

White

**Rose
Maths**

Summer - Block 2

Fractions

Year 1

Overview

Small Steps

- Find a half (1)
- Find a half (2)
- Find a quarter (1)
- Find a quarter (2)



NC Objectives

Recognise, find and name a half as one of two equal parts of an object, shape or quantity.

Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half)

Compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]

Find a Half (1)

Notes and Guidance

Children explore finding a half for the first time using shapes and sets of objects. They will use the vocabulary 'half' and 'whole'. Children will not at this stage use the fractional notation of $\frac{1}{2}$

It is important that they know that a half means 'one of two equal parts' and are able to count them.

Mathematical Talk

- How many parts have I split my object into?
- How can you show a half of something?
- How do you know if a shape is split into halves?
- How many halves make a whole?
- Can we count them?
- How do you know if an object or shape has not been split in half?
- Is there more than one way to show half of a shape or object?
- Is this the same for all shapes?

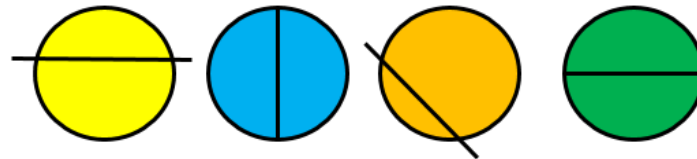
Varied Fluency

- Show the children real life objects and how they can be cut in half.
How can we cut these objects in half?



Can any of the objects be cut in half in more than one way?

- Which circles have been split into equal halves?



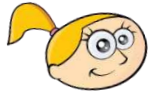
- Match the halves to make 5 complete shapes.



Find a Half (1)

Reasoning and Problem Solving

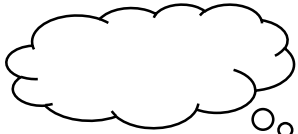
Eva and Jack are both attempting to split a rectangle in half.



Eva



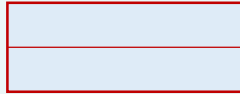
Jack thinks he can find three more ways.



Jack

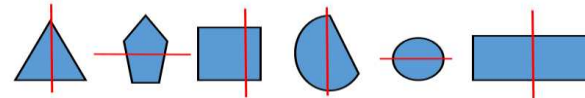
Find Jack's three examples.

Possible answers:



Sort the shapes into the table.

Shapes that are split in half	Shapes that are not split in half



Can you add any more shapes to the table?

Possible answer:

Shapes that are split in half	Shapes that are not split in half

There are a number of different answers for other shapes children could add to the table.

Find a Half (2)

Notes and Guidance

Children use their understanding of finding half of an object or shape and apply this to finding half of a small quantity. It is important that children find the total amount and can then show how this number can be shared equally into two. The use of concrete manipulatives such as counters can help children to find a half.

Mathematical Talk

How can we find half of an amount?

How many groups do we need to share our beads between?

How can you check that you have found half?

How many equal parts should you have when you have split the objects in half?

Varied Fluency

Find half of each amount.

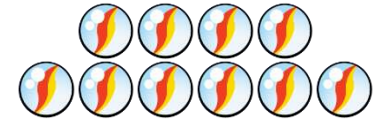


Find half of the amounts and complete the stem sentences.



There are ___ beads.

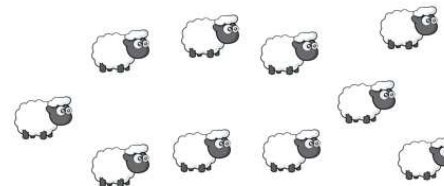
Half of ___ is ___



There are ___ marbles.

Half of ___ is ___

Find half of the sheep.



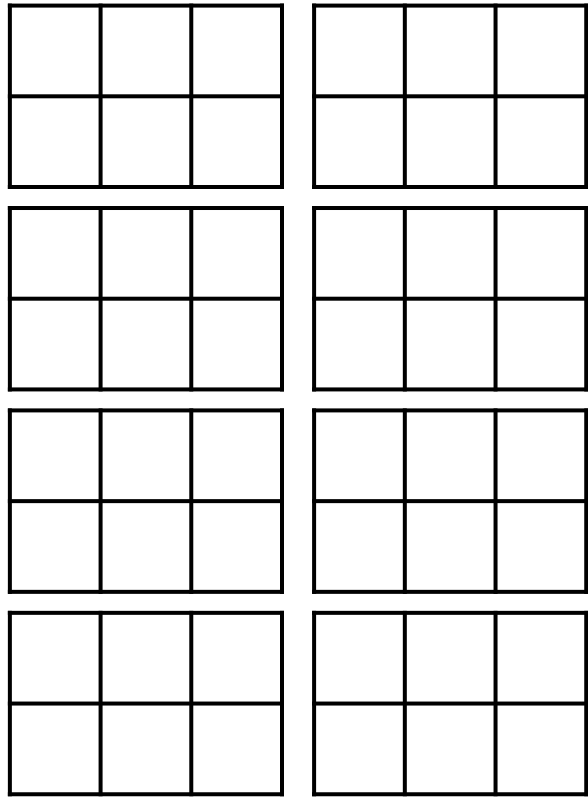
There are ___ sheep.

Half of ___ is ___

Find a Half (2)

Reasoning and Problem Solving

How many different ways can you shade one half of the shapes?



Any combination that has three whole squares shaded out of the 6

Mo is finding halves.

It is hard to find half of an odd number.



Do you agree with Mo?
Explain your answer.

Possible answer:
I agree with Mo because an odd number cannot be shared equally between 2
It would not give a whole number answer.

Find a Quarter (1)

Notes and Guidance

Children explore quarters for the first time. They will develop their understanding of equal parts and non-equal parts and relate this to a shape or object being split up into four equal parts.

Children will use the words quarters and parts at this stage but will not use the fractional notation of $\frac{1}{4}$

Mathematical Talk

How many parts does my whole have?
Are my parts equal or not equal?
How many equal parts can we see/count?

Can we make a quarter in a different way?

Which shapes show equal parts?
Which shapes show four equal parts?
Which shapes show quarters?

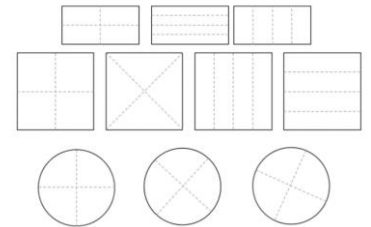
Varied Fluency

Take two square pieces of paper, two circular pieces of paper and two rectangular pieces of paper.
Model folding one of each into four equal parts and the other into four non-equal parts.

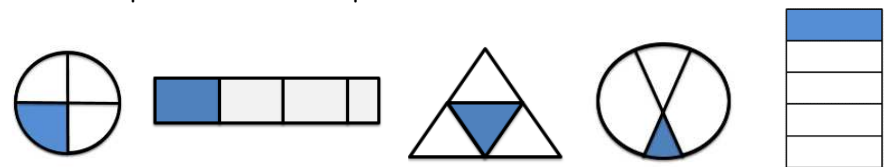
- Which shapes show equal parts? Which do not?
- How many equal parts can we see?
Can we fold any of the shapes in a different way and still get equal parts?

Count the equal parts and then model counting them in quarters.

Colour a quarter of each shape. Can you colour it in different ways?



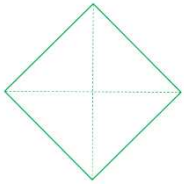
Tick the shapes that show quarters.



Find a Quarter (1)

Reasoning and Problem Solving

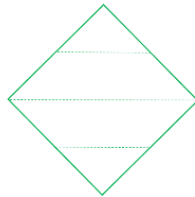
Alex and Jack are talking about quarters.



Alex

My shape shows quarters because it has four equal parts.

My shape shows quarters because it has four parts.



Jack

Are they correct?
Explain your answer.

Alex is correct because quarters must be four equal parts. Jack has split his square into four unequal parts so they are not quarters.

Use the squares to show:

- Less than a quarter shaded.
- Exactly a quarter shaded.
- More than a quarter shaded.



There are multiple solutions for each one.

Find a Quarter (2)

Notes and Guidance

Children find a quarter of a small quantity through equal sharing. It is important they can show the groups clearly by drawing around quantities or by physically sharing into something. Children will use the word quarters and parts at this stage but will not use the fractional notation of $\frac{1}{4}$. They also begin to describe capacity using the terminology 'a quarter full'.

Mathematical Talk

How many sweets do I have? How can I share them equally into four groups? What is one quarter worth?

Are my containers the same or different?
Can you show me a quarter full in each container.

How can I quarter this amount?
If I have 2, and it is a quarter, what will the whole look like?
What will the whole be worth?

Varied Fluency

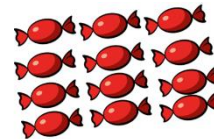
Share each quantity into four equal groups.



There are ___ cakes.

There is ___ cake in each quarter.

A quarter of ___ is ___



There are ___ sweets.

There are ___ sweets in each quarter.

A quarter of ___ is ___



There are ___ peaches.

There are ___ peaches in each quarter.

A quarter of ___ is ___

Use a range of containers and rice/water.
Can you show me a quarter full in each container?
Do they look the same or different?

Use counters to complete the sentences.

A quarter of 4 is ___


A quarter of 8 is ___

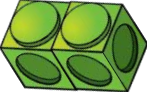
1 is one quarter of ___

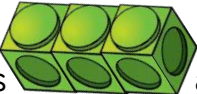
3 is one quarter of ___

Find a Quarter (2)

Reasoning and Problem Solving

One cube  is a quarter, what could the whole look like?

Two cubes  are a quarter, what could the whole look like?

Three cubes  are a quarter, what could the whole look like?

How many different possibilities can you make?

Possible answers:

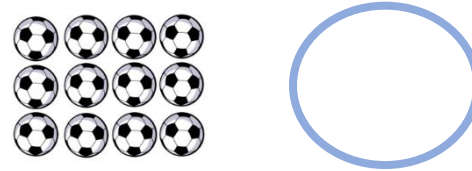
Any arrangement of 4 cubes.

Any arrangement of 8 cubes.

Any arrangement of 12 cubes.

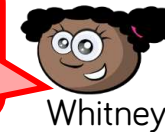
There are many different possibilities which the children will find through their exploration with the multilink.

Mr. White has asked his class to put one quarter of the balls into the hoop.



I'm going to put one ball in the hoop.

I'm going to put three balls in the hoop.



I'm going to put four balls into the hoop.

Who is correct? Can you explain any mistakes made?

Whitney is correct because one quarter of 12 is 3

Teddy has misinterpreted **one** quarter to just mean one.

Tommy knows that quarters are linked to fours but hasn't split the balls into four equal groups.