

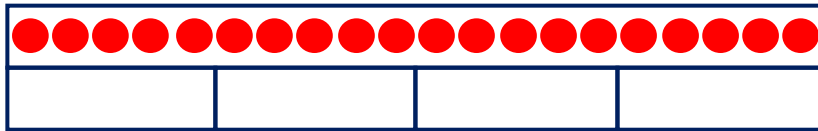
Fraction experiment

Activity 1

Focus of activity: Finding $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{3}{4}$ of amounts (whole number answers).

Working together: conceptual understanding

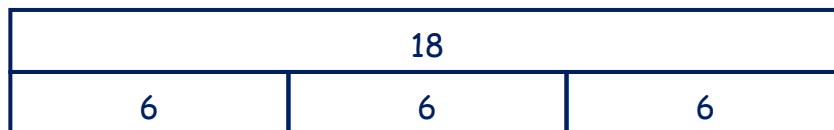
- Draw a large bar model outline and place 20 counters in the top section. Ask children to put $\frac{1}{4}$ of the counters in each of the four sections below.



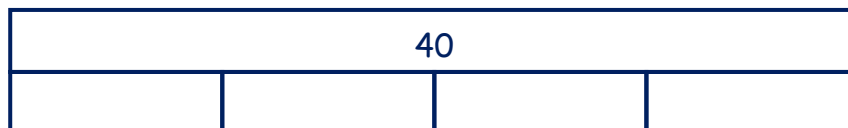
- Draw the matching bar model using numbers in place of counters:



- Discuss what it shows. 20 is split into four equal parts, one quarter of 20 is 5. *How much is two quarters? Three quarters? Four quarters?* Write $\frac{1}{4}$ of 20 is 5, $\frac{3}{4}$ of 20 is 15.
- Draw a large bar model outline and place 15 counters in the top section. Ask children to put $\frac{1}{3}$ of the counters in each of the three sections below. Write $\frac{1}{3}$ of 15 is 5, $\frac{2}{3}$ of 15 is 10 and $\frac{3}{3}$ of 15 is 15.
- Draw the following bar model:



- *What does this bar model show? What fraction statements can we write about it?* Draw out writing $\frac{1}{3}$ of 18 is 6, $\frac{2}{3}$ of 18 is 12 and $\frac{3}{3}$ of 18 is 18.
- Draw the following bar model and ask children what number needs to be written in each quarter:



- *If we are right, what should the four numbers add up to? Do they? What is $\frac{3}{4}$ of 40?*
- Ask children to copy this bar model onto their whiteboards and write numbers into each third:



- *What is $\frac{1}{3}$ of 12? $\frac{2}{3}$ of 12?*

Up for a challenge?

Draw your own bar model to show finding quarters of 12.

Draw your own bar model to show finding thirds of 30.

Now it's the children's turn:

- Children work in pairs to find which numbers from 20 and 30 can be split into three equal parts. They use counters on a large bar model to help. They record fraction statements for each: $\frac{1}{3}$ of \square is \square and $\frac{2}{3}$ of \square is \square .
- Repeat, this time finding which numbers can be split into four equal parts of the bar model.
- Go around the group and mark children's fraction statements as they write them. What do they notice about the numbers which can be split into three equal groups? And four equal groups?

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

If children cope well, ask them to draw bar models to show quarters of 24 and 28.

Things to remember

Remember that the bar model can help us to find fractions of amounts. Together list the numbers which children found could be split into three equal groups. What do they notice? They are multiples of 3, i.e. are in the 3 times table. Repeat for numbers they split into four equal groups.

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">• Counters• A3 sheets of paper	<ol style="list-style-type: none">1. Children can find unit-fractions and related non-unit fractions of amounts using a bar model to help.2. Children begin to recognise which numbers can be split into 3 or 4 equal groups.

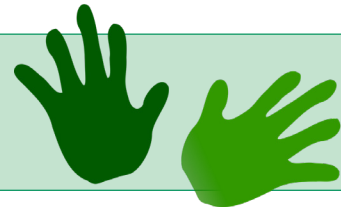
Fraction experiment

Activity 1

Work in pairs

Things you will need:

- 30 counters
- A3 paper



What to do:

- Your challenge is to find out which numbers between 20 and 30 can be split into three equal parts.
- Draw a BIG bar model on your paper.

- Place a number of counters in the top section. Try to split them equally between the three lower sections. You are splitting the number into thirds.
- For each number that works, write fraction statements:
 $\frac{1}{3}$ of is and $\frac{2}{3}$ of is .

- Repeat, this time finding which numbers can be split into four equal parts on the bar model.

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

Draw bar models to show quarters of 24 and 28.

Learning outcomes:

- I can find unit-fractions and related non-unit fractions of amounts using the bar model to help.
- I am beginning to recognise which numbers can be split into 3 or 4 equal groups.