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The first page of a lesson is a maths problem. Don't look at the next page until you have had a go! The third and fourth pages give you practice, so you can check your understanding.



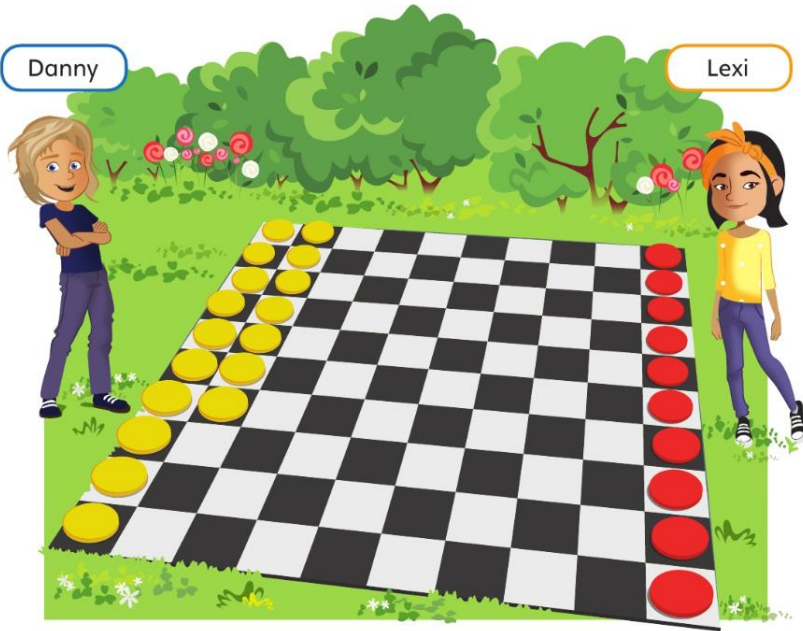
Lesson 1

Tenths and hundredths

Discover

Danny

Lexi



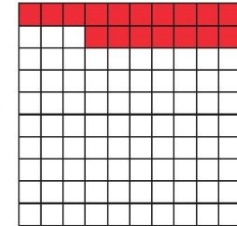
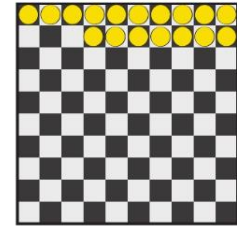
- 1 a) What fraction of the board is each square?
What fraction of the board has Danny covered with his counters?
- b) What fraction of the board has Lexi covered with her counters?

Share

- a) There are 100 squares. Each square is worth 1 **hundredth** ($\frac{1}{100}$).
Danny has covered 17 squares out of 100 or one full row and 7 extra squares.
As a fraction, this looks like: $\frac{17}{100}$.
Danny has covered $\frac{17}{100}$ of the board.



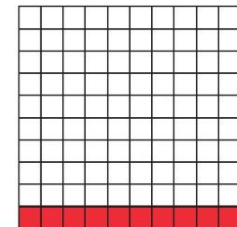
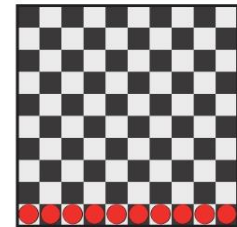
There are 10 rows, so 1 row is $\frac{1}{10}$ of the board.



- b) Lexi has covered 10 out of 100 squares.
This can be written as a fraction: $\frac{10}{100}$.

$$\frac{10}{100} = \frac{1}{10}$$

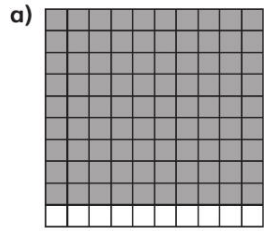
Lexi has covered $\frac{10}{100}$ or $\frac{1}{10}$ of the board.



Lesson 1

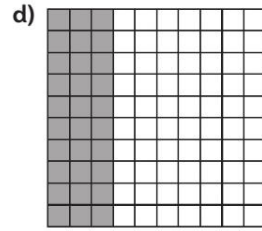
Tenths and hundredths

1 What fraction of each grid is shaded?



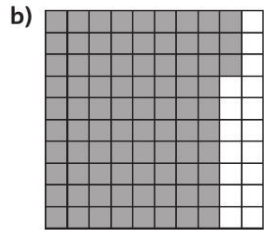
tenths are shaded.

$\frac{\quad}{10}$ are shaded.



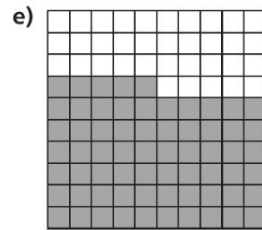
tenths are shaded.

are shaded.



hundredths are shaded.

$\frac{\quad}{100}$ are shaded.



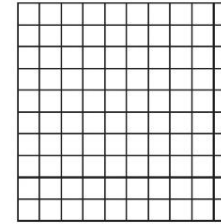
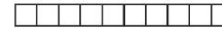
hundredths are shaded.

$\frac{\quad}{100}$ are shaded.



tenths are shaded.

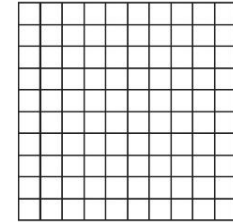
2 a) Represent $\frac{7}{10}$ on each of the grids below.



b) Show $\frac{31}{100}$ on this grid.

What fraction of your grid is not shaded?

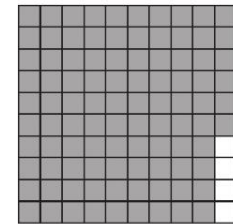
are not shaded.



3 Andy says that $\frac{96}{100}$ of the grid is shaded.

Bella says that $\frac{9}{10} + \frac{6}{100}$ of the grid is shaded.

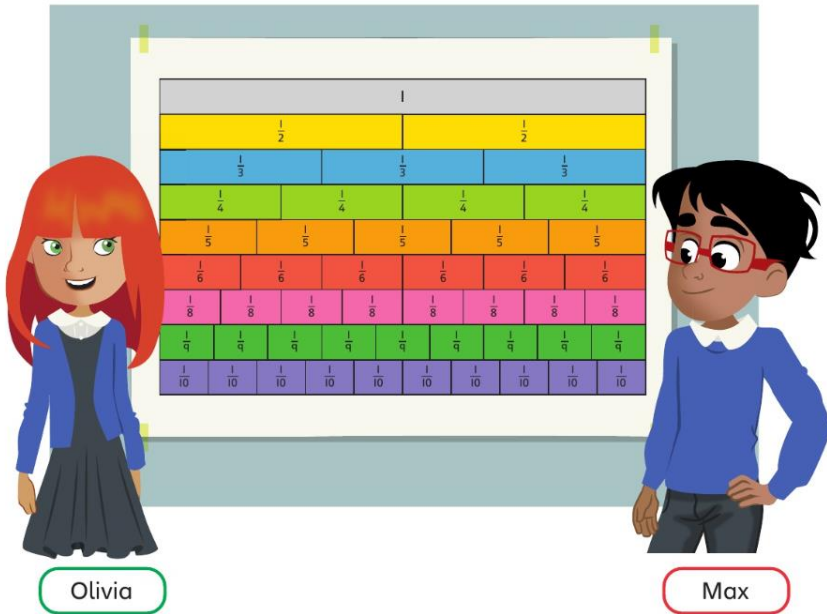
Emma says that $\frac{8}{10} + \frac{16}{100}$ of the grid is shaded.



Explain why they are all correct.

Equivalent fractions

Discover



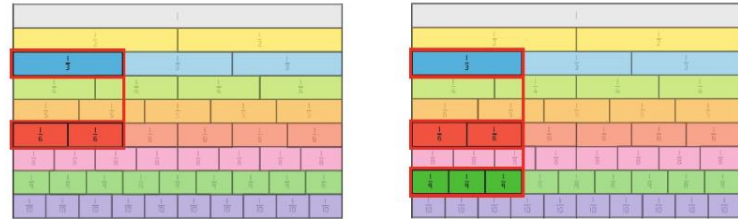
Olivia

Max

- 1 a) Use the fraction wall to show that $\frac{1}{3}$ is equivalent to $\frac{2}{6}$.
What other fraction on the wall is equivalent to $\frac{1}{3}$?
- b) Max says that $\frac{3}{4}$ is equivalent to $\frac{4}{6}$.
Use the fraction wall to decide whether Max is correct.

Share

- a) Look at the fraction wall to see which fractions line up with each other.

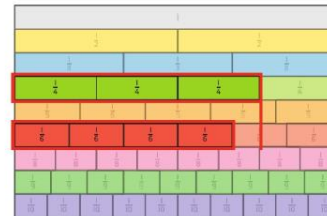


$\frac{1}{3}$ is equivalent to $\frac{2}{6}$.
 $\frac{1}{3}$, $\frac{2}{6}$ and $\frac{3}{9}$ are equivalent.

3, 6 and 9 are all in the 3 times-table!



- b) The fraction wall can help us see if these fraction are the same or not.



I can use the signs < and > to write a number sentence about these fractions: $\frac{3}{4} > \frac{4}{6}$ or $\frac{4}{6} < \frac{3}{4}$.

$\frac{3}{4}$ and $\frac{4}{6}$ do not line up on the fraction wall.

$\frac{3}{4}$ is not equivalent to $\frac{4}{6}$.

Max is incorrect.

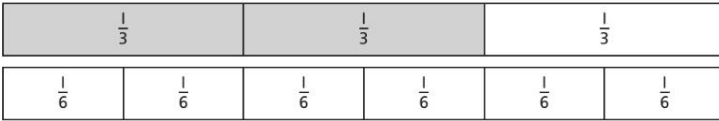


Lesson 2

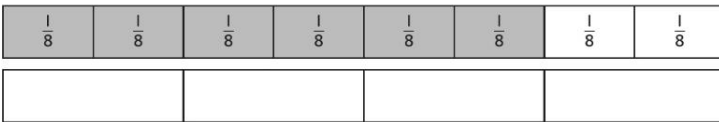
Equivalent fractions

1 Shade an equivalent fraction to the fraction given.


Write down the equivalent fractions.

a) 

$\frac{2}{3} = \frac{\square}{6}$

b) 

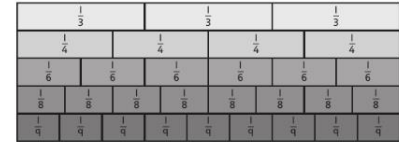
$\frac{\square}{\square} = \frac{\square}{\square}$

c) 

$\frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square}$

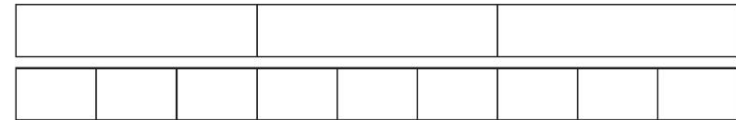
2 Use the fraction wall to say whether these fractions are equivalent or not.

- a) $\frac{5}{8}$ _____ equal to $\frac{1}{2}$.
- b) $\frac{3}{6}$ _____ equal to $\frac{3}{4}$.
- c) $\frac{4}{8}$ _____ equal to $\frac{1}{4}$.
- d) $\frac{4}{6}$ _____ equal to $\frac{6}{4}$.
- e) $\frac{4}{4}$ _____ equal to $\frac{9}{4}$.



3 Use the fraction strips to show that these statements are true.

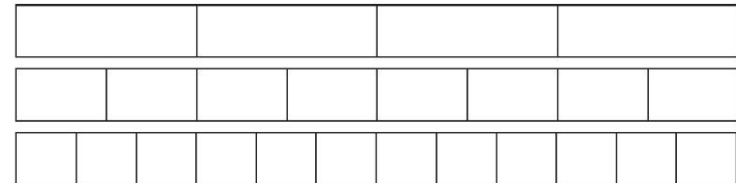
a) $\frac{1}{3}$ is equal to $\frac{3}{9}$.



b) $\frac{2}{5}$ is equal to $\frac{4}{10}$.

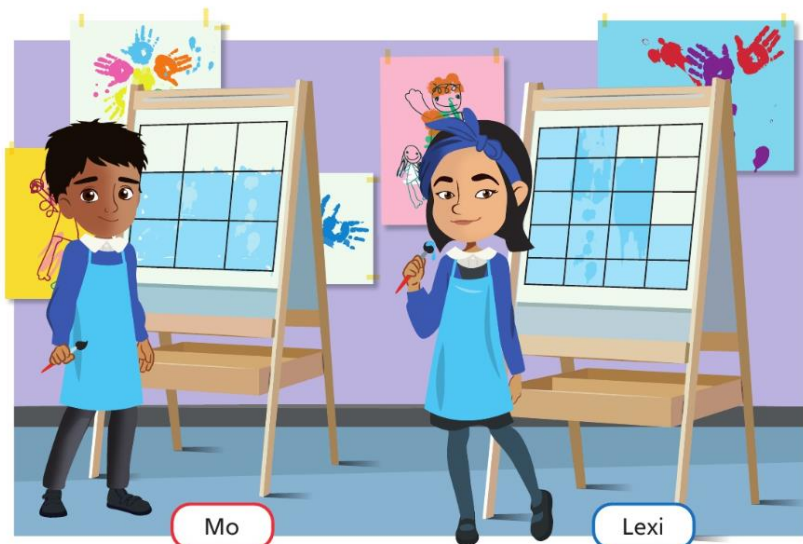


c) $\frac{1}{4}$ is equal to $\frac{2}{8}$ which is equal to $\frac{3}{12}$.



Simplifying fractions

Discover



Mo

Lexi

- 1** a) What fraction of Mo's picture is shaded?
Is there more than one answer?
- b) What fraction of Lexi's picture is shaded?
What is the **simplest fraction** you can find?

Share

- a) In Mo's picture, 6 out of 9 squares are shaded ($\frac{6}{9}$).

You can also see that $\frac{2}{3}$ of the shape is shaded. There are 3 rows in total and 2 rows are shaded.

$$\frac{6}{9} = \frac{2}{3}$$

$\div 3$
 $\div 3$

$\frac{2}{3}$ of Mo's picture is shaded.

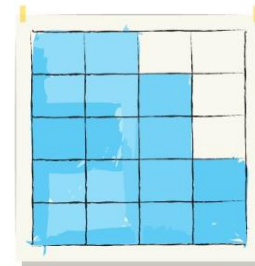
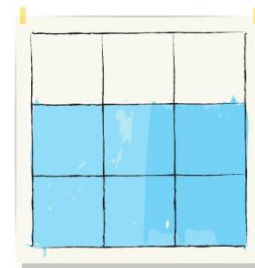
- b) $\frac{16}{20}$ of Lexi's picture is shaded.

I need to find a number that divides into both the numerator and denominator. I can divide by 2 and then 2 again.

$$\frac{16}{20} = \frac{8}{10} = \frac{4}{5}$$

$\div 2$ $\div 2$ $\div 4$
 $\div 2$ $\div 2$ $\div 4$

$\frac{4}{5}$ is the simplest fraction.



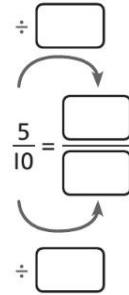
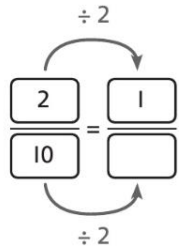
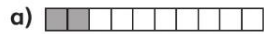
I think that it is quicker to divide by 4.

In the simplest fraction, there are no numbers that divide into both the numerator and the denominator.

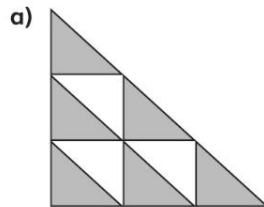
Lesson 3

Simplifying fractions

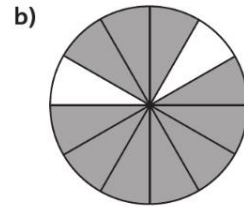
1 What fraction of each shape is shaded?
Simplify your fraction.



2 What fraction of each shape is shaded?
Give your answer in its simplest form.



$$\frac{\square}{\square} = \frac{\square}{\square}$$



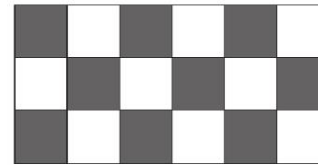
$$\frac{\square}{\square} = \frac{\square}{\square}$$

3 Draw lines to match each diagram to its fraction in its simplest form.



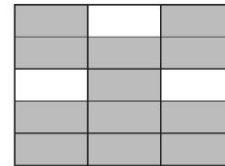
$\frac{2}{5}$

$\frac{4}{5}$



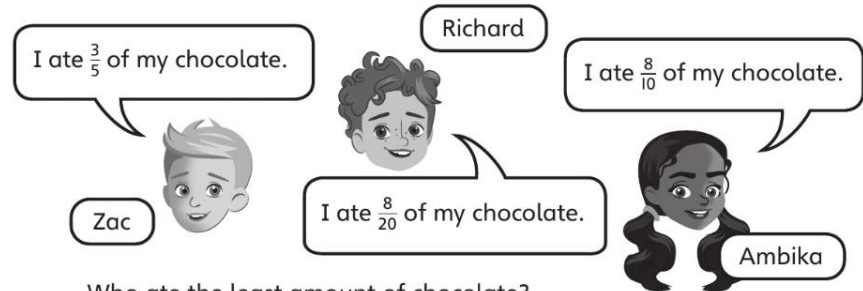
$\frac{1}{3}$

$\frac{1}{2}$



$\frac{3}{4}$

4 A group of friends are all given the same chocolate bar. After a week they have eaten different amounts.



Zac: I ate $\frac{3}{5}$ of my chocolate.

Richard: I ate $\frac{8}{10}$ of my chocolate.

Ambika: I ate $\frac{8}{20}$ of my chocolate.

Who ate the least amount of chocolate?

_____ ate the least amount of chocolate.

Fractions greater than 1

Discover

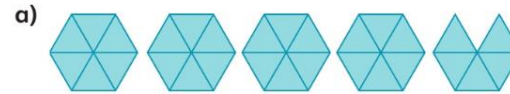


Jamilla

Richard

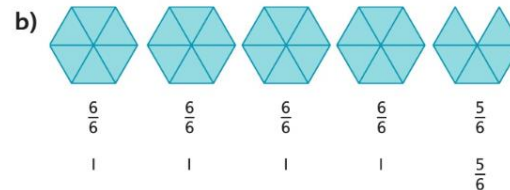
- 1 a) How many whole hexagons can Jamilla and Richard make?
How many triangles will be left over?
- b) Write the total number of hexagons as a fraction.

Share

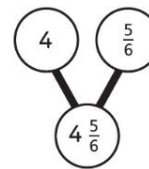


I counted up in 6s until there were no more triangles left.

Jamilla and Richard can make 4 whole hexagons.
They will have 5 triangles left over.



There are 4 whole hexagons and one with $\frac{5}{6}$.
There are $4\frac{5}{6}$ hexagons.



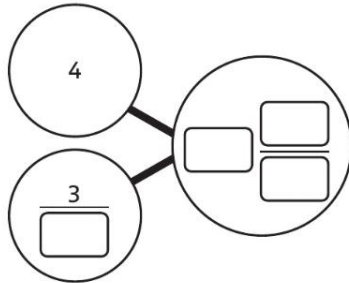
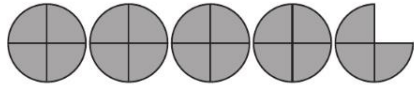
I can write the number of whole hexagons and the fraction of a hexagon in a part-whole model.

A number with wholes and a fraction is called a mixed number.

Lesson 4

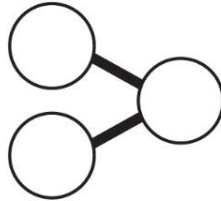
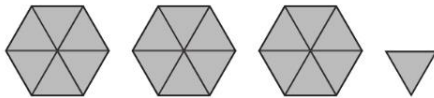
Fractions greater than 1

- 1 a) Complete the part-whole model for the number of circles.



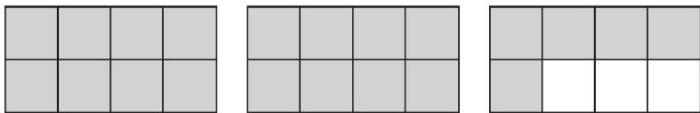
There are wholes and $\frac{\text{}{\text{}}$ or $\text{}$ $\frac{\text{}{\text{}}$ circles.

- b) Complete the part-whole model for the number of hexagons.



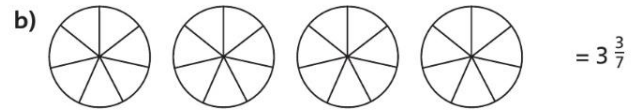
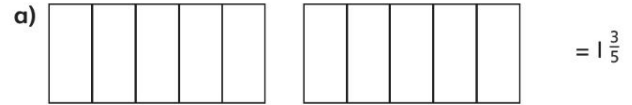
There are wholes and $\frac{\text{}{\text{}}$ or $\text{}$ $\frac{\text{}{\text{}}$ hexagons.

- 2 Write the number of shaded rectangles as a mixed number.

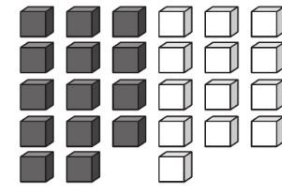


There are wholes and $\frac{\text{}{\text{}}$ or $\text{}$ $\frac{\text{}{\text{}}$ rectangles shaded.

- 3 Shade the shapes so that they show the correct number.



- 4 Kate is tidying away some toy cubes.
6 cubes fit into one box.



- a) Kate has grey cubes.
- b) Kate has full boxes of grey cubes and cubes left over.
- c) Kate has $\frac{\text{}{\text{}}$ boxes of grey cubes.
- d) Kate has white cubes.
- e) Kate has full boxes of white cubes and cubes left over.
- f) Kate has $\frac{\text{}{\text{}}$ boxes of white cubes.