

Lesson 6 – Find a Quarter

NC Objective:

recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ of a length, shape, set of objects or quantity

Resources needed:

Worksheet

Teaching Slides

Objects e.g. cubes, for support

Vocabulary:

Whole, part, half, quarter, quantity, equal, unequal, more, less

Children will be learning to find one quarter. They will compare the difference between one half and one quarter. Children will solve problems related to quarters of shapes and quantities.

Key questions:

What is the whole? What is a half? What is a quarter? Can you circle a quarter in a different way?

How do you know if you have found $\frac{1}{4}$? What do you notice about half of 12 and one quarter of 12? Can you explain what has happened? If a quarter is _____, then the whole is _____.



Working Towards

Find a Quarter ☆☆☆ Reasoning & Problem Solving 1

Which two shapes have been divided into quarters (4 equal parts)?

Share (draw) 8 pencils equally into 4 pots.

What is $\frac{1}{4}$ of 8?

What is $\frac{1}{4}$ of 12?

Draw a circle to show that $\frac{1}{4}$ of 24 is 6.

Complete the table:

Number	$\frac{1}{4}$ of number	$\frac{1}{4}$ of number
4	2	1
8		
20		
12		



Working Within

Find a Quarter ☆☆☆ Reasoning & Problem Solving 1

Which two shapes have been divided into quarters?

Share (draw) 8 pencils equally into 4 pots.

What is $\frac{1}{4}$ of 8?

What is $\frac{1}{4}$ of 12?

Use the bar model to work out $\frac{1}{4}$ of 12.

$\frac{1}{4}$ of 12 is _____

Draw a circle to show $\frac{1}{4}$ of 24.

Complete the table:

Number	$\frac{1}{4}$ of number	$\frac{1}{4}$ of number
16	8	
4		2
20		
12		



Greater Depth

Find a Quarter ☆☆☆ Reasoning & Problem Solving 1

Find three ways to divide these shapes into quarters.

There are 4 pots. 16 pencils are shared equally into them.

How many pencils are in each pot?

What is $\frac{1}{4}$ of 16?

What is $\frac{1}{4}$ of 16?

Complete the bar model. What whole number is being represented?

3 3 3 3

$\frac{1}{4}$ of _____ is _____

2 people

How many people are there?

Complete the table:

Number	$\frac{1}{4}$ of number	$\frac{1}{4}$ of number
8		
2		
10		
3		

Children demonstrate knowledge of quarters of simple shapes. They move on to finding a quarter of quantities with support given or extra information, e.g., what $\frac{1}{2}$ is. They also complete a table with an example given.

Children demonstrate knowledge of quarters of simple shapes. They move on to finding a quarter of quantities using different methods, e.g., sharing. The numbers to work with are simple but little extra information is given for support.

Children find their own quarters of shapes. They answer questions without the support of pictures. Some questions are multi-step or require children to work back from the $\frac{1}{4}$ to find the original whole. The table question is more complex as children have to find the original number from $\frac{1}{2}$ and $\frac{1}{4}$ information given.

Reasoning & Problem Solving

Find a Quarter ☆☆☆ Reasoning & Problem Solving 1

Zach is climbing a ladder.

Label the arrow that shows $\frac{1}{2}$ way up.

Label the arrow that shows $\frac{1}{4}$ way up.

Use your labelling to complete the sentence: $\frac{1}{4}$ of $\frac{1}{2}$ is _____.

I have $\frac{1}{4}$ of £12. Who has more money? Why?

I have $\frac{1}{4}$ of £30.

Rosie has 12 balloons. Circle $\frac{1}{4}$ of them.

Find a Quarter ☆☆☆ Reasoning & Problem Solving 1

Zach is climbing a ladder.

Draw an arrow to show $\frac{1}{2}$ of the way to the top and label it.

Draw an arrow to show $\frac{1}{4}$ of the way to the top and label it.

Complete the sentence: $\frac{1}{4}$ is $\frac{1}{4}$ of a _____.

I have $\frac{1}{4}$ of £12. Who has more money? Why?

I have $\frac{1}{4}$ of £20.

Rosie thinks she has circled $\frac{1}{4}$ of the balloons. Is she correct? Why?

Find a Quarter ☆☆☆ Reasoning & Problem Solving 1

Zach and Leanna are climbing a ladder.

Leanna is $\frac{1}{4}$ of the way up. Zach is another $\frac{1}{4}$ of the way further up.

Draw arrows and label where they each are.

Fill in the gaps: $\frac{1}{4}$ is _____ of a _____.

I have $\frac{1}{4}$ of £30. Who has more money? Why?

I have $\frac{1}{4}$ of £40.

Rosie thinks she has circled $\frac{1}{4}$ of the balloons. Explain the mistake she has made.

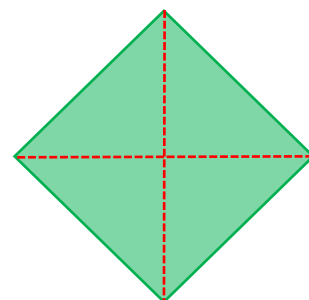
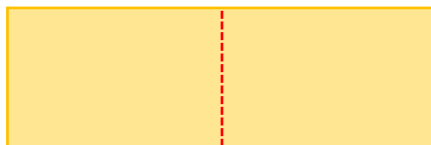
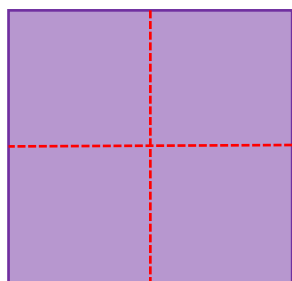
Children use the arrows to help them label $\frac{1}{2}$ and $\frac{1}{4}$. They solve a simple money problem with just $\frac{1}{4}$ (no converting). They identify $\frac{1}{4}$ of the balloons.

Children draw arrows and label $\frac{1}{2}$ and $\frac{1}{4}$. They solve a money problem with $\frac{1}{2}$ and $\frac{1}{4}$ so need a good understanding of what both mean. They use knowledge of $\frac{1}{4}$ of 12 to solve a problem.

Children draw arrows and label $\frac{1}{2}$ and $\frac{1}{4}$ (though $\frac{1}{2}$ is described as "another $\frac{1}{4}$ "). They solve a money problem with larger numbers with $\frac{1}{2}$ and $\frac{1}{4}$. They use secure knowledge of $\frac{1}{4}$ to explain where Rosie went wrong.



Which two shapes have been divided into quarters (4 equal parts)?

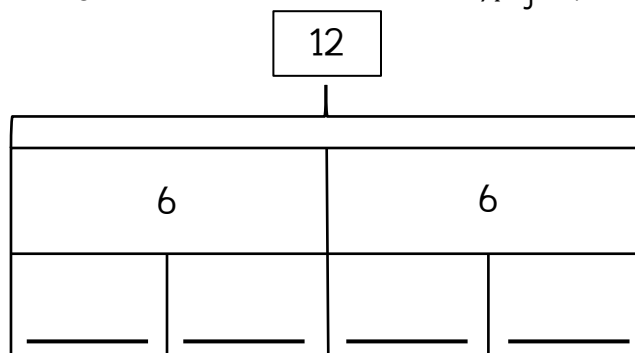


Share (draw) 8 pencils equally into 4 pots.



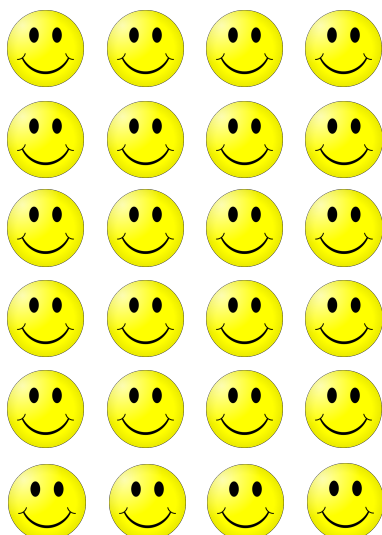
One pot is $\frac{1}{4}$ of all the pencils.
What is $\frac{1}{4}$ of 8?

$\frac{1}{2}$ of 12 is 6.
Use the bar model to work out $\frac{1}{4}$ of 12.



$\frac{1}{4}$ of 12 is:

Draw a circle to show that $\frac{1}{4}$ of 24 is 6:

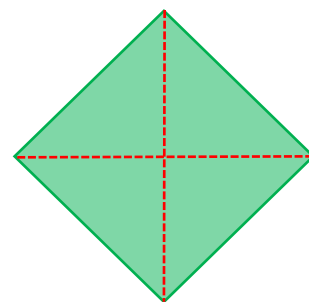
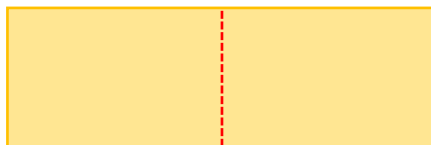
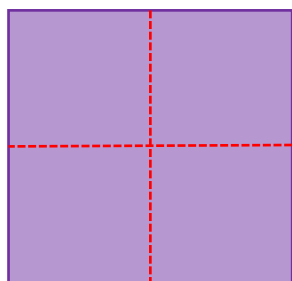


Complete the table:

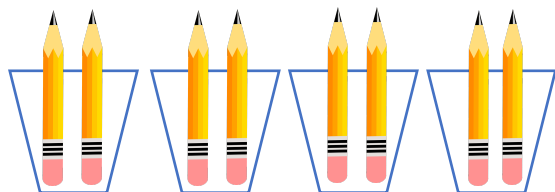
Number	$\frac{1}{2}$ of number	$\frac{1}{4}$ of number
4	2	1
8		
20		
12		



Which two shapes have been divided into quarters (4 equal parts)?



Share (draw) 8 pencils equally into 4 pots.

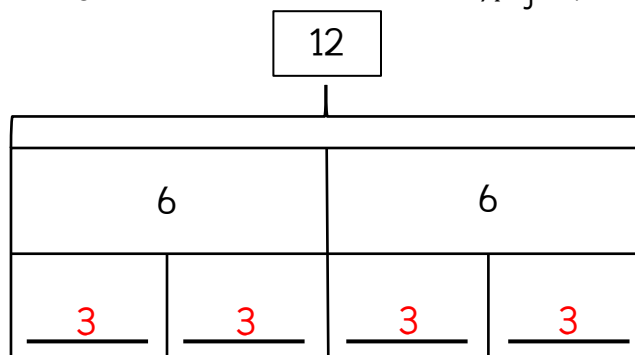


One pot is $\frac{1}{4}$ of all the pencils.
What is $\frac{1}{4}$ of 8?

2

$\frac{1}{2}$ of 12 is 6.

Use the bar model to work out $\frac{1}{4}$ of 12.



$\frac{1}{4}$ of 12 is:
3

Draw a circle to show that $\frac{1}{4}$ of 24 is 6:

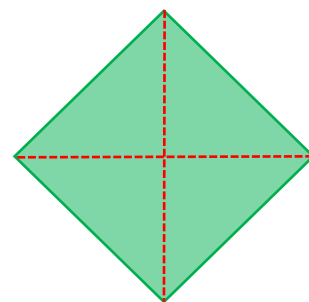
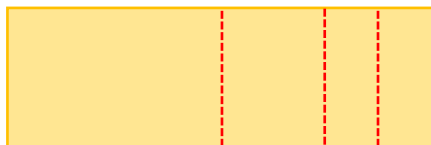
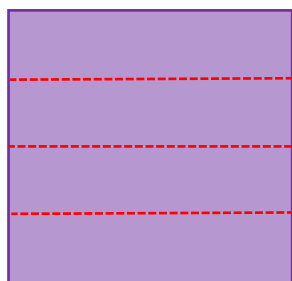


Complete the table:

Number	$\frac{1}{2}$ of number	$\frac{1}{4}$ of number
4	2	1
8	4	2
20	10	5
12	6	3



Which two shapes have been divided into quarters?



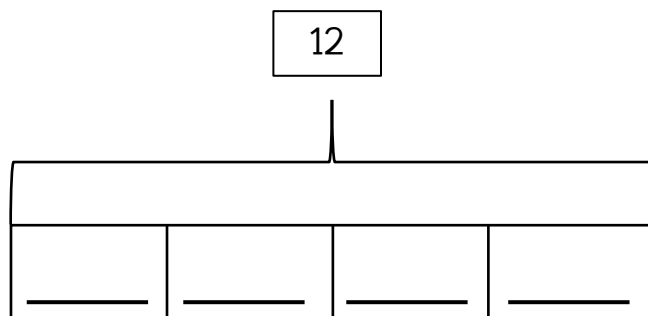
Share (draw) 8 pencils equally into 4 pots.



What is $\frac{1}{2}$ of 8? _____

What is $\frac{1}{4}$ of 8? _____

Use the bar model to work out $\frac{1}{4}$ of 12.



$\frac{1}{4}$ of 12 is:

Draw a circle to show $\frac{1}{4}$ of 24:

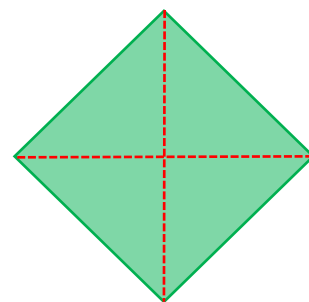
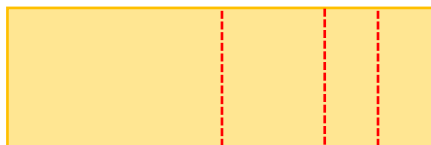
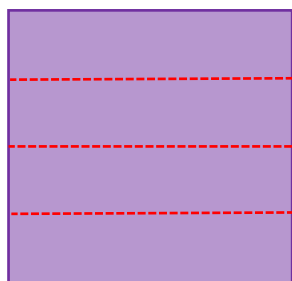


Complete the table:

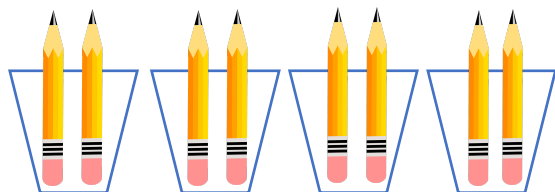
Number	$\frac{1}{2}$ of number	$\frac{1}{4}$ of number
16	8	
	4	2
20		
12		



Which two shapes have been divided into quarters?



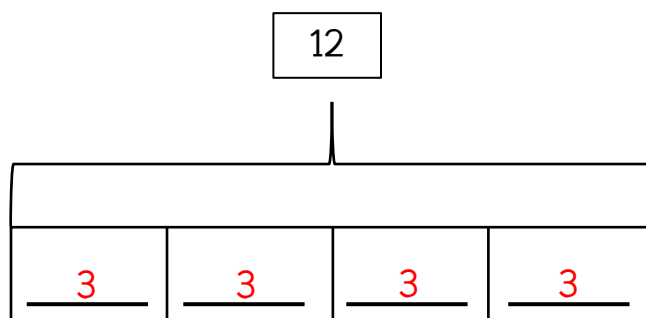
Share (draw) 8 pencils equally into 4 pots.



What is $\frac{1}{2}$ of 8? 4

What is $\frac{1}{4}$ of 8? 2

Use the bar model to work out $\frac{1}{4}$ of 12.



$\frac{1}{4}$ of 12 is:

3

Draw a circle to show $\frac{1}{4}$ of 24:

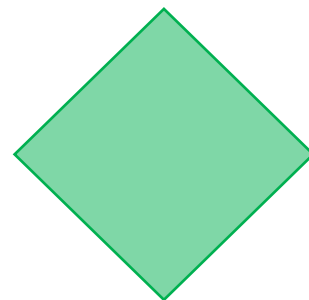
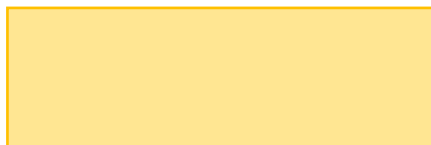
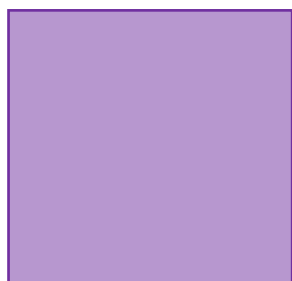


Complete the table:

Number	$\frac{1}{2}$ of number	$\frac{1}{4}$ of number
16	8	4
8	4	2
20	10	5
12	6	3



Find three ways to divide these shapes into quarters.



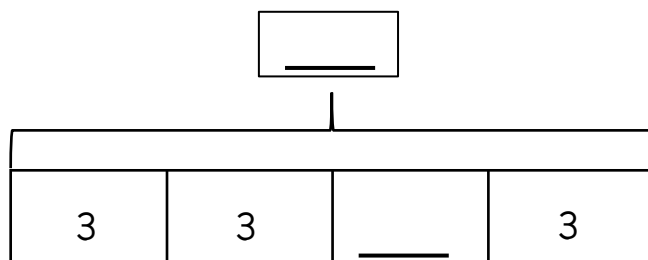
There are 4 pots.
16 pencils are shared equally into them.

How many pencils are in each pot?

What is $\frac{1}{2}$ of 16? _____

What is $\frac{1}{4}$ of 16? _____

Complete the bar model.
What whole number is being represented?



$\frac{1}{4}$ of _____ is _____.

= 2 people

How many people are there? _____



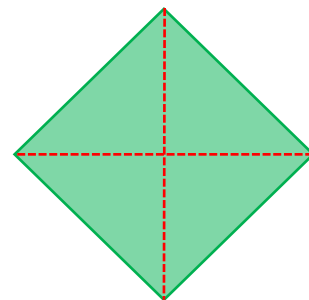
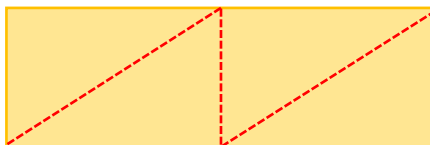
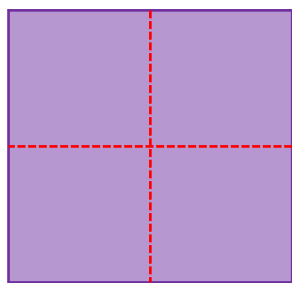
What is $\frac{1}{4}$ of the whole number of people? _____

Complete the table:

Number	$\frac{1}{2}$ of number	$\frac{1}{4}$ of number
	8	
		2
	10	
		3



Find three ways to divide these shapes into quarters.



Some possible answers shown.

There are 4 pots.
16 pencils are shared equally into them.

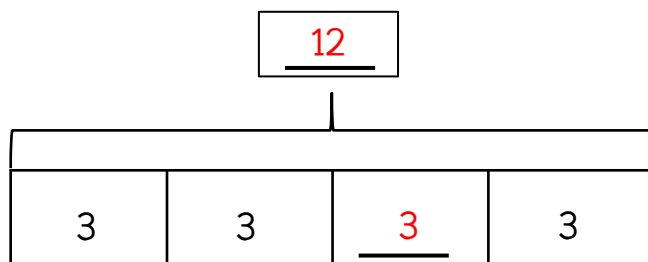
How many pencils are in each pot?

4

What is $\frac{1}{2}$ of 16? 8

What is $\frac{1}{4}$ of 16? 4

Complete the bar model.
What whole number is being represented?



$\frac{1}{4}$ of 12 is 3.

= 2 people

How many people are there? 24



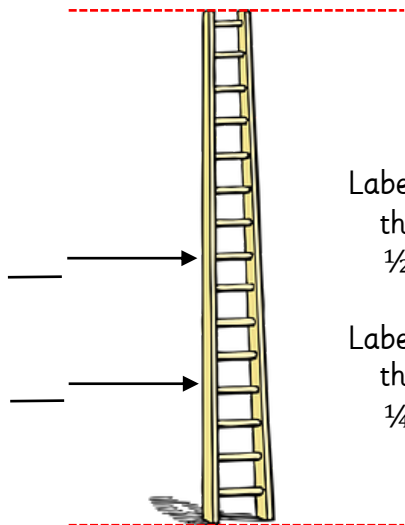
What is $\frac{1}{4}$ of the whole number of people? 6

Complete the table:

Number	$\frac{1}{2}$ of number	$\frac{1}{4}$ of number
16	8	4
8	4	2
20	10	5
12	6	3



Zach is climbing a ladder.



Label the arrow
that shows
 $\frac{1}{2}$ way up.

Label the arrow
that shows
 $\frac{1}{4}$ way up.

Use your labelling to complete the sentence:

$\frac{1}{2}$ of $\frac{1}{2}$ is _____.



Malachi

I have $\frac{1}{4}$ of 12.

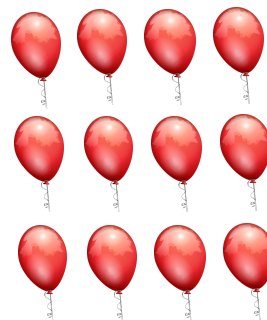
Who has more
money? Why?

I have $\frac{1}{4}$ of £16.

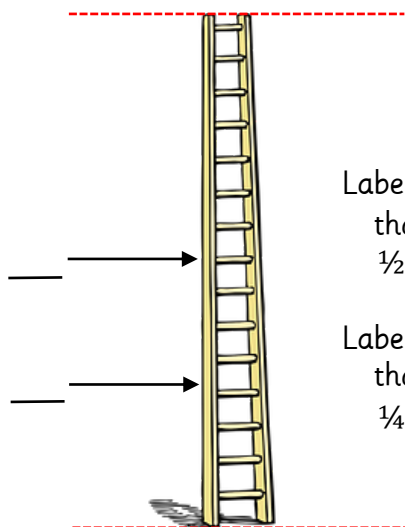


Tia

Rosie has 12 balloons. Circle $\frac{1}{4}$ of them.



Zach is climbing a ladder.



Label the arrow
that shows
 $\frac{1}{2}$ way up.

Label the arrow
that shows
 $\frac{1}{4}$ way up.

Use your labelling to complete the sentence:

$\frac{1}{2}$ of $\frac{1}{2}$ is _____.



Malachi

I have $\frac{1}{4}$ of 12.

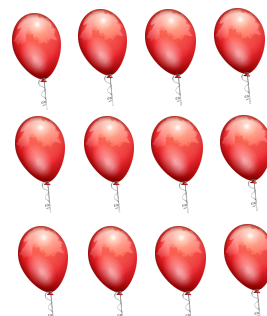
Who has more
money? Why?

I have $\frac{1}{4}$ of £16.



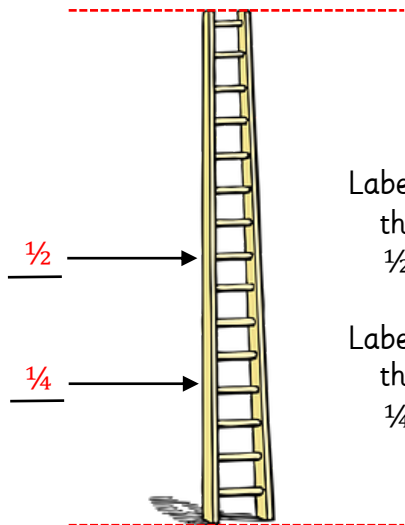
Tia

Rosie has 12 balloons. Circle $\frac{1}{4}$ of them.





Zach is climbing a ladder.



Label the arrow that shows $\frac{1}{2}$ way up.

Label the arrow that shows $\frac{1}{4}$ way up.

Use your labelling to complete the sentence:

$\frac{1}{2}$ of $\frac{1}{2}$ is $\frac{1}{4}$.



Malachi

I have $\frac{1}{4}$ of 12.

Who has more money? Why?

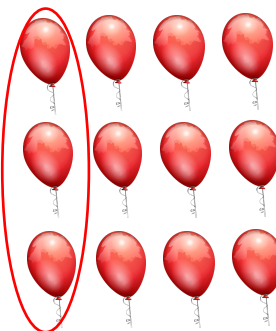
I have $\frac{1}{4}$ of £16.



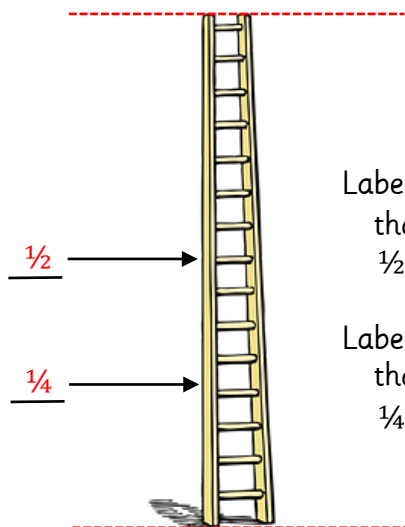
Tia

Tia has more money because $\frac{1}{4}$ of £16 is £4 but $\frac{1}{4}$ of £12 is £3.

Rosie has 12 balloons. Circle $\frac{1}{4}$ of them.



Zach is climbing a ladder.



Label the arrow that shows $\frac{1}{2}$ way up.

Label the arrow that shows $\frac{1}{4}$ way up.

Use your labelling to complete the sentence:

$\frac{1}{2}$ of $\frac{1}{2}$ is $\frac{1}{4}$.



Malachi

I have $\frac{1}{4}$ of 12.

Who has more money? Why?

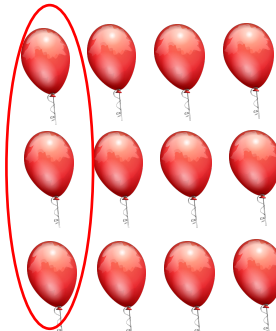
I have $\frac{1}{4}$ of £16.



Tia

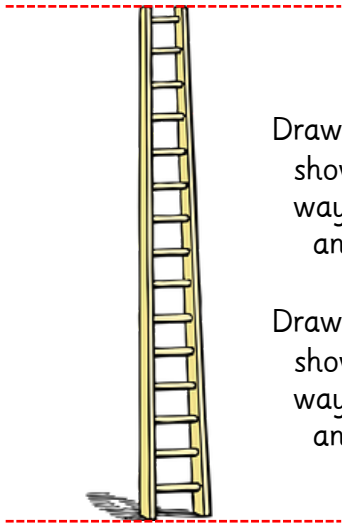
Tia has more money because $\frac{1}{4}$ of £16 is £4 but $\frac{1}{4}$ of £12 is £3.

Rosie has 12 balloons. Circle $\frac{1}{4}$ of them.





Zach is climbing a ladder.



Draw an arrow to show $\frac{1}{2}$ of the way to the top and label it.

Draw an arrow to show $\frac{1}{4}$ of the way to the top and label it.

Complete the sentence:

$\frac{1}{4}$ is $\frac{1}{2}$ of a _____.



Malachi

I have $\frac{1}{2}$ of £12.

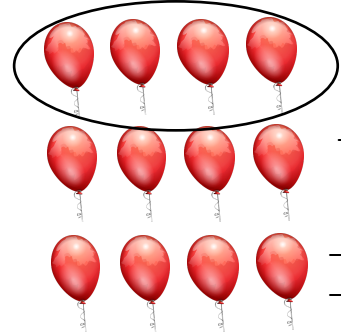
Who has more money? Why?

I have $\frac{1}{4}$ of £20.



Tia

Rosie thinks she has circled $\frac{1}{4}$ of the balloons.

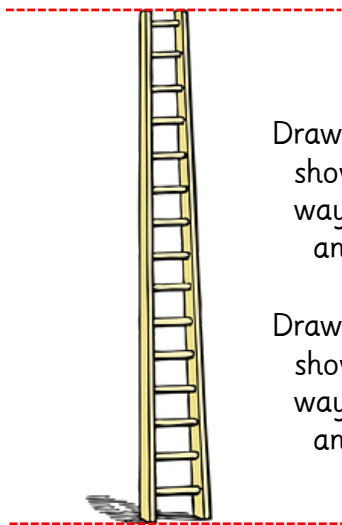


Is she correct?

Why?



Zach is climbing a ladder.



Draw an arrow to show $\frac{1}{2}$ of the way to the top and label it.

Draw an arrow to show $\frac{1}{4}$ of the way to the top and label it.

Complete the sentence:

$\frac{1}{4}$ is $\frac{1}{2}$ of a _____.



Malachi

I have $\frac{1}{2}$ of £12.

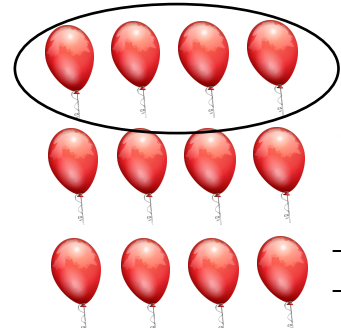
Who has more money? Why?

I have $\frac{1}{4}$ of £20.



Tia

Rosie thinks she has circled $\frac{1}{4}$ of the balloons.

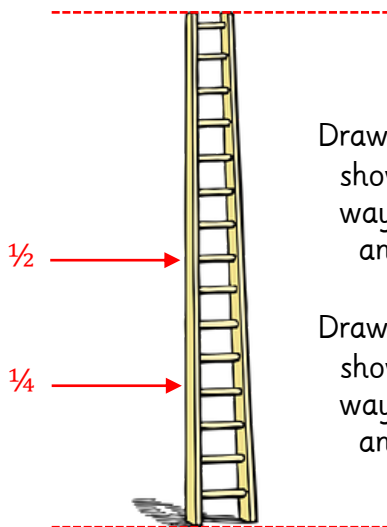


Is she correct?

Why?



Zach is climbing a ladder.



Draw an arrow to show $\frac{1}{2}$ of the way to the top and label it.

Draw an arrow to show $\frac{1}{4}$ of the way to the top and label it.

Complete the sentence:

$\frac{1}{4}$ is $\frac{1}{2}$ of a $\frac{1}{2}$.



Malachi

I have $\frac{1}{2}$ of £12.

Who has more money? Why?

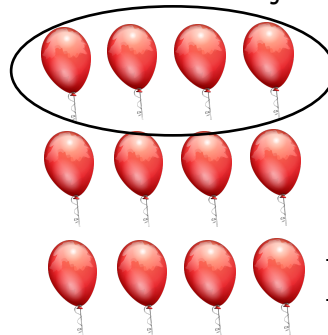
I have $\frac{1}{4}$ of £20.



Tia

Malachi has more money because $\frac{1}{2}$ of £12 is £6 but $\frac{1}{4}$ of £20 is just £5.

Rosie thinks she has circled $\frac{1}{4}$ of the balloons.

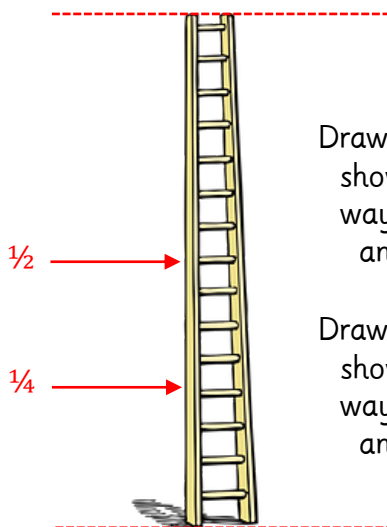


Is she correct?
No

Why?
 $\frac{1}{4}$ of 12 is 3.



Zach is climbing a ladder.



Draw an arrow to show $\frac{1}{2}$ of the way to the top and label it.

Draw an arrow to show $\frac{1}{4}$ of the way to the top and label it.

Complete the sentence:

$\frac{1}{4}$ is $\frac{1}{2}$ of a $\frac{1}{2}$.



Malachi

I have $\frac{1}{2}$ of £12.

Who has more money? Why?

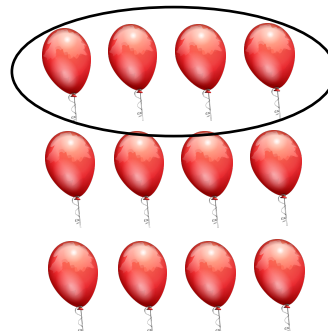
I have $\frac{1}{4}$ of £20.



Tia

Malachi has more money because $\frac{1}{2}$ of £12 is £6 but $\frac{1}{4}$ of £20 is just £5.

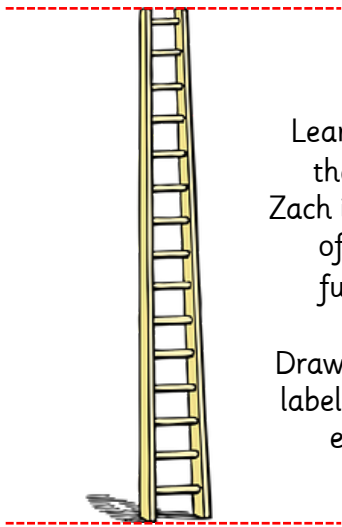
Rosie thinks she has circled $\frac{1}{4}$ of the balloons.



Is she correct?
No

Why?
 $\frac{1}{4}$ of 12 is 3.

Zach and Leanna are climbing a ladder.



Leanna is $\frac{1}{4}$ of the way up.
Zach is another $\frac{1}{4}$ of the way further up.

Draw arrows and label where they each are.

Fill in the gaps:

$\frac{1}{4}$ is _____ of a _____.



Malachi

I have $\frac{1}{2}$ of £30.

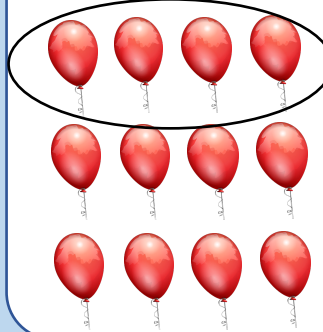
Who has more money? Why?

I have $\frac{1}{4}$ of £40.



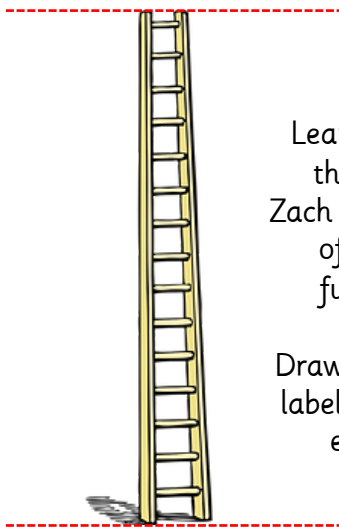
Tia

Rosie thinks she has circled $\frac{1}{4}$ of the balloons.



Explain the mistake she has made.

Zach and Leanna are climbing a ladder.



Leanna is $\frac{1}{4}$ of the way up.
Zach is another $\frac{1}{4}$ of the way further up.

Draw arrows and label where they each are.

Fill in the gaps:

$\frac{1}{4}$ is _____ of a _____.



Malachi

I have $\frac{1}{2}$ of £30.

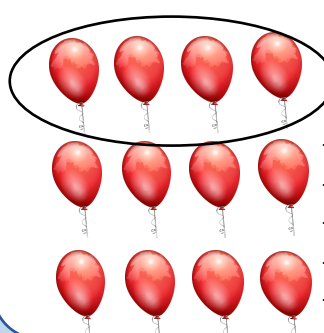
Who has more money? Why?

I have $\frac{1}{4}$ of £40.



Tia

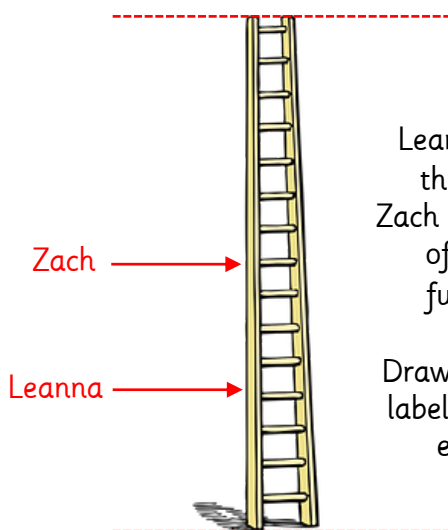
Rosie thinks she has circled $\frac{1}{4}$ of the balloons.



Explain the mistake she has made.



Zach and Leanna are climbing a ladder.



Leanna is $\frac{1}{4}$ of the way up.
Zach is another $\frac{1}{4}$ of the way further up.

Draw arrows and label where they each are.

Fill in the gaps:

$\frac{1}{4}$ is $\frac{1}{2}$ of a $\frac{1}{2}$.



Malachi

I have $\frac{1}{2}$ of £30.

Who has more money? Why?

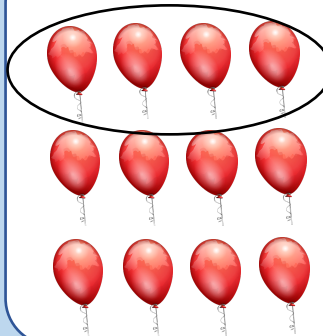
I have $\frac{1}{4}$ of £40.



Tia

Malachi has more money because $\frac{1}{2}$ of £30 is £15 but $\frac{1}{4}$ of £40 is £10.

Rosie thinks she has circled $\frac{1}{4}$ of the balloons.

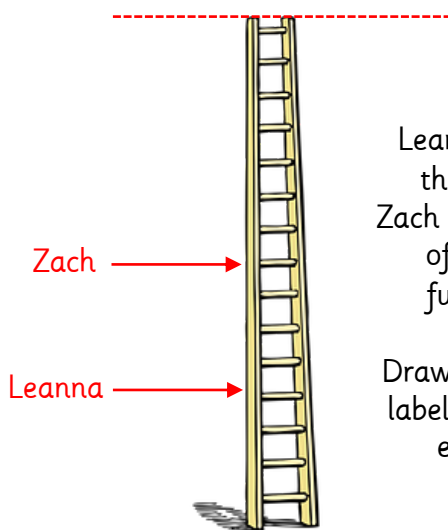


Explain the mistake she has made.

She thought that $\frac{1}{4}$ just meant 4. She did not know that $\frac{1}{4}$ means 1 of 4 equal groups.
She should have circled 3 balloons.



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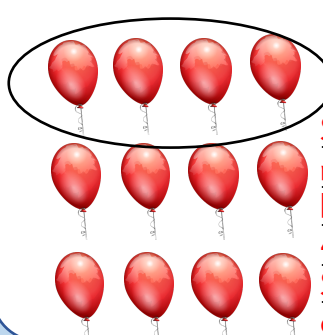
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