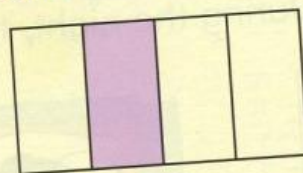


Remember, a fraction is a part of an object or amount.
This shape is divided into four equal parts.



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 $\frac{1}{2}$
e $\frac{4}{5}$

b $\frac{3}{4}$
f $\frac{7}{8}$

c $\frac{2}{3}$
g $\frac{3}{10}$

d $\frac{5}{8}$
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 $\frac{7}{10} + \square = 1$

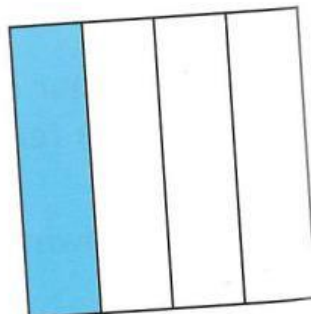
h $\frac{2}{10} + \square = 1$



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

123

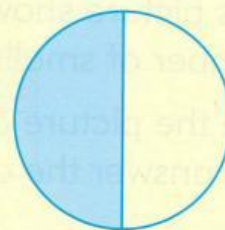
This circle has been divided into two equal parts.

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.

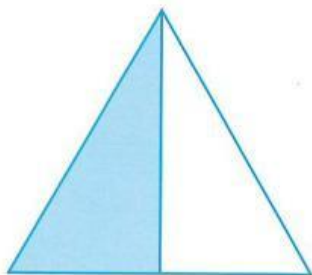
$\frac{1}{2} + \frac{1}{2} = 1$ whole



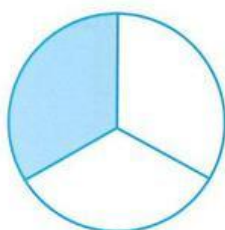
For each shape, write:

- 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 $\frac{1}{2} + \frac{1}{2} = 1$

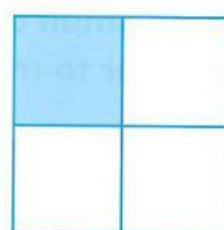
1



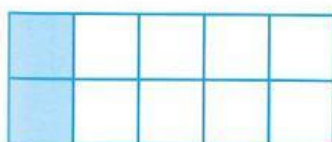
2



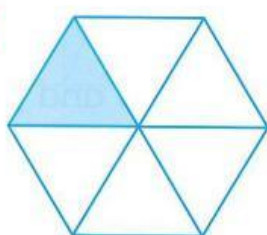
3



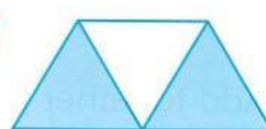
4



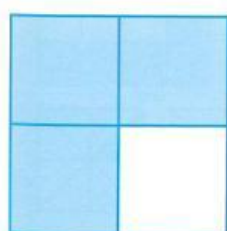
5



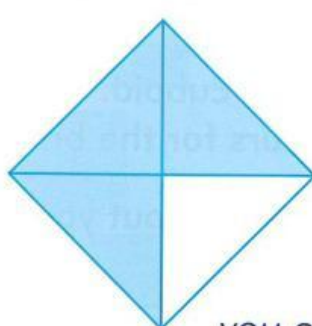
6



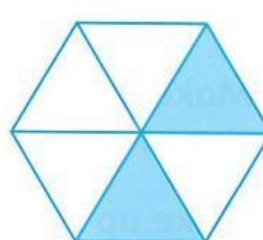
7



8



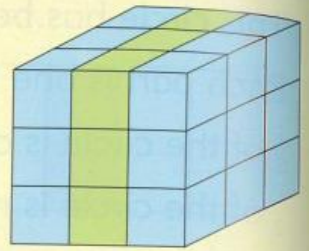
9



you can use Workbook page 40

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

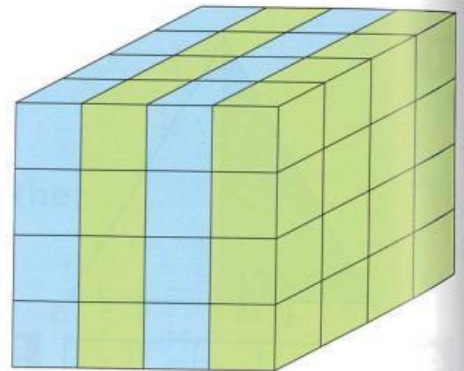
Use the picture or make your own cube to help you answer the questions.



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?

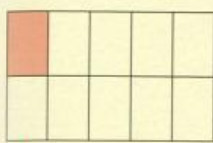
3 Make or draw your own cuboid. Try a different size or use three colours for the bricks.

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

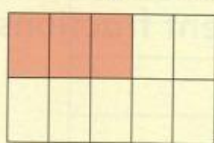
you can use Workbook page 41

Comparing fractions

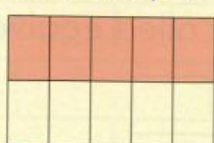
Look at the shaded part of each shape.



$\frac{1}{10}$



$\frac{3}{10}$



$\frac{5}{10}$

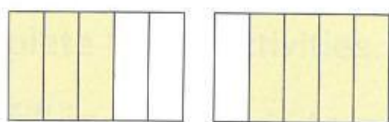


$\frac{9}{10}$

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

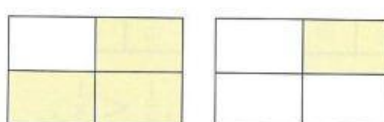
You can write $\frac{1}{10} < \frac{3}{10}$
 You can write $\frac{9}{10} > \frac{3}{10}$

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



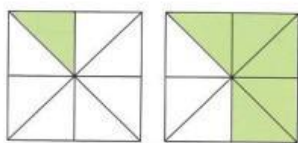
$\frac{3}{5}$

$\frac{4}{5}$



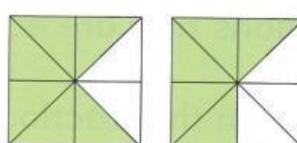
$\frac{3}{4}$

$\frac{1}{4}$



$\frac{1}{8}$

$\frac{5}{8}$



$\frac{7}{8}$

$\frac{5}{8}$



$\frac{2}{10}$

$\frac{5}{10}$

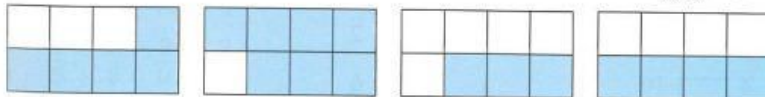


$\frac{9}{10}$

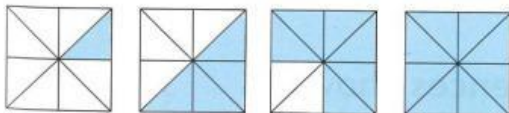
$\frac{8}{10}$

2 Write these fractions in order from biggest to smallest.

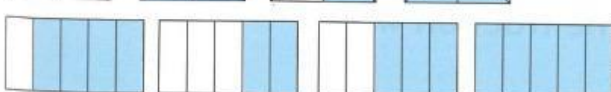
a



b

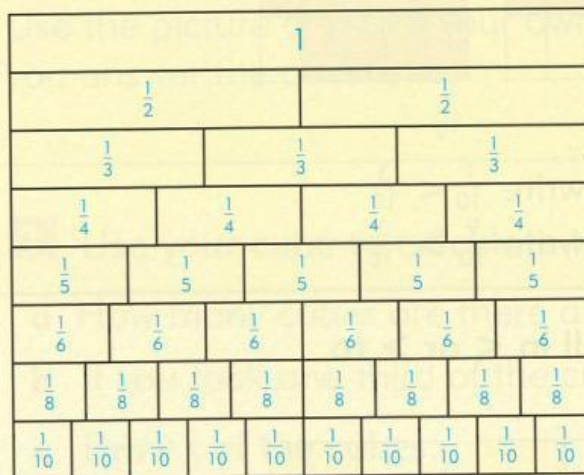


c



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

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

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

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

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

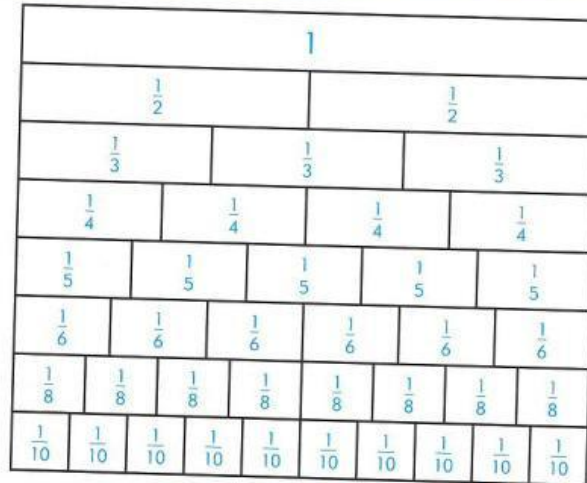
f $\frac{3}{3}$ $\frac{6}{6}$

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

123



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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.

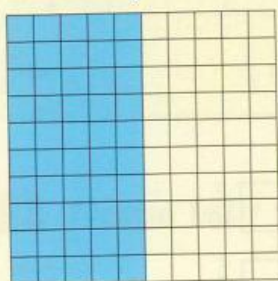
We can write the fractions shown by each part as an ordinary fraction in tenths or as a decimal fraction using the decimal point.

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

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

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

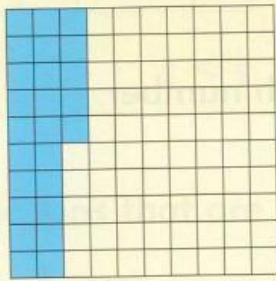
These squares are divided into 100 equal parts. Each part is $\frac{1}{100}$ th of the square. The shaded part of the square can be shown as an ordinary fraction and as a decimal.



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

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

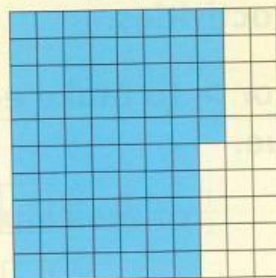
$$\frac{1}{2} = 0.5$$



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

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

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



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

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

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

1 Write a decimal for each fraction.

a $\frac{1}{10}$

b $\frac{7}{10}$

c $\frac{75}{100}$

d $\frac{3}{10}$

e $\frac{5}{10}$

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

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

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

$\frac{3}{10}$ 0.8

$\frac{3}{4}$ 0.5

$\frac{9}{10}$ 0.5

$\frac{5}{10}$ 0.3

$\frac{25}{100}$ 0.75

$\frac{80}{100}$ 0.9

you can use Workbook page 45

Mixed numbers

123

How many whole sandwiches can you make with these halves?

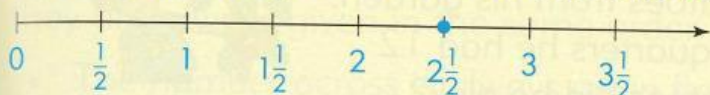


There are 5 halves. If we put them together we would have $2\frac{1}{2}$ sandwiches.

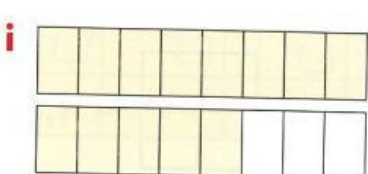
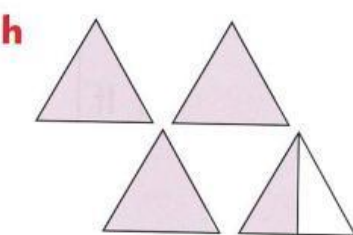
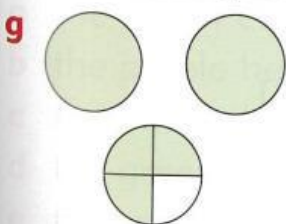
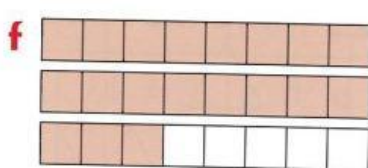
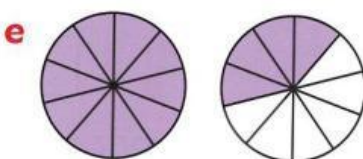
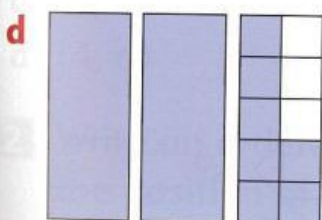
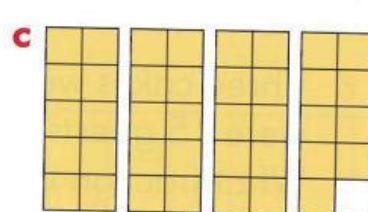
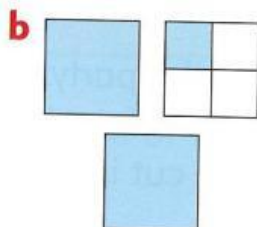
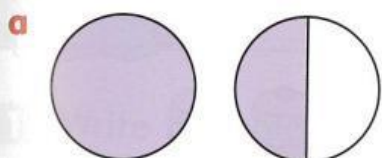
$2\frac{1}{2}$ is a mixed number. It is bigger than 2 and smaller than 3.



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 $2\frac{3}{5}$

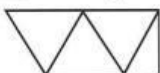


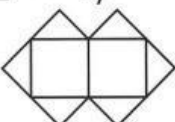
1 Solve these problems. Draw pictures to help you.

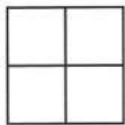
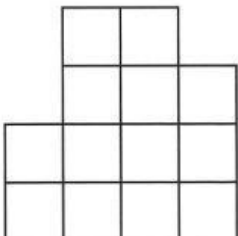
- The Stone family ordered 2 pizzas. Each pizza was cut into eighths. The family ate 15 pieces. What fraction of the pizzas did they eat?
- Steve picked some tomatoes from his garden. When he cut them into quarters he had 12 pieces. How many tomatoes did he pick?
- Four people ordered 5 chapattis with their curry. How much did each person get if they were shared exactly?
- 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?

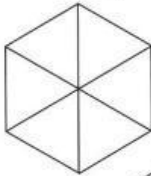
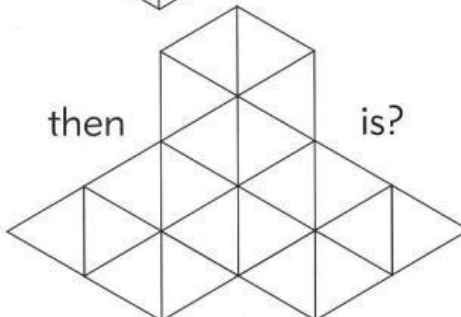


2 Write the mixed number.

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

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

- c** If  = 1,
then  is?

- d** If  = 1,
then  is?

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