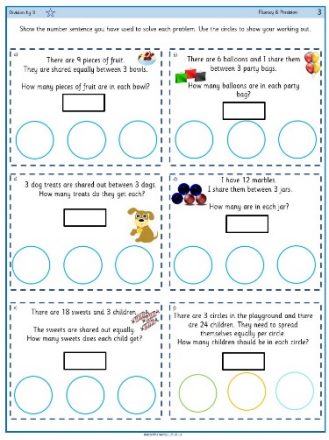
Lesson 12 – Division by 3 - Word Problems

NC Objective:	Resources needed:	Vocabulary:
Recall and use multiplication and division facts for the 3,4 and 8 multiplication tables.	Differentiated Sheets Teaching Slides Concrete objects	Multiplication, division, multiples, equal groups, inverse, share, group

Children explore dividing by 3 through sharing into three equal groups and grouping in threes.
They use concrete and pictorial representations and use their knowledge of the inverse to check their answers.

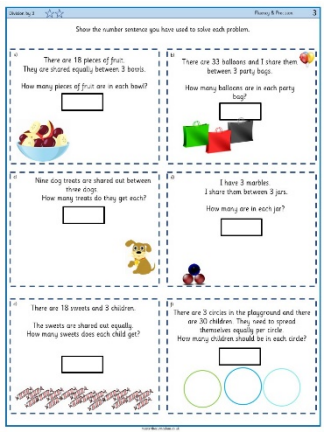
Key Questions:
Can you put the counters into groups of three?
Can you share the number into three groups?
What is the difference between sharing and grouping?

★ Working Towards



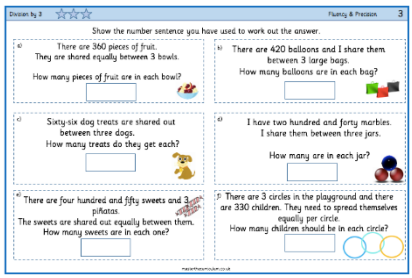
Children have word problems to solve which involve dividing by 3. They use the circles provided to share out the quantity.
They can then write the division question beside the word problem.

★★ Working Within



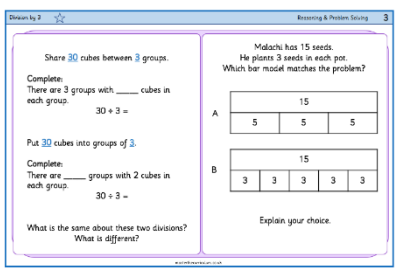
Children have word problems to solve which involve dividing by 3. They cur out each word problem and show their working out and write the number sentence used.

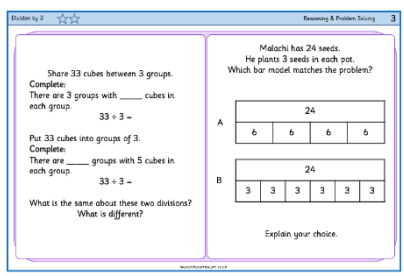
★★★ Greater Depth

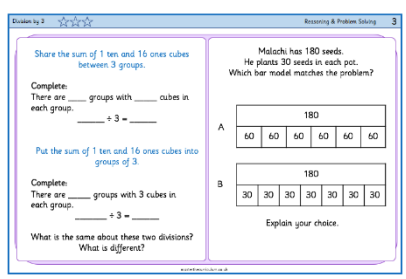


Children on this sheet are fluent in dividing by 3. They use known facts to solve the division questions. Children also go outside the multiplication facts to 3.

Reasoning & Problem Solving







Show the number sentence you have used to solve each problem. Use the circles to show your working out.

a)

There are 9 pieces of fruit.
They are shared equally between 3 bowls.

How many pieces of fruit are in each bowl?

b)

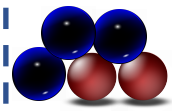
There are 6 balloons and I share them between 3 party bags.

How many balloons are in each party bag?

c)

3 dog treats are shared out between 3 dogs.
How many treats do they get each?

d)

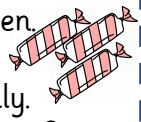


I have 12 marbles.
I share them between 3 jars.

How many are in each jar?

e)

There are 18 sweets and 3 children.



The sweets are shared out equally.
How many sweets does each child get?

f)

There are 3 circles in the playground and there are 24 children. They need to spread themselves equally per circle.
How many children should be in each circle?

Show the number sentence you have used to solve each problem. Use the circles to show your working out.

a)

There are 9 pieces of fruit.
They are shared equally between 3 bowls.

How many pieces of fruit are in each bowl?

3

b)

There are 6 balloons and I share them between 3 party bags.

How many balloons are in each party bag?

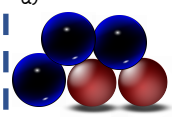
2

c)

3 dog treats are shared out between 3 dogs.
How many treats do they get each?

1

d)



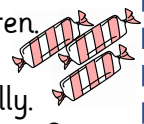
I have 12 marbles.
I share them between 3 jars.

How many are in each jar?

4

e)

There are 18 sweets and 3 children.



The sweets are shared out equally.
How many sweets does each child get?

6

f)

There are 3 circles in the playground and there are 24 children. They need to spread themselves equally per circle.
How many children should be in each circle?

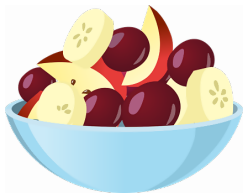
8

Show the number sentence you have used to solve each problem.

a)

There are 18 pieces of fruit.
They are shared equally between 3 bowls.

How many pieces of fruit are in each bowl?



b)

There are 33 balloons and I share them between 3 party bags.

How many balloons are in each party bag?

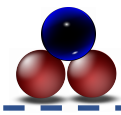
c)

Nine dog treats are shared out between three dogs.
How many treats do they get each?

d)

I have 3 marbles.
I share them between 3 jars.

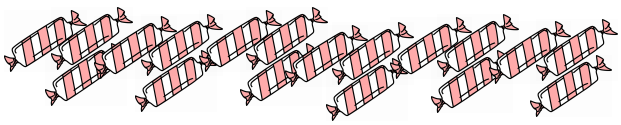
How many are in each jar?



e)

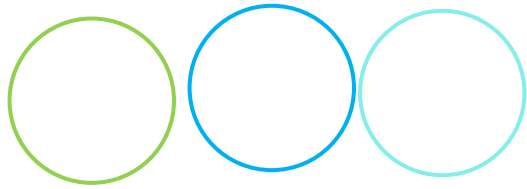
There are 18 sweets and 3 children.

The sweets are shared out equally.
How many sweets does each child get?



f)

There are 3 circles in the playground and there are 30 children. They need to spread themselves equally per circle.
How many children should be in each circle?



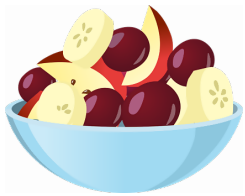
Show the number sentence you have used to solve each problem.

a)

There are 18 pieces of fruit.
They are shared equally between 3 bowls.

How many pieces of fruit are in each bowl?

6



b)

There are 33 balloons and I share them between 3 party bags.

How many balloons are in each party bag?

11

c)

Nine dog treats are shared out between three dogs.
How many treats do they get each?

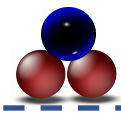
3

d)

I have 3 marbles.
I share them between 3 jars.

How many are in each jar?

1

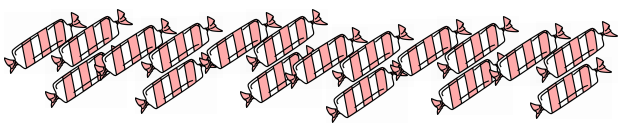


e)

There are 18 sweets and 3 children.

The sweets are shared out equally.
How many sweets does each child get?

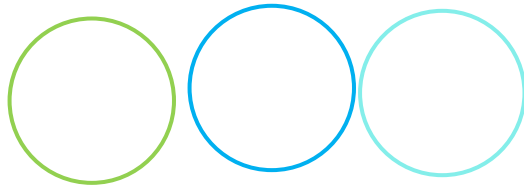
6



f)

There are 3 circles in the playground and there are 30 children. They need to spread themselves equally per circle.
How many children should be in each circle?

10



Show the number sentence you have used to work out the answer.

a) There are 360 pieces of fruit.
They are shared equally between 3 bowls.

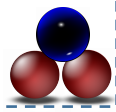
How many pieces of fruit are in each bowl?

b) There are 420 balloons and I share them between 3 large bags.
How many balloons are in each bag?

c) Sixty-six dog treats are shared out between three dogs.
How many treats do they get each?

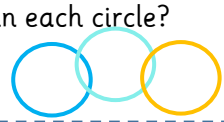
d) I have two hundred and forty marbles.
I share them between three jars.

How many are in each jar?



e) There are four hundred and fifty sweets and 3 pinatas.
The sweets are shared out equally between them.
How many sweets are in each one?

f) There are 3 circles in the playground and there are 330 children. They need to spread themselves equally per circle.
How many children should be in each circle?



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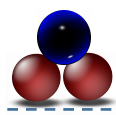

e) There are four hundred and fifty sweets and 3 pinatas.
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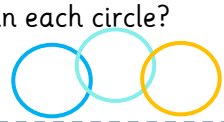


Show the number sentence you have used to work out the answer.

a) There are 360 pieces of fruit.
They are shared equally between 3 bowls.

How many pieces of fruit are in each bowl?

120

b) There are 420 balloons and I share them between 3 large bags.
How many balloons are in each bag?

140

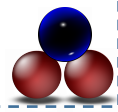
c) Sixty-six dog treats are shared out between three dogs.
How many treats do they get each?

22

d) I have two hundred and forty marbles.
I share them between three jars.

How many are in each jar?

80

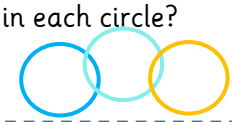


e) There are four hundred and fifty sweets and 3 pinatas.
The sweets are shared out equally between them.
How many sweets are in each one?

150

f) There are 3 circles in the playground and there are 330 children. They need to spread themselves equally per circle.
How many children should be in each circle?

110



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d) I have two hundred and forty marbles.
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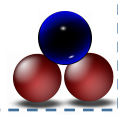
80



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f) There are 3 circles in the playground and there are 330 children. They need to spread themselves equally per circle.
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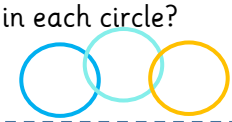
110



Share 30 cubes between 3 groups.

Complete:
There are 3 groups with _____ cubes in each group.

30 ÷ 3 =

Put 30 cubes into groups of 3.

Complete:
There are _____ groups with 3 cubes in each group.

30 ÷ 3 =

What is the same about these two divisions?
What is different?

Malachi has 15 seeds.
He plants 3 seeds in each pot.
Which bar model matches the problem?

A

15		
5	5	5

B

15				
3	3	3	3	3

Explain your choice.

Division by 3 ☆ Reasoning & Problem Solving 3

Share 30 cubes between 3 groups.

Complete:
There are 3 groups with _____ cubes in each group.

30 ÷ 3 =

Put 30 cubes into groups of 3.

Complete:
There are _____ groups with 3 cubes in each group.

30 ÷ 3 =

What is the same about these two divisions?
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He plants 3 seeds in each pot.
Which bar model matches the problem?

A

15		
5	5	5

B

15				
3	3	3	3	3

Explain your choice.

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Share 30 cubes between 3 groups.

Complete:

There are 3 groups with 10 cubes in each group.

$30 \div 3 = 10$

Put 15 cubes into groups of 3.

Complete:

There are 5 groups with 3 cubes in each group.

$30 \div 3 = 10$

What is the same about these two divisions?
What is different?

The number sentences are both the same.
The numbers in each number sentence mean different things.
In the first question, the '3' means the number of groups the cubes are shared into because the cubes are being shared.
In the second question, the '3' means the size of each group.

Malachi has 15 seeds.
He plants 3 seeds in each pot.
Which bar model matches the problem?

A

15		
5	5	5

B

15				
3	3	3	3	3

Explain your choice.

Bar model B matches the problem because Malachi plants 3 seeds in each pot, therefore he will have 5 groups (pots), each with 3 seeds.

Division by 3 ☆ Answers Reasoning & Problem Solving 3

Share 30 cubes between 3 groups.

Complete:

There are 3 groups with 10 cubes in each group.

$30 \div 3 = 10$

Put 15 cubes into groups of 3.

Complete:

There are 5 groups with 3 cubes in each group.

$30 \div 3 = 10$

What is the same about these two divisions?
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The number sentences are both the same.
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Malachi has 15 seeds.
He plants 3 seeds in each pot.
Which bar model matches the problem?

A

15		
5	5	5

B

15				
3	3	3	3	3

Explain your choice.

Bar model B matches the problem because Malachi plants 3 seeds in each pot, therefore he will have 5 groups (pots), each with 3 seeds.

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Share 33 cubes between 3 groups.

Complete:

There are 3 groups with _____ cubes in each group.

33 ÷ 3 =

Put 33 cubes into groups of 3.

Complete:

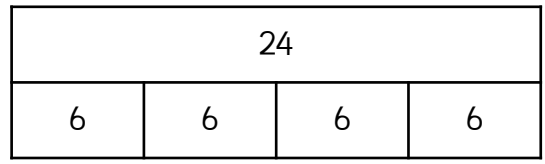
There are _____ groups with 3 cubes in each group.

33 ÷ 3 =

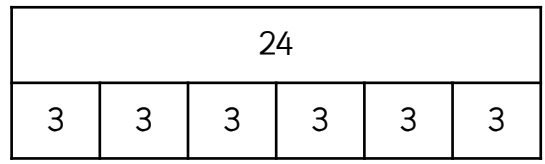
What is the same about these two divisions?
What is different?

Malachi has 24 seeds.
He plants 3 seeds in each pot.
Which bar model matches the problem?

A



B



Explain your choice.

Division by 3 ☆☆ Reasoning & Problem Solving 3

Share 33 cubes between 3 groups.

Complete:

There are 3 groups with _____ cubes in each group.

33 ÷ 3 =

Put 33 cubes into groups of 3.

Complete:

There are _____ groups with 3 cubes in each group.

33 ÷ 3 =

What is the same about these two divisions?
What is different?

Malachi has 24 seeds.
He plants 3 seeds in each pot.
Which bar model matches the problem?

A

B

Explain your choice.

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Share 33 cubes between 3 groups.

Complete:

There are 33 groups with 11 cubes in each group.

$33 \div 3 = 11$

Put 33 cubes into groups of 3.

Complete:

There are 11 groups with 3 cubes in each group.

$33 \div 3 = 11$

What is the same about these two divisions?
What is different?

The number sentences are both the same.
The numbers in each number sentence mean different things.
In the first question, the '3' means the number of groups the cubes are shared into because the cubes are being shared.
In the second question, the '3' means the size of each group.

Malachi has 24 seeds.
He plants 3 seeds in each pot.
Which bar model matches the problem?

A

24			
6	6	6	6

B

24					
3	3	3	3	3	3

Explain your choice.

Bar model B matches the problem because Malachi plants 3 seeds in each pot, therefore he will have 6 groups (pots), each with 3 seeds.

Division by 3 ☆☆ Answers Reasoning & Problem Solving 3

Share 33 cubes between 3 groups.

Complete:

There are 33 groups with 11 cubes in each group.

$33 \div 3 = 11$

Put 33 cubes into groups of 3.

Complete:

There are 11 groups with 3 cubes in each group.

$33 \div 3 = 11$

What is the same about these two divisions?
What is different?

The number sentences are both the same.
The numbers in each number sentence mean different things.
In the first question, the '3' means the number of groups the cubes are shared into because the cubes are being shared.
In the second question, the '3' means the size of each group.

Malachi has 24 seeds.
He plants 3 seeds in each pot.
Which bar model matches the problem?

A

24			
6	6	6	6

B

24					
3	3	3	3	3	3

Explain your choice.

Bar model B matches the problem because Malachi plants 3 seeds in each pot, therefore he will have 6 groups (pots), each with 4 seeds.

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Share the sum of 2 tens and 16 ones cubes between 3 groups.

Complete:
There are _____ groups with _____ cubes in each group.

_____ ÷ 3 = _____

Put the sum of 2 tens and 16 ones cubes into groups of 3.

Complete:
There are _____ groups with 3 cubes in each group.

_____ ÷ 3 = _____

What is the same about these two divisions?
What is different?

Malachi has 180 seeds.
He plants 30 seeds in each pot.
Which bar model matches the problem?

A

180					
60	60	60	60	60	60

B

180						
30	30	30	30	30	30	30

Explain your choice.

Division by 3 ☆☆☆ Reasoning & Problem Solving 3

Share the sum of 2 tens and 16 ones cubes between 3 groups.

Complete:
There are _____ groups with _____ cubes in each group.

_____ ÷ 3 = _____

Put the sum of 2 tens and 16 ones cubes into groups of 3.

Complete:
There are _____ groups with 3 cubes in each group.

_____ ÷ 3 = _____

What is the same about these two divisions?
What is different?

Malachi has 180 seeds.
He plants 3 seeds in each pot.
Which bar model matches the problem?

A

180					
60	60	60	60	60	60

B

180						
30	30	30	30	30	30	30

Explain your choice.

Share the sum of 2 tens and 16 ones cubes between 3 groups.

Complete:

There are 3 groups with 12 cubes in each group.

36 ÷ 3 = 12

Put the sum of 2 tens and 16 ones cubes into groups of 3.

Complete:

There are 12 groups with 3 cubes in each group.

36 ÷ 3 = 12

The number sentences are both the same.
The numbers in each number sentence mean different things.
In the first question, the '3' means the number of groups the cubes are shared into because the cubes are being shared.
In the second question, the '3' means the size of each group.

Malachi has 180 seeds.
He plants 30 seeds in each pot.
Which bar model matches the problem?

A

180					
60	60	60	60	60	60

B

180						
30	30	30	30	30	30	30

Explain your choice.

Neither bar model matches the problem.
There should be 6 parts of 30 beneath 180.

Division by 3 ☆☆☆ Answers Reasoning & Problem Solving 3

Share the sum of 2 tens and 16 ones cubes between 3 groups.

Complete:

There are 3 groups with 12 cubes in each group.

36 ÷ 3 = 12

Put the sum of 2 tens and 16 ones cubes into groups of 3.

Complete:

There are 12 groups with 3 cubes in each group.

36 ÷ 3 = 12

The number sentences are both the same.
The numbers in each number sentence mean different things.
In the first question, the '4' means the number of groups the cubes are shared into because the cubes are being shared.
In the second question, the '4' means the size of each group.

Malachi has 180 seeds.
He plants 30 seeds in each pot.
Which bar model matches the problem?

A

180					
60	60	60	60	60	60

B

180						
30	30	30	30	30	30	30

Explain your choice.

Neither bar model matches the problem.
There should be 6 parts of 30 beneath 180.

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