .

$$14 \div 2 = 7$$

To make equal groups by grouping

Independent task

Solve these division equations by counting the jumps on a number line:

$10 \div 2 =$

$22 \div 2 =$

$50 \div 10 =$

$20 \div 10 =$

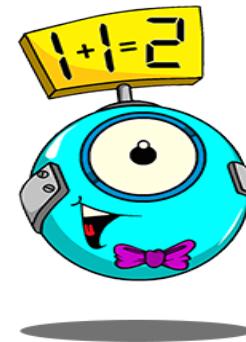
$45 \div 5 =$

$30 \div 5 =$

$18 \div 2 =$

$20 \div 5 =$

You can draw your own number lines or use the templates on our Remote Learning page.



Record the second division sentence and two multiplication sentences to match these equations.

To make equal groups by grouping

If you're not confident yet....

Use the number lines on the next page to help you.

Solve these division equations by counting the jumps on a number line:

$10 \div 2 =$

$16 \div 2 =$

$20 \div 10 =$

$20 \div 10 =$

$15 \div 5 =$

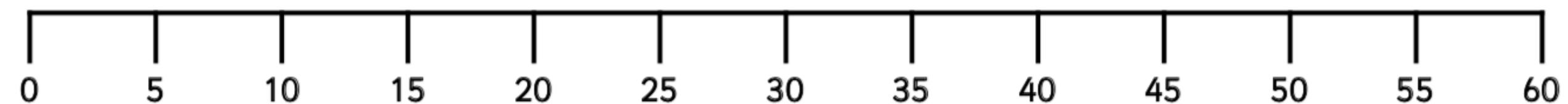
$30 \div 5 =$

$18 \div 2 =$

$20 \div 5 =$

Check out this video to remind you what to do.

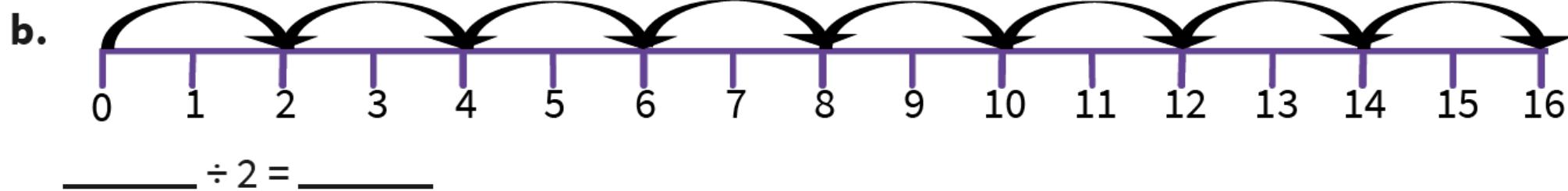
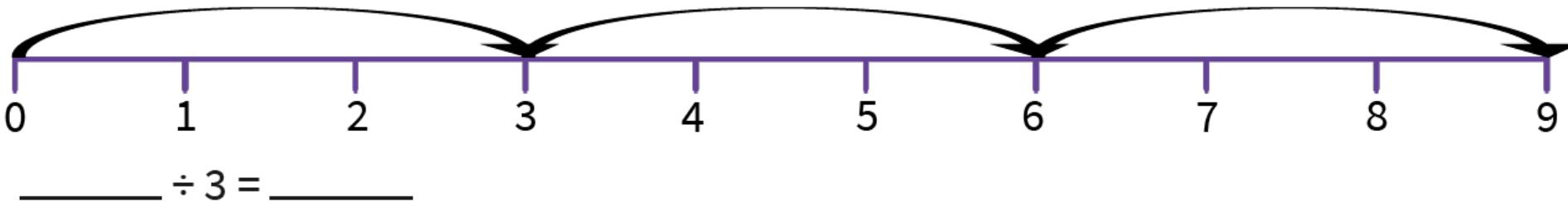
<https://www.bbc.co.uk/bitesize/topics/zqbg87h/articles/zyp7b82>



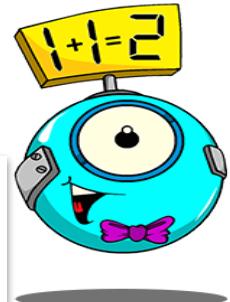
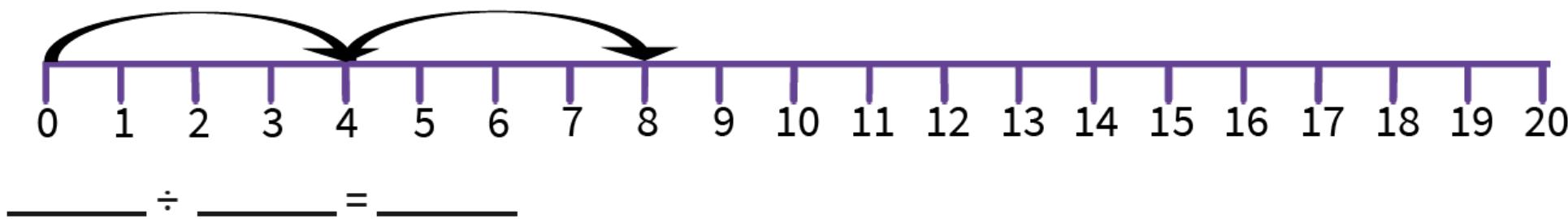
To make equal groups by grouping

Challenge Task

2. a. Use the number lines to help fill in the calculation.



c. Complete the arrows to show the groups on the number line and then fill in the calculation.



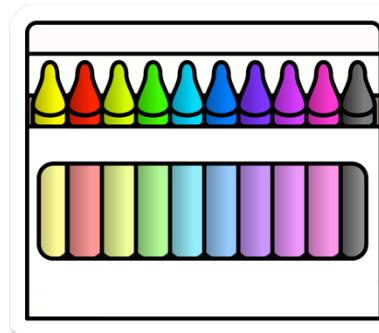
To make equal groups by grouping

Let's Reflect:

Crayons come in packs of 10.

Can you show how many packs there would be if there were 40 crayons altogether?

Can you show this on a bar model and a number line?



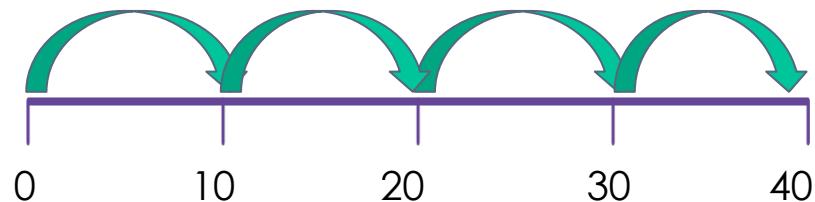
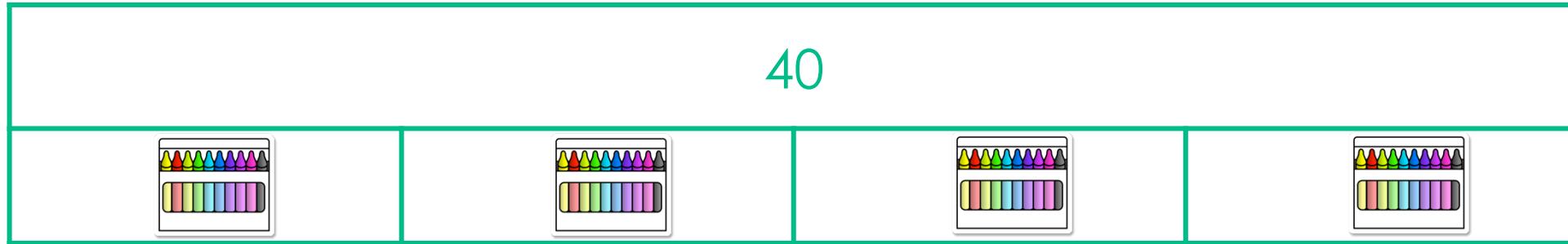
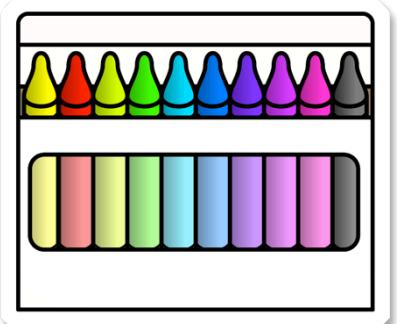
To make equal groups by grouping

Let's Reflect

Crayons come in packs of 10.

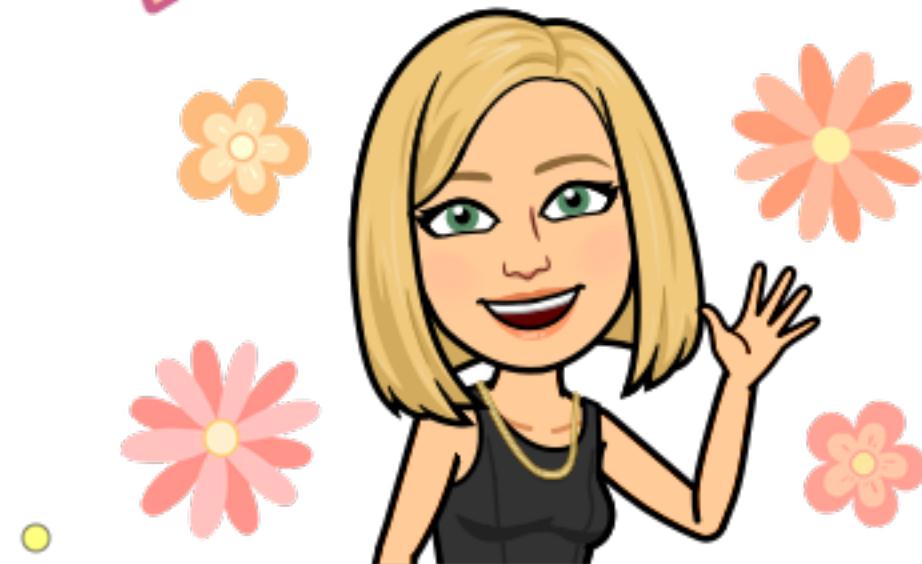
Can you show how many packs there would be if there were 40 crayons altogether?

Can you show this on a bar model and a number line?



There would be 4 packs of 10.

HERE'S THE
ANSWERS



Revision Answers

$$86 - 59 = 27$$

$$51 - 25 = 26$$

$$7 \times 5 = 35$$

$$16 \div 2 = 8$$

Mrs. Riley has 10 apples.
She puts 2 apples in a bag. How many bags does she need ?

$$10 \div 2 = 5$$



We practise the key mathematical operations every day to help us improve our skills.

$$10 \div 2 = 5$$

$$0 \overbrace{2 \ 4 \ 6 \ 8} \overbrace{10} \leftarrow 5 \text{ jumps}$$

$$10 \div 5 = 2$$
$$2 \times 5 = 10$$
$$5 \times 2 = 10$$

$$50 \div 10 = 5$$

$$0 \overbrace{10 \ 20 \ 30} \overbrace{40 \ 50} \leftarrow 5 \text{ jumps}$$

$$50 \div 5 = 10$$
$$5 \times 10 = 50$$
$$10 \times 5 = 50$$

$$18 \div 2 = 9$$

$$0 \overbrace{2 \ 4 \ 6 \ 8} \overbrace{10 \ 12 \ 14 \ 16} \overbrace{18} \leftarrow 9 \text{ jumps}$$

$$18 \div 9 = 2$$
$$2 \times 9 = 18$$
$$9 \times 2 = 18$$

$$45 \div 5 = 9$$

$$0 \overbrace{5 \ 10 \ 15} \overbrace{20 \ 25} \overbrace{30 \ 35 \ 40} \overbrace{45} \leftarrow 9 \text{ jumps}$$

$$45 \div 9 = 5$$
$$5 \times 9 = 45$$
$$9 \times 5 = 45$$

$$22 \div 2 = 11$$

$$0 \overbrace{2 \ 4 \ 6 \ 8} \overbrace{10 \ 12 \ 14 \ 16} \overbrace{18 \ 20} \overbrace{22} \leftarrow 11 \text{ jumps}$$

$$22 \div 11 = 2$$
$$11 \times 2 = 22$$
$$2 \times 11 = 22$$

$$20 \div 10 = 2$$

$$0 \overbrace{10} \overbrace{20} \leftarrow 2 \text{ jumps}$$

$$20 \div 2 = 10$$
$$2 \times 10 = 20$$
$$10 \times 2 = 20$$

$$30 \div 5 = 6$$

$$0 \overbrace{5 \ 10 \ 15} \overbrace{20 \ 25} \overbrace{30} \leftarrow 6 \text{ jumps}$$

$$30 \div 6 = 5$$
$$5 \times 6 = 30$$
$$6 \times 5 = 30$$

$$20 \div 5 = 4$$

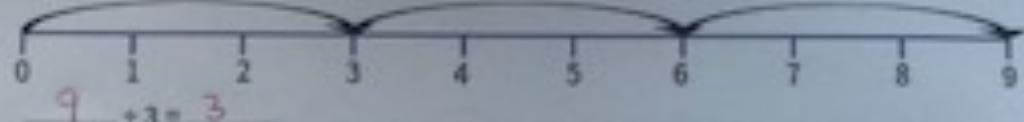
$$0 \overbrace{5 \ 10 \ 15} \overbrace{20} \leftarrow 4 \text{ jumps}$$

$$20 \div 4 = 5$$
$$4 \times 5 = 20$$
$$5 \times 4 = 20$$

To make equal groups by grouping

Challenge Task

2. a. Use the number lines to help fill in the calculation.



b. c. Complete the arrows to show the groups on the number line and then fill in the calculation.

