

Treasure trove

Activity 1

Focus of activity: Finding $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of amounts.

Working together: conceptual understanding

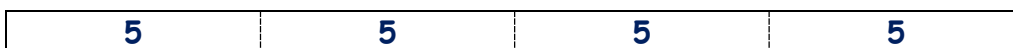
- Give each child a strip of paper. Ask them to fold it in half and then in half again.



- *Open up your piece of paper. Show me half.* Children fold it to show $\frac{1}{2}$. *Now show me $\frac{1}{4}$.* Children fold again to show $\frac{1}{4}$. *Now show me $\frac{3}{4}$.* Children open the piece of paper and hide/fold back $\frac{1}{4}$ to show $\frac{3}{4}$. *Now show me two quarters.* Point out that two quarters is the same as one half.
- Give each child 12 'gems' (or counters) and ask them to share them equally between the four spaces on their paper strip. *How many are in one quarter? How many are in two quarters? How many are in one half? The same! How many are in three quarters? And in four quarters? All of them!*
- Record:
 - $\frac{1}{4}$ of 12 is 3
 - $\frac{2}{4}$ of 12 is 6
 - $\frac{3}{4}$ of 12 is 9
 - $\frac{4}{4}$ of 12 is 12.
- Repeat for 24 'gems'.

Up for a challenge?

What's a quick way to find $\frac{1}{4}$ of a number? Remind children how they folded the strip in half, and in half again at the beginning of the session. *So to find $\frac{1}{4}$ of 12, we can halve 12, and then halve 6. Use halving twice to work out a quarter of 20. Imagine you had 20 gems, how many would be in each quarter of your strip?* Ask children to write that number in each part of their fractions strip. *Does the total of the four quarters add up to 20?*



Now it's the children's turn:

- Children share numbers of gems between four treasure chests. They complete fraction sentences:
 $\frac{1}{4}$ of \square is \square ; $\frac{1}{2}$ of \square is \square ; $\frac{3}{4}$ of \square is \square .
- Go around the group and mark their fraction sentences as they complete them, e.g. initially after two examples.

S-t-r-e-t-c-h:

If children cope well, ask them to think of another number of gems they could share equally between the four treasure chests. They are not allowed to cut up any gems!

Things to remember

How many quarters are the same as one half? Remember that to find a quarter of an amount, we can halve, and halve again. Each quarter is one of four equal parts. Make a list of all the numbers from 4 to 40 that can be shared into quarters - using children's work to help. What pattern of numbers is this? [the 4 times table]

You may want to add something that has emerged from the activity. This may refer to misconceptions or mistakes made.

Resources	Outcomes
<ul style="list-style-type: none">• Strips of paper• Glass gems/pebbles (as used in vases)• Treasure chest pictures (see child instructions)	<ol style="list-style-type: none">1. Children can find $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of amounts (whole number answers).2. Children begin to understand that $\frac{2}{4}$ is equivalent to $\frac{1}{2}$.3. Children begin to see that not all numbers can be shared into quarters (to give whole number answers).

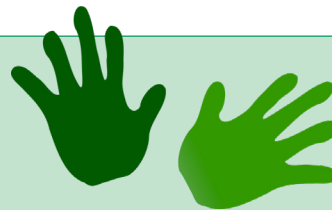
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Work in pairs

Things you will need:

- 28 gems
- Four treasure chests
- A pencil



What to do:

- Choose a bag of gems. Put $\frac{1}{4}$ of the gems in each of the four treasure chests.
- Complete one line of fraction sentences for that bag of gems.



- Repeat with up to five other bags of gems.

$\frac{1}{4}$ of is ; $\frac{1}{2}$ of is ; $\frac{3}{4}$ of is

$\frac{1}{4}$ of is ; $\frac{1}{2}$ of is ; $\frac{3}{4}$ of is

$\frac{1}{4}$ of is ; $\frac{1}{2}$ of is ; $\frac{3}{4}$ of is

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$\frac{1}{4}$ of is ; $\frac{1}{2}$ of is ; $\frac{3}{4}$ of is

S-t-r-e-t-c-h:

Find another number of gems you could share equally between the four treasure chests. You are not allowed to cut up any gems!

Learning outcomes:

- I can find $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of amounts (whole number answers).
- I am beginning to understand that $\frac{2}{4}$ is the same as $\frac{1}{2}$.
- I am beginning to see that not all numbers can be shared into quarters (to give whole number answers).

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