

Lesson 16 – Multiplication & Division – Divide by 2

NC Objective:
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs.

Resources needed:
Differentiated Sheets
Teaching Slides

Vocabulary:
Multiplication, division, equal, grouping, sharing, equals symbol, halving, number sentence

Children should be secure with grouping and sharing. They will use this knowledge to help them divide by 2. They will be secure with representing division as an abstract number sentence using the division and equals symbol.
Children should be able to count in 2s and know their 2 times table.

Key Questions:

What do you notice when you group these objects into twos?

Is there a link between dividing by 2 and halving?

What is different about sharing into two groups and grouping in twos?

Can we write a multiplication sentence as well as a division sentence? What do you notice?

★ Working Towards	★★ Working Within	★★★ Greater Depth
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Task 1 (1) Solve the division problems.

I have 6 carrots altogether.
There are 2 in each group.
There are ___ groups.

I have 8 grapes altogether.
There are 2 in each group.
There are ___ groups.

Group the grapes into pairs.

Group the carrots into pairs.

Laura and Malachi have 8 balloons between them.
They share them equally.
How many balloons does each child get?
There are ___ groups.
There are ___ in each group.

Zach and Rosie have 8 counters in two groups.
They share them equally.
How many counters does each child get?
There are ___ groups.
There are ___ in each group.

Task 1 (2) Solve the division problems.

I have 12 carrots altogether.
There are 2 in each group.
There are ___ groups.

I have 16 grapes altogether.
There are 2 in each group.
There are ___ groups.

Group the grapes into pairs.

Group the carrots into pairs.

Laura and Malachi have 16 balloons between them.
They share them equally.
How many balloons does each child get?
There are ___ groups.
There are ___ in each group.

Zach and Rosie have 20 counters in two groups.
They share them equally.
How many counters does each child get?
There are ___ groups.
There are ___ in each group.

Task 1 (3) Solve the division problems.

There are 20 carrots in a field.
2 pack 12 for my pet rabbit and take the remaining carrots between my two sons and my aunt.
How many carrots do they get each?
Show the calculation you have used.

I made 3 boxes of 2 biscuits.
This makes the same total as the box that makes 6 more than 4.
We then split all of them between us so we have an equal amount. How many biscuits do we have?
Show all of your working out.

I have 42 grapes and give them up. How many grapes do I have?
Show a multiplication and division calculation.

I have 78 grapes and give them up. How many grapes do I have?
Show a multiplication and division calculation.

Laura and Malachi have 24 balloons each. They share them equally between their 2 groups of children. How many balloons does each child get?
There are ___ groups.
There are ___ in each group.

Laura and Malachi have 18 counters in two groups.
They share them equally.
How many counters does each child get?
There are ___ groups.
There are ___ in each group.

Children can cut out the word problems and show how they use grouping by drawing dots and circling them or by sharing- drawing 2 circles and sharing amounts. Children on this sheet divide by small numbers and see the link between division and halving.

Children can cut out the word problems and show how they use grouping by drawing dots and circling them or by sharing- drawing 2 circles and sharing amounts. Children on this sheet divide by larger numbers and see the link between division and halving.

Children on this sheet are efficient at dividing by 2. They solve more complex problems which require more than 1 step to solve. Children rely on place value to divide mentally the tens and ones by 2. E.g. half of 36- half of 30 is 15, half of 6 is 3, so half of 36 is 18.

Reasoning & Problem Solving

Task 2 (1) Reasoning & Problem Solving

I have 12p.
I divide it equally between 2 friends.
How much will they get each?
I have 12 in 2p coins.
How many 2p coins do I have?
Consider the two questions above.
What is the same and what is different?

Malachi and Rosie have some counters.
Malachi shares his counters into 2 equal groups.
He has 10 in each group.
Rosie groups her counters in twos.
She has 12 groups.
Who has more counters and by how many?
How did you work it out?

Zach has shared some grapes equally between two friends.

Each friend receives fewer than 10 grapes.
Malachi shares his counters into 2 equal groups.
He must have started with...

Task 2 (2) Reasoning & Problem Solving

I have 24p.
I divide it equally between 2 friends.
How much will they get each?
I have 24p in 2p coins.
How many 2p coins do I have?
Consider the two questions above.
What is the same and what is different?

Malachi and Rosie have some counters.
Malachi shares his counters into 2 equal groups.
He has 13 in each group.
Rosie groups her counters in twos.
She has 18 groups.
Who has more counters and by how many?
How did you work it out?

Zach has shared some grapes equally between two friends.

Each friend receives fewer than 10 grapes.
Malachi shares his counters into 2 equal groups.
He must have started with...

Task 2 (3) Reasoning & Problem Solving

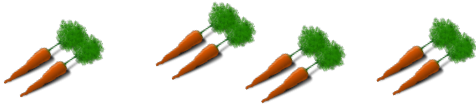
I have 32p.
I divide it equally between 2 friends.
How much will they get each?
I have 32p in 2p coins.
How many 2p coins do I have?
Consider the two questions above.
What is the same and what is different?

Malachi and Rosie have some counters.
Malachi shares his counters into 2 equal groups.
He has 23 in each group.
Rosie groups her counters in twos.
She has 37 groups.
Who has more counters and by how many?
How did you work it out?

Zach has shared some grapes equally between two friends.

Each friend receives fewer than 15 grapes.
Malachi shares his counters into 2 equal groups.
He must have started with...

Solve the division problems.



I have ___ carrots altogether.

There are ___ in each group.

There are ___ groups.

$$\square \div \square = \square$$

$$\square \times \square = \square$$



I have ___ cubes altogether.

There are ___ in each group.

There are ___ groups.

$$\square \div \square = \square$$

$$\square \times \square = \square$$

Group the gloves into pairs.



$$\square \div \square = \square \quad \square \times \square = \square$$

Group the socks into pairs.



$$\square \div \square = \square \quad \square \times \square = \square$$

Leanna and Malachi have 6 lollipops between them.

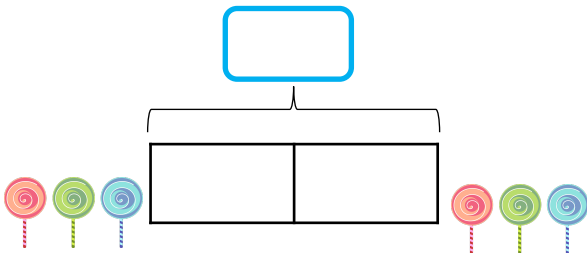
They share them equally.

How many lollipops does each child get?

There are ___ lollipops altogether.

There are ___ groups.

There are ___ in each group.



$$\square \div \square = \square \quad \square \times \square = \square$$

Zach and Rosie have 4 strawberries between them.

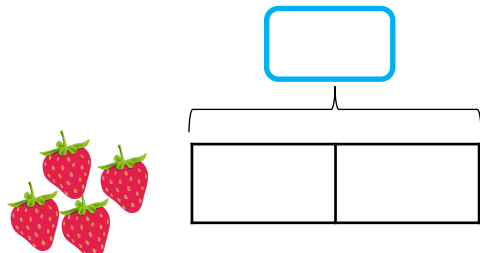
They share them equally.

How many strawberries does each child get?

There are ___ strawberries altogether.

There are ___ groups.

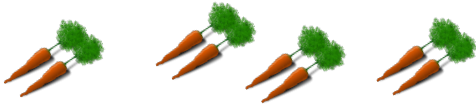
There are ___ in each group.



$$\square \div \square = \square \quad \square \times \square = \square$$



Solve the division problems.

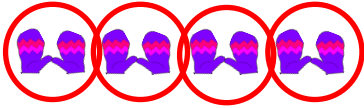
I have 8 carrots altogether.There are 2 in each group.There are 4 groups.

$$\begin{array}{l} 8 \div 2 = 4 \\ 4 \times 2 = 8 \end{array}$$

I have 10 cubes altogether.There are 2 in each group.There are 5 groups.

$$\begin{array}{l} 10 \div 2 = 5 \\ 5 \times 2 = 10 \end{array}$$

Group the gloves into pairs.



$$8 \div 2 = 4 \quad 4 \times 2 = 8$$

Group the socks into pairs.

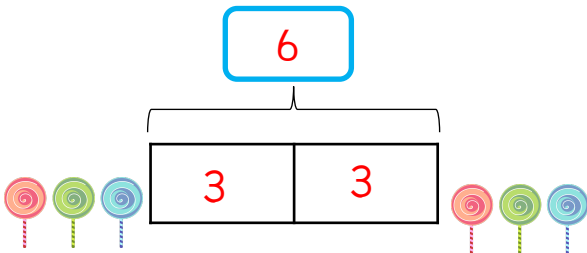


$$6 \div 2 = 3 \quad 3 \times 2 = 6$$

Leanna and Malachi have 6 lollipops between them.

They share them equally.

How many lollipops does each child get?

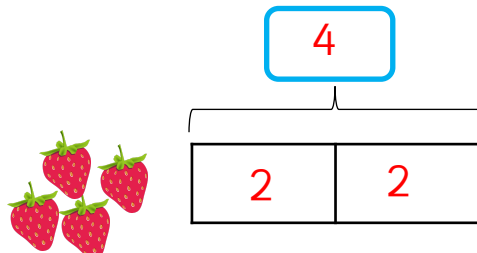
There are 6 lollipops altogether.There are 2 groups.There are 3 in each group.

$$6 \div 3 = 2 \quad 2 \times 3 = 6$$

Zach and Rosie have 4 strawberries between them.

They share them equally.

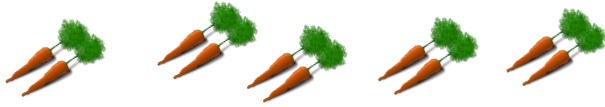
How many strawberries does each child get?

There are 4 strawberries altogether.There are 2 groups.There are 2 in each group.

$$4 \div 2 = 2 \quad 2 \times 2 = 4$$



Solve the division problems.



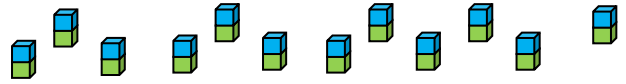
I have ____ carrots altogether.

There are ____ in each group.

There are ____ groups.

$$\square \div \square = \square$$

$$\square \times \square = \square$$



I have ____ cubes altogether.

There are ____ in each group.

There are ____ groups.

$$\square \div \square = \square$$

$$\square \times \square = \square$$

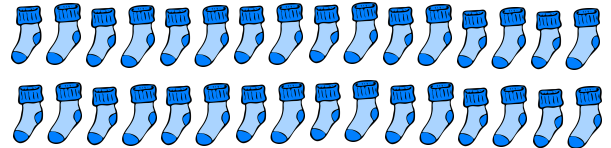
Group the gloves into pairs.



$$\square \div \square = \square$$

$$\square \times \square = \square$$

Group the socks into pairs.



$$\square \div \square = \square$$

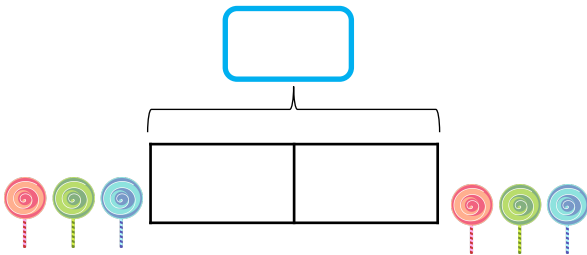
$$\square \times \square = \square$$

Leanna and Malachi have 14 lollipops between them.
They share them equally.
How many lollipops does each child get?

There are ____ lollipops altogether.

There are ____ groups.

There are ____ in each group.



$$\square \div \square = \square$$

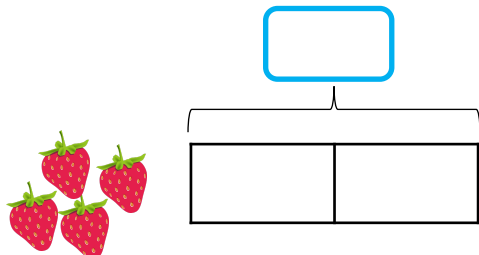
$$\square \times \square = \square$$

Zach and Rosie have 20 strawberries between them.
They share them equally.
How many strawberries does each child get?

There are ____ strawberries altogether.

There are ____ groups.

There are ____ in each group.

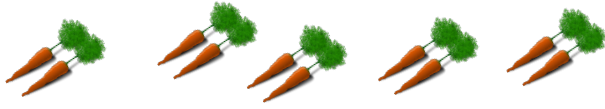


$$\square \div \square = \square$$

$$\square \times \square = \square$$



Solve the division problems.

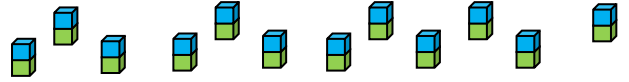


I have 10 carrots altogether.

There are 2 in each group.

There are 5 groups.

$$\begin{array}{l} 10 \div 2 = 5 \\ 2 \times 5 = 10 \end{array}$$



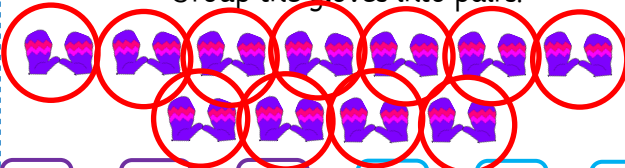
I have 24 cubes altogether.

There are 2 in each group.

There are 12 groups.

$$\begin{array}{l} 24 \div 2 = 12 \\ 2 \times 12 = 24 \end{array}$$

Group the gloves into pairs.



$$\begin{array}{l} 22 \div 2 = 11 \\ 11 \times 2 = 22 \end{array}$$

Group the socks into pairs.



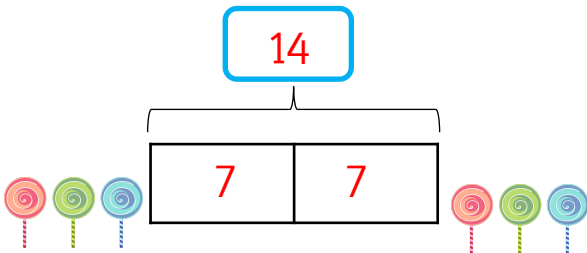
$$\begin{array}{l} 32 \div 2 = 16 \\ 16 \times 2 = 32 \end{array}$$

Leanna and Malachi have 14 lollipops between them.
They share them equally.
How many lollipops does each child get?

There are 14 lollipops altogether.

There are 2 groups.

There are 7 in each group.



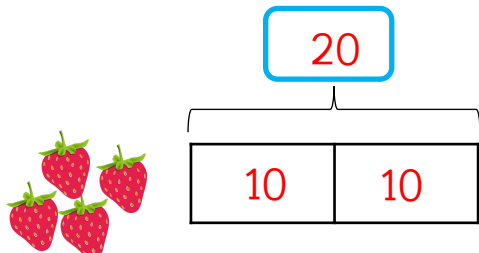
$$\begin{array}{l} 14 \div 2 = 7 \\ 7 \times 2 = 14 \end{array}$$

Zach and Rosie have 20 strawberries between them.
They share them equally.
How many strawberries does each child get?

There are 20 strawberries altogether.

There are 2 groups.

There are 10 in each group.



$$\begin{array}{l} 20 \div 2 = 10 \\ 10 \times 2 = 20 \end{array}$$

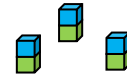
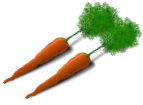


Solve the division problems.

There are 32 carrots in a field.
I pick 12 for my pet rabbit and split the remaining
carrots between my mum and my aunt.

How many carrots do they get each?

Show the calculation you have used.



I make 3 towers of 2 blocks.
Tia makes the same tower as me but makes 4
more than me.

We then split all of them between us so we have
an equal amount. How many blocks do we have?

Show all the steps you used.



I have 92 gloves and want to pair
them up. How many pairs will I
have?



Show a multiplication and
division calculation.

$$\square \div \square = \square \quad \square \times \square = \square$$



I have 78 gloves and want to pair
them up. How many pairs will I
have?



Show a multiplication and division
calculation.

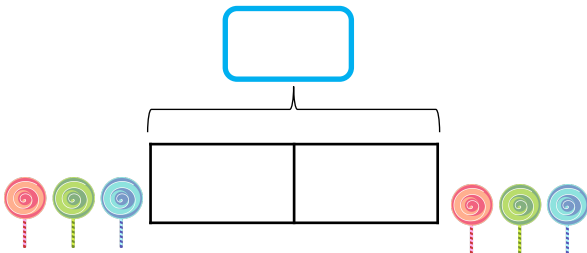
$$\square \div \square = \square \quad \square \times \square = \square$$

Leanna, Tia and Malachi have 24 lollipops each.
They share them equally between their 2 younger
cousins. How many lollipops will each cousin get?

There are ____ lollipops altogether.

There are ____ groups.

There are ____ in each group.



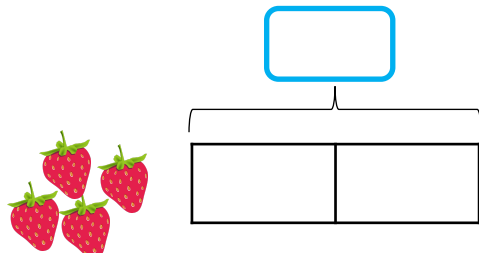
$$\square \div \square = \square \quad \square \times \square = \square$$

Leanna, Tia and Malachi have 18 strawberries each.
They share them equally between their 2 younger
cousins. How many strawberries will each cousin get?

There are ____ strawberries altogether.

There are ____ groups.

There are ____ in each group.



$$\square \div \square = \square \quad \square \times \square = \square$$



Solve the division problems.

There are 32 carrots in a field.
I pick 12 for my pet rabbit and split the remaining
carrots between my mum and my aunt.

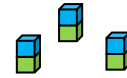
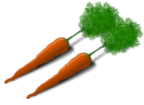
How many carrots do they get each?

10

Show the calculation you have used.

$$32 - 12 = 20$$

$$20 \div 2 = 10$$



I make 3 towers of 2 blocks.
Tia makes the same tower as me but makes 4
more than me.

We then split all of them between us so we have
an equal amount. How many blocks do we have?

10

Show all of the steps you used.

$$20 \div 2 = 10$$



I have 92 gloves and want to pair
them up. How many pairs will I
have?



Show a multiplication and
division calculation.

$$92 \div 2 = 46 \quad 46 \times 2 = 92$$



I have 78 gloves and want to pair
them up. How many pairs will I
have?



Show a multiplication and division
calculation.

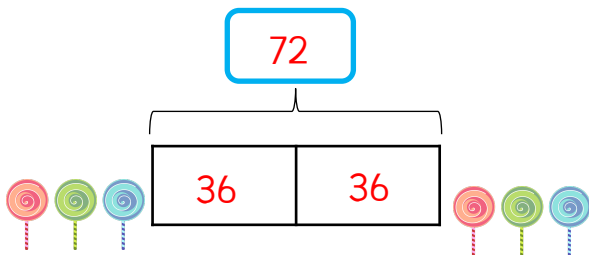
$$78 \div 2 = 39 \quad 39 \times 2 = 78$$

Leanna, Tia and Malachi have 24 lollipops each.
They share them equally between their 2 younger
cousins. How many lollipops will each cousin get?

There are 72 lollipops altogether.

There are 2 groups.

There are 36 in each group.



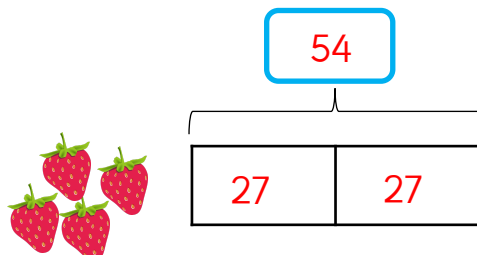
$$72 \div 2 = 36 \quad 36 \times 2 = 72$$

Leanna, Tia and Malachi have 18 strawberries each.
They share them equally between their 2 younger
cousins. How many strawberries will each cousin get?

There are 54 strawberries altogether.

There are 2 groups.

There are 27 in each group.



$$54 \div 2 = 27 \quad 27 \times 2 = 54$$



I have 12p.
I divide it equally between 2 friends.
How much will they get each?

I have 12 in 2p coins.
How many 2p coins do I have?

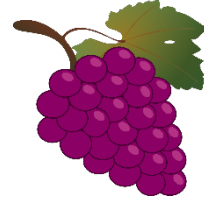
Consider the two questions above.
What is the same and what is different?

Malachi and Rosie have some counters.
Malachi shares his counters into 2 equal groups.

He has 10 in each group.
Rosie groups her counters in twos.
She has 12 groups.

Who has more counters and by how many?
How did you work it out?

Zach has shared some grapes equally
between two friends.



Each friend receives fewer than 10 grapes.

Complete the sentence to describe the
number of grapes Zach started with.

He must have started with...



I have 12p.
I divide it equally between 2 friends.
How much will they get each?

I have 12 in 2p coins.
How many 2p coins do I have?

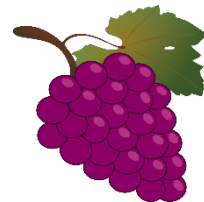
Consider the two questions above.
What is the same and what is different?

Malachi and Rosie have some counters.
Malachi shares his counters into 2 equal groups.

He has 10 in each group.
Rosie groups her counters in twos.
She has 12 groups.

Who has more counters and by how many?
How did you work it out?

Zach has shared some grapes equally
between two friends.



Each friend receives fewer than 10 grapes.

Complete the sentence to describe the
number of grapes Zach started with.

He must have started with...



I have 12p.

I divide it equally between 2 friends.

How much will they get each?

I have 12 in 2p coins.

How many 2p coins do I have?

Consider the two questions above.

What is the same and what is different?

*The calculation is the same in both.
In the first question we are sharing, whereas in the
second question we are grouping.*

Malachi and Rosie have some counters.

Malachi shares his counters into 2 equal groups.

He has 10 in each group.

Rosie groups her counters in twos.

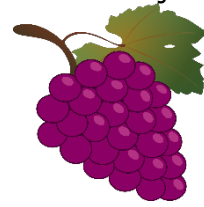
She has 12 groups.

Who has more counters and by how many?

How did you work it out?

*Malachi has 20 counters. Rosie has 24 counters.
Rosie has 4 more. Children could have compared 10
and 12 and realised they could calculate 2×2 .*

Zach has shared some grapes equally
between two friends.



Each friend receives fewer than 10 grapes.

Complete the sentence to describe the
number of grapes Zach started with.

He must have started with...

*Possible answer:
He must have started with an even number of grapes.*



I have 12p.

I divide it equally between 2 friends.

How much will they get each?

I have 12 in 2p coins.

How many 2p coins do I have?

Consider the two questions above.

What is the same and what is different?

*The calculation is the same in both.
In the first question we are sharing, whereas in the
second question we are grouping.*

Malachi and Rosie have some counters.

Malachi shares his counters into 2 equal groups.

He has 10 in each group.

Rosie groups her counters in twos.

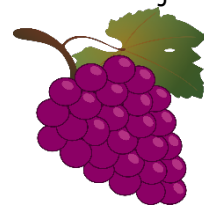
She has 12 groups.

Who has more counters and by how many?

How did you work it out?

*Malachi has 20 counters. Rosie has 24 counters.
Rosie has 4 more. Children could have compared 10
and 12 and realised they could calculate 2×2 .*

Zach has shared some grapes equally
between two friends.



Each friend receives fewer than 10 grapes.

Complete the sentence to describe the
number of grapes Zach started with.

He must have started with...

*Possible answer:
He must have started with an even number of grapes.*



I have 24p.
I divide it equally between 2 friends.
How much will they get each?

I have 24p in 2p coins.
How many 2p coins do I have?

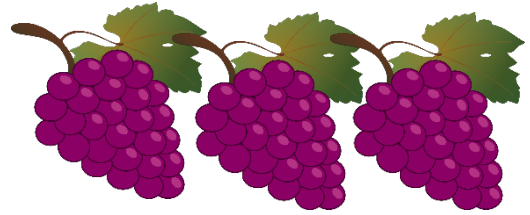
Consider the two questions above.
What is the same and what is different?

Malachi and Rosie have some counters.
Malachi shares his counters into 2 equal groups.

He has 13 in each group.
Rosie groups her counters in twos.
She has 18 groups.

Who has more counters and by how many?
How did you work it out?

Zach has shared some grapes equally
between two friends.



Each friend receives fewer than 40 grapes.

Complete the sentences to describe the
number of grapes Zach started with.

He must have started with...

He could have started with...



I have 24p.
I divide it equally between 2 friends.
How much will they get each?

I have 24p in 2p coins.
How many 2p coins do I have?

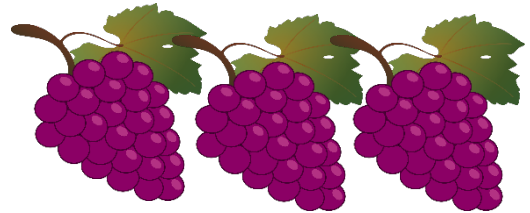
Consider the two questions above.
What is the same and what is different?

Malachi and Rosie have some counters.
Malachi shares his counters into 2 equal groups.

He has 13 in each group.
Rosie groups her counters in twos.
She has 18 groups.

Who has more counters and by how many?
How did you work it out?

Zach has shared some grapes equally
between two friends.



Each friend receives fewer than 40 grapes.

Complete the sentences to describe the
number of grapes Zach started with.

He must have started with...

He could have started with...



I have 24p.

I divide it equally between 2 friends.

How much will they get each?

I have 24p in 2p coins.

How many 2p coins do I have?

Consider the two questions above.

What is the same and what is different?

The calculation is the same in both.

In the first question we are sharing, whereas in the second question we are grouping.

Malachi and Rosie have some counters.

Malachi shares his counters into 2 equal groups.

He has 13 in each group.

Rosie groups her counters in twos.

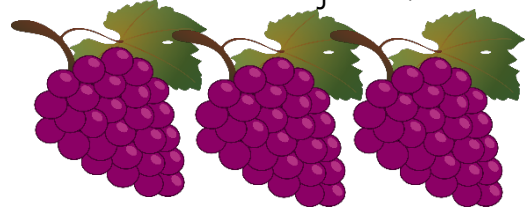
She has 18 groups.

Who has more counters and by how many?

How did you work it out?

Malachi has 26 counters. Rosie has 36 counters. Rosie has 10 more. Children could have compared 13 and 18 and realised they could calculate 2×5 .

Zach has shared some grapes equally between two friends.



Each friend receives fewer than 40 grapes.

Complete the sentences to describe the number of grapes Zach started with.

He must have started with...

He could have started with...

Possible answer:

He must have started with an even number of grapes.

He could have started with 10 grapes.



I have 24p.

I divide it equally between 2 friends.

How much will they get each?

I have 24p in 2p coins.

How many 2p coins do I have?

Consider the two questions above.

What is the same and what is different?

The calculation is the same in both.

In the first question we are sharing, whereas in the second question we are grouping.

Malachi and Rosie have some counters.

Malachi shares his counters into 2 equal groups.

He has 13 in each group.

Rosie groups her counters in twos.

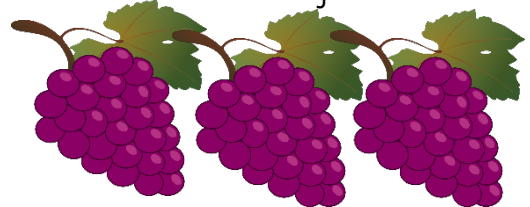
She has 18 groups.

Who has more counters and by how many?

How did you work it out?

Malachi has 26 counters. Rosie has 36 counters. Rosie has 10 more. Children could have compared 13 and 18 and realised they could calculate 2×5 .

Zach has shared some grapes equally between two friends.



Each friend receives fewer than 40 grapes.

Complete the sentences to describe the number of grapes Zach started with.

He must have started with...

He could have started with...

Possible answer:

He must have started with an even number of grapes.

He could have started with 10 grapes.



I have 32p.
I divide it equally between 2 friends.
How much will they get each?

I have 32p in 2p coins.
How many 2p coins do I have?

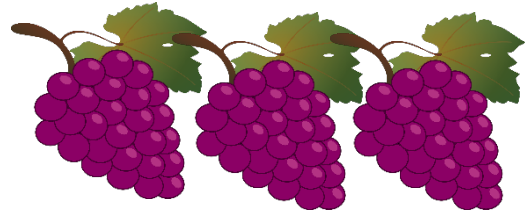
Consider the two questions above.
What is the same and what is different?

Malachi and Rosie have some counters.
Malachi shares his counters into 2 equal groups.

He has 23 in each group.
Rosie groups her counters in twos.
She has 37 groups.

Who has more counters and by how many?
How did you work it out?

Zach has shared some grapes equally
between two friends.



Each friend receives fewer than 85 grapes.

Complete the sentences to describe the
number of grapes Zach started with.

He must have started with...

He could have started with...

He can't have started with...



I have 32p.
I divide it equally between 2 friends.
How much will they get each?

I have 32p in 2p coins.
How many 2p coins do I have?

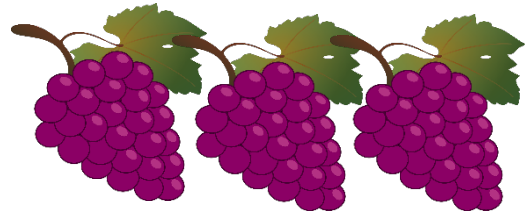
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Rosie groups her counters in twos.

She has 37 groups.
Who has more counters and by how many?
How did you work it out?

Zach has shared some grapes equally
between two friends.



Each friend receives fewer than 85 grapes.

Complete the sentences to describe the
number of grapes Zach started with.

He must have started with...

He could have started with...

He can't have started with...



I have 32p.

I divide it equally between 2 friends.

How much will they get each?

I have 32p in 2p coins.

How many 2p coins do I have?

Consider the two questions above.

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The calculation is the same in both.

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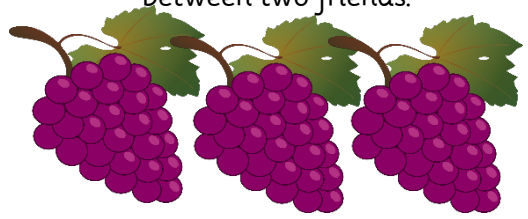
She has 37 groups.

Who has more counters and by how many?

How did you work it out?

Malachi has 46 counters. Rosie has 74 counters. Rosie has 28 more. Children could have compared 23 and 37 and realised they could calculate 2×14 .

Zach has shared some grapes equally between two friends.



Each friend receives fewer than 85 grapes.

Complete the sentences to describe the number of grapes Zach started with.

He must have started with...

He could have started with...

He can't have started with...

Possible answer:

He must have started with an even number of grapes.

He could have started with 25 grapes.

He can't have started with 200 grapes.



I have 32p.

I divide it equally between 2 friends.

How much will they get each?

I have 32p in 2p coins.

How many 2p coins do I have?

Consider the two questions above.

What is the same and what is different?

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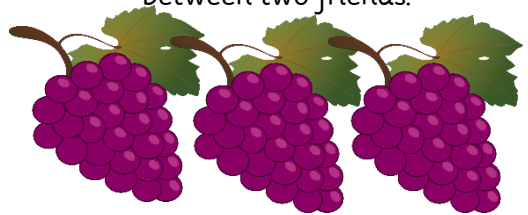
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Possible answer:

He must have started with an even number of grapes.

He could have started with 25 grapes.

He can't have started with 200 grapes.