

Remember, a fraction is a part of an object or amount. This shape is divided into four equal parts.

1 part of the 4 is shaded.

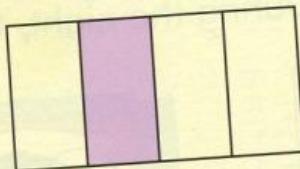
This is one-quarter. We write  $\frac{1}{4}$ .

3 parts of the 4 are not shaded.

This is three-quarters. We write  $\frac{3}{4}$ .

One-quarter plus three-quarters make the four-quarters or one whole shape.

We can write this as an addition sum:  $\frac{1}{4} + \frac{3}{4} = 1$



You will need:

- squared paper
- scissors
- coloured pencils.



**1** Cut out strips of squared paper and colour them to show these fractions.

**a**  $\frac{1}{2}$

**b**  $\frac{3}{4}$

**c**  $\frac{2}{3}$

**d**  $\frac{5}{8}$

**e**  $\frac{4}{5}$

**f**  $\frac{7}{8}$

**g**  $\frac{3}{10}$

**h**  $\frac{8}{10}$

**2** Use your coloured strip to help you find the missing fractions in these sums.

**a**  $\frac{1}{2} + \square = 1$

**b**  $\frac{3}{4} + \square = 1$

**c**  $\frac{2}{3} + \square = 1$

**d**  $\frac{5}{8} + \square = 1$

**e**  $\frac{4}{5} + \square = 1$

**f**  $\frac{7}{8} + \square = 1$

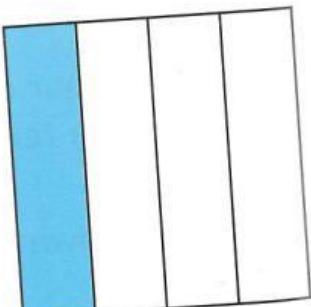
**g**  $\frac{7}{10} + \square = 1$

**h**  $\frac{2}{10} + \square = 1$



**3** Here is one way to colour one quarter of a square:

- a** Find as many other ways as you can to colour one quarter of a square.
- b** Choose a different fraction. Choose a different shape. Show your fraction in as many different ways as you can.



## Fractions of shapes

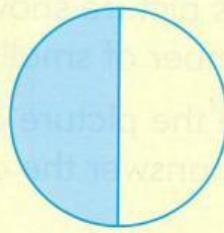
This circle has been divided into two equal parts.

Each part is one half or  $\frac{1}{2}$ .

$\frac{1}{2}$  of the circle is coloured.

$\frac{1}{2}$  of the circle is not coloured.

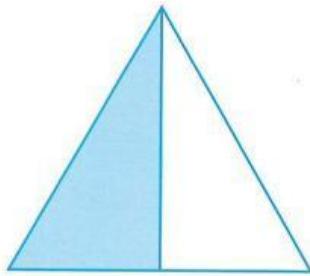
$$\frac{1}{2} + \frac{1}{2} = 1 \text{ whole}$$



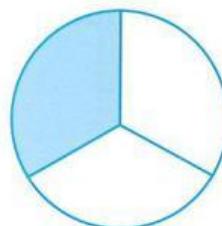
For each shape, write:

- a** the number of parts it has been divided into
- b** the fraction that is shaded
- c** the fraction that is unshaded
- d** the number sentence showing the sum of the shaded and unshaded parts, for example  $\frac{1}{2} + \frac{1}{2} = 1$

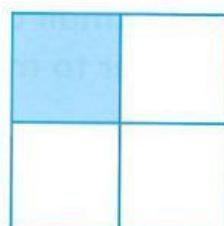
1



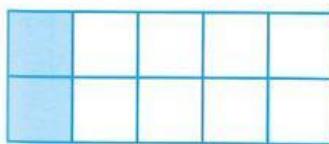
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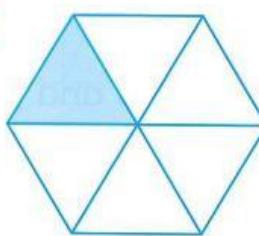
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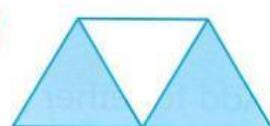
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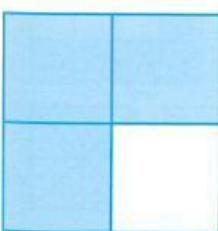
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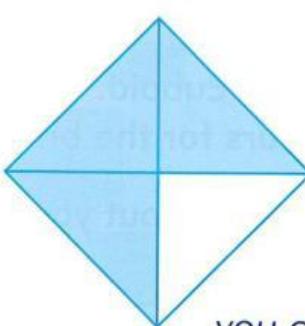
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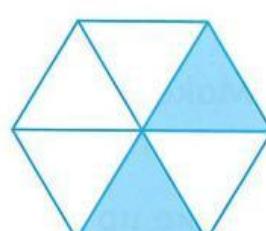
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8



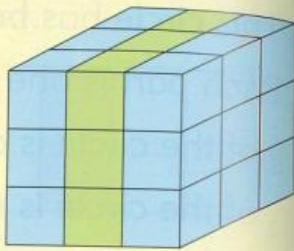
9



you can use Workbook page 40

This picture shows a big cube divided into a number of smaller cubes.

Use the picture or make your own cube to help you answer the questions.

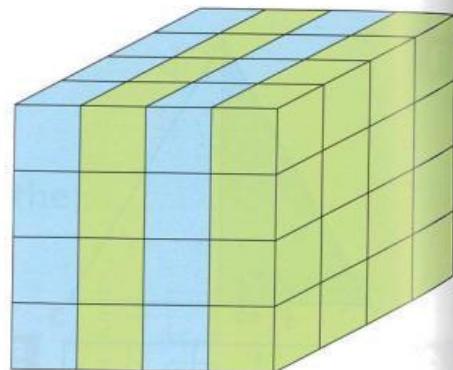


**1** Use your cube to calculate the following.

- a** How many cubes are there altogether?
- b** If you took one-third of the cubes away, how many would be left?
- c** Draw  $\frac{1}{3}$  of the cubes.
- d**  $\frac{2}{3}$  of the cubes are in one pile. The rest are in another pile. How many cubes are there in each pile?

**2** These small cubes have been put together to make a cuboid.

- a** How many cubes are there altogether?
- b** What fraction of the cubes are green?
- c** Draw  $\frac{1}{8}$  of the blue cubes.
- d** Add together  $\frac{1}{4}$  of the blue cubes and  $\frac{1}{4}$  of the green cubes. How many cubes do you have?
- e** Put  $\frac{1}{4}$  of the green cubes in a row. Put  $\frac{3}{8}$  of the blue cubes in a row. Which row has more cubes?



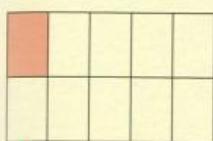
**3** Make or draw your own cuboid. Try a different size or use three colours for the bricks.

**4** Make up some problems about your cuboid for a partner.

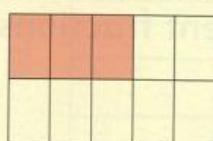
you can use Workbook page 41

## Comparing fractions

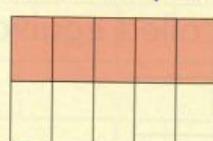
Look at the shaded part of each shape.



$$\frac{1}{10}$$



$$\frac{3}{10}$$



$$\frac{5}{10}$$

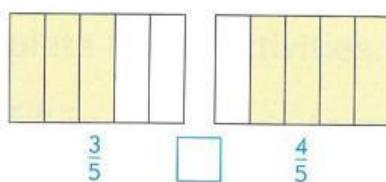


$$\frac{9}{10}$$

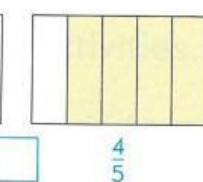
$\frac{1}{10}$  is less than  $\frac{3}{10}$   
 $\frac{9}{10}$  is more than  $\frac{3}{10}$

You can write  $\frac{1}{10} < \frac{3}{10}$   
 You can write  $\frac{9}{10} > \frac{3}{10}$

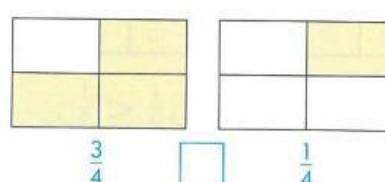
**1** Copy the number sentences. Fill in  $<$  or  $>$  to compare the fractions.



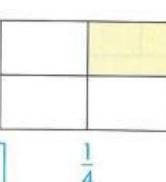
$$\frac{3}{5}$$



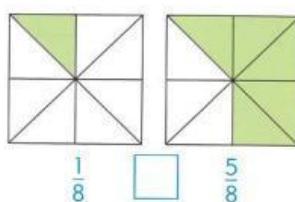
$$\frac{4}{5}$$



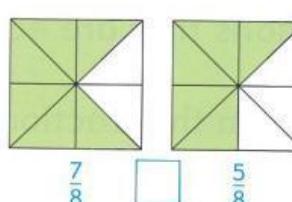
$$\frac{3}{4}$$



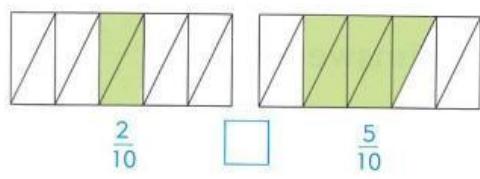
$$\frac{1}{4}$$



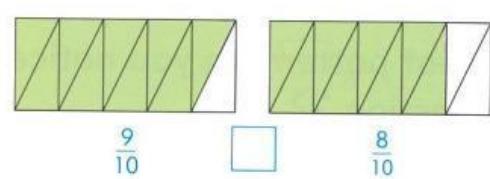
$$\frac{1}{8}$$



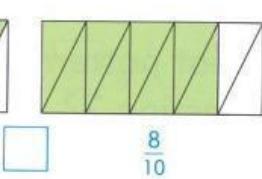
$$\frac{5}{8}$$



$$\frac{2}{10}$$



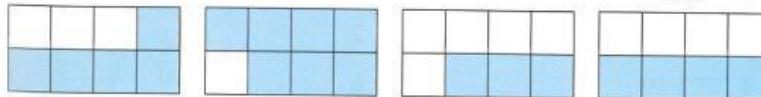
$$\frac{9}{10}$$



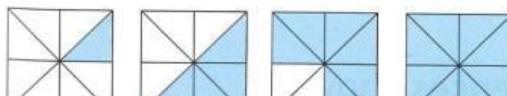
$$\frac{8}{10}$$

**2** Write these fractions in order from biggest to smallest.

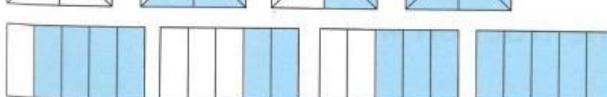
a



b

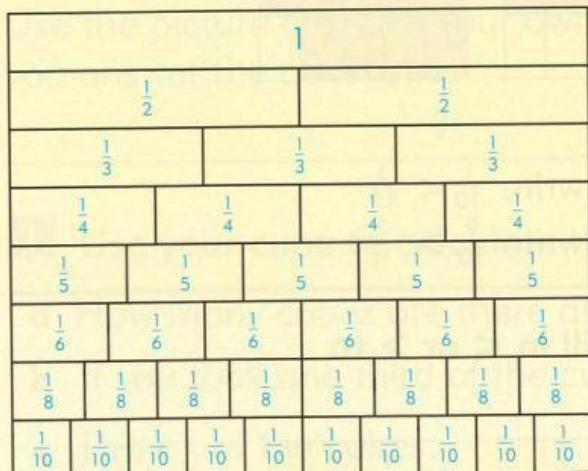


c



you can use Workbook page 42

Use the fraction wall to help you compare fractions.  
Fractions that are equal are called **equivalent fractions**.



$$\frac{1}{2} > \frac{1}{3}$$

$$\frac{2}{4} = \frac{1}{2}$$

$$\frac{1}{4} < \frac{1}{3}$$



**1** Name four fractions that are equivalent to  $\frac{1}{2}$

**2** Which fraction from the fraction wall is equivalent to:

a  $\frac{2}{10}$

b  $\frac{4}{10}$

c  $\frac{6}{10}$

d  $\frac{8}{10}$ ?



**3** What pattern do you notice in your answers to question 2?



**4** Fill in  $<$ ,  $>$  or  $=$

a  $\frac{1}{3} \square \frac{1}{4}$

b  $\frac{3}{10} \square \frac{1}{5}$

c  $\frac{3}{8} \square \frac{1}{2}$

d  $\frac{3}{4} \square \frac{6}{8}$

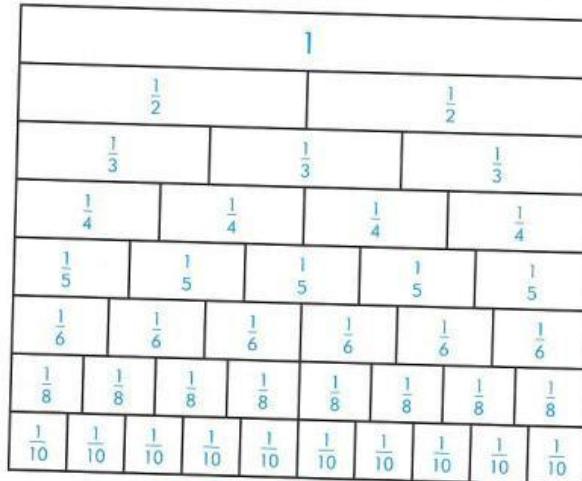
e  $\frac{4}{4} \square \frac{10}{10}$

f  $\frac{3}{3} \square \frac{6}{6}$

**5** Make up five of your own sentences showing equivalent fractions for the fraction wall.

you can use Workbook page 43

## Compare and order equivalent fractions



Use the equivalent fraction wall to help you complete these activities.

- 1** Fill in  $<$ ,  $=$  or  $>$  to make each number sentence true.

**a**  $\frac{1}{2}$    $\frac{5}{10}$

**b**  $\frac{6}{8}$    $\frac{3}{4}$

**c**  $\frac{1}{5}$    $\frac{2}{10}$

**d**  $\frac{5}{8}$    $\frac{1}{2}$

**e**  $\frac{3}{4}$    $\frac{7}{10}$

**f**  $\frac{1}{2}$    $\frac{5}{8}$

**g**  $\frac{3}{4}$    $\frac{1}{2}$

**h**  $\frac{7}{8}$    $\frac{3}{10}$

**i**  $\frac{7}{8}$    $\frac{3}{4}$

**j**  $\frac{1}{2}$    $\frac{1}{3}$

**k**  $\frac{1}{2}$    $\frac{1}{5}$

**l**  $\frac{1}{2}$    $\frac{3}{10}$

**m**  $\frac{3}{5}$    $\frac{3}{10}$

**n**  $\frac{4}{10}$    $\frac{1}{4}$

**o**  $\frac{7}{10}$    $\frac{6}{8}$

- 2** Rewrite each set of fractions in order from smallest to greatest.

**a**  $\frac{1}{2}$   $\frac{1}{4}$   $\frac{1}{3}$   $\frac{1}{10}$   $\frac{1}{8}$

**b**  $\frac{2}{3}$   $\frac{2}{5}$   $\frac{2}{8}$   $\frac{2}{10}$   $\frac{2}{2}$

**c**  $\frac{3}{5}$   $\frac{3}{8}$   $\frac{3}{10}$   $\frac{1}{2}$   $\frac{3}{4}$

**d**  $\frac{5}{5}$   $\frac{5}{10}$   $\frac{5}{8}$   $\frac{1}{5}$

you can use Workbook page 44

These strips are both divided into tenths.

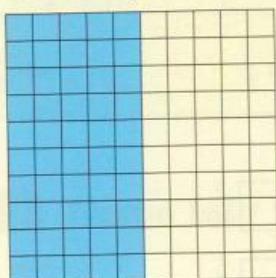
We can write the fractions shown by each part as an ordinary fraction in tenths or as a decimal fraction using the decimal point.

$\frac{1}{10}$									
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

$$\frac{3}{10} = 0.3$$

$$\frac{5}{10} = 0.5 \quad \text{but } \frac{5}{10} \text{ is also equivalent to } \frac{1}{2}, \text{ so } 0.5 = \frac{1}{2}$$

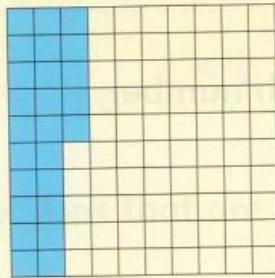
These squares are divided into 100 equal parts. Each part is  $\frac{1}{100}$ th of the square. The shaded part of the square can be shown as an ordinary fraction and as a decimal.



$$\frac{50}{100} = 0.5$$

$$\frac{50}{100} = \frac{1}{2}$$

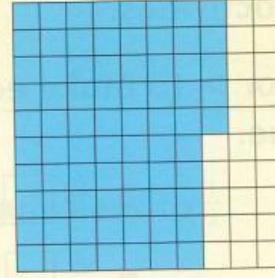
$$\frac{1}{2} = 0.5$$



$$\frac{25}{100} = 0.25$$

$$\frac{25}{100} = \frac{1}{4}$$

$$\frac{1}{4} = 0.25$$



$$\frac{75}{100} = 0.75$$

$$\frac{75}{100} = \frac{3}{4}$$

$$\frac{3}{4} = 0.75$$

**1** Write a decimal for each fraction.

a  $\frac{1}{10}$

d  $\frac{3}{10}$

b  $\frac{7}{10}$

e  $\frac{5}{10}$

c  $\frac{75}{100}$

f  $\frac{25}{100}$

**2** Match the ordinary fractions with their decimal equivalents.

Write your answers using equals signs like this:  $\frac{1}{2} = 0.5$

a  $\frac{8}{10}$  0.5

$\frac{3}{10}$  0.8

$\frac{5}{10}$  0.3

b  $\frac{1}{2}$  0.25

$\frac{3}{4}$  0.5

$\frac{25}{100}$  0.75

c  $\frac{1}{2}$  0.8

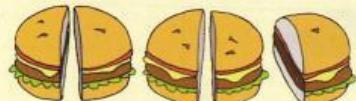
$\frac{9}{10}$  0.5

$\frac{80}{100}$  0.9

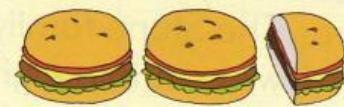
you can use Workbook page 45

## Mixed numbers

How many whole sandwiches can you make with these halves?

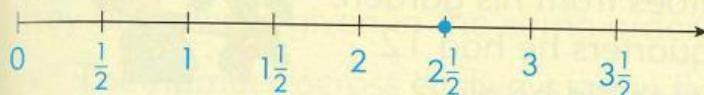


There are 5 halves. If we put them together we would have  $2\frac{1}{2}$  sandwiches.

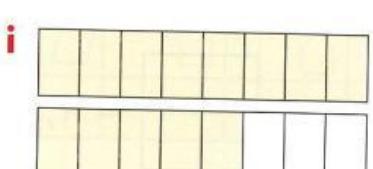
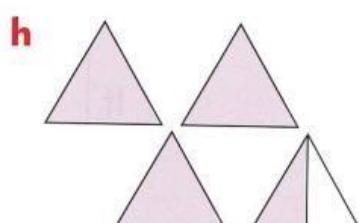
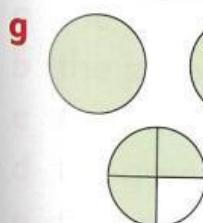
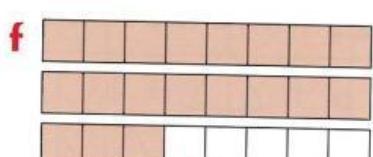
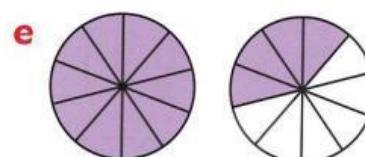
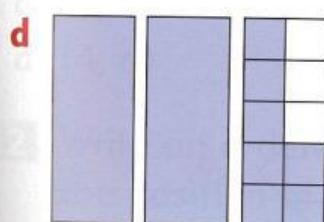
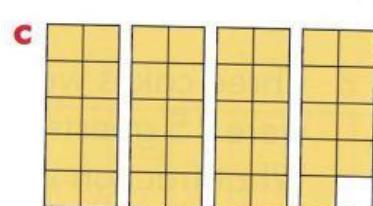
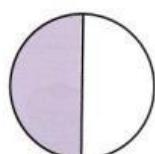
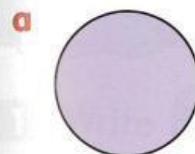


$2\frac{1}{2}$  is a mixed number. It is bigger than 2 and smaller than 3.

We can show  $2\frac{1}{2}$  on a number line like this:



**1** What fraction is coloured? Write the answers as mixed numbers.



**2** Draw number lines to show the position of each mixed number.

a  $2\frac{1}{2}$

b  $5\frac{3}{4}$

c  $1\frac{2}{3}$

d  $3\frac{1}{8}$

e  $1\frac{1}{10}$

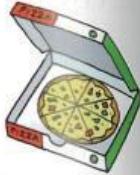
f  $2\frac{3}{5}$

you can use Workbook page 46

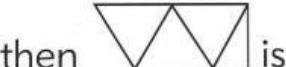


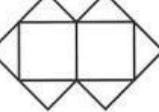
**1** Solve these problems. Draw pictures to help you.

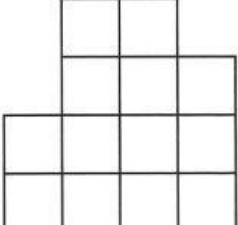
- a** The Stone family ordered 2 pizzas. Each pizza was cut into eighths. The family ate 15 pieces. What fraction of the pizzas did they eat?
- b** Steve picked some tomatoes from his garden. When he cut them into quarters he had 12 pieces. How many tomatoes did he pick?
- c** Four people ordered 5 chapattis with their curry. How much did each person get if they were shared exactly?
- d** Three cakes were cut up for the party. There were 15 guests and each had a fair share. What fraction was each cake cut into?

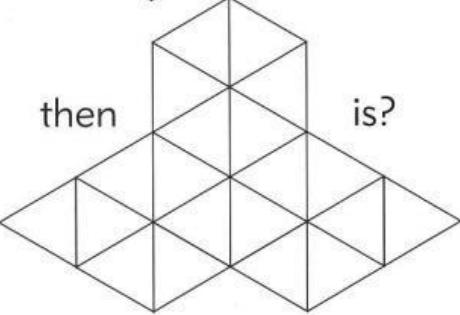


**2** Write the mixed number.

- a** If  $\triangle = 1$ ,  
then  is?

- b** If  $\square = 1$ ,  
then  is?

- c** If  $\bigboxplus = 1$ ,  
then  is?

- d** If  $\bigtriangleup = 1$ ,  
then  is?

**3** Make up some similar puzzles for a friend to try.