



# Fractions



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Series Author:	
Nicola Herringer	
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### Introducing fractions – modelling fractions

Here we are going to explore fractions. You will need: ■ a copy of this page ■ scissors ■ a paper bag ■ coloured pencils (blue, red, yellow and orange) Instructions: **a** Colour this strip blue. Cut it out. Label it 1 whole. 1 whole \_\_\_\_\_ **b** Colour this strip red. Cut it out. Fold it in half along the line and label each part  $\frac{1}{2}$ . <u>1</u> 2 c Colour this strip yellow. Cut it out. Fold it in half and half again along the lines and label each part  $\frac{1}{4}$ . \_\_\_\_\_

1	1	1	1
4	4	4	4

**d** Colour this strip orange. Cut it out. Fold it in half three times and label each part  $\frac{1}{8}$ .

1	1	1	1	1	1	1	1
8	8	8	8	8	8	8	8
		1 1 1 1	1 1 1	1 1 1	1 1 1 1	1 1 1	

e Cut them carefully along the folded lines and place the pieces inside your paper bag. This is your fraction kit!



You will need: ■ your fraction kit ■ a die



Number on die	Fraction piece from kit
1 or 6	$\frac{1}{2}$ red
2 or 5	$\frac{1}{4}$ yellow
3 or 4	$\frac{1}{8}$ orange

#### Game 1

The aim of this game is get as close to one whole as possible by placing pieces from your fraction kit on top of the whole.

Each player starts the game with the blue piece of paper from the kit. This is 1 whole.

Player 1 rolls the die and places a matching fraction piece on their whole.

Player 2 rolls the die and places a matching fraction piece on their whole.

Continue taking turns placing fraction pieces on top of the whole.

The winner is the player who is the closest to one whole without going over.

#### Game 2

The aim of this game is to be the first to reveal the whole piece of paper from your fraction kit.

Each player starts the game with the whole covered with 2 halves.

Player 1 rolls the die and takes off that fraction. Players may need to swap pieces first. For example, if you roll  $\frac{1}{4}$  first, you need to swap  $\frac{1}{2}$  for  $\frac{2}{4}$  then you can take off  $\frac{1}{4}$ . Player 2 rolls the die and takes off that fraction, swapping pieces if needed. The winner is the player who is the first to reveal the whole piece of paper.



## Introducing fractions – modelling fractions

Show one half in a different way on each rectangle: b а С Show how each shape can be divided into quarters: b а С Colour the fractions of each shape: **b** three quarters **d** three quarters one half a two quarters С Answer these sharing problems. Draw a picture to match: **a** I have 10 lollies and I have to share them with my brother. out of 5 10 How many do we each get? **b** There are 12 biscuits to be shared among 3 people. out of 12 4 How many does each person get?



3

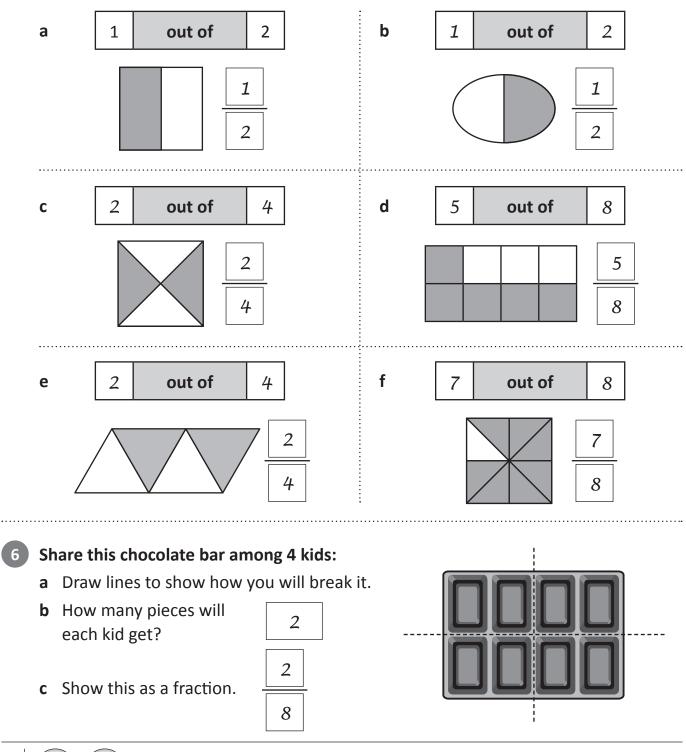
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TOPIC

# Introducing fractions – modelling fractions

Fractions are written like this:Image: Image: Image:

5 Look at these fraction diagrams and label them.

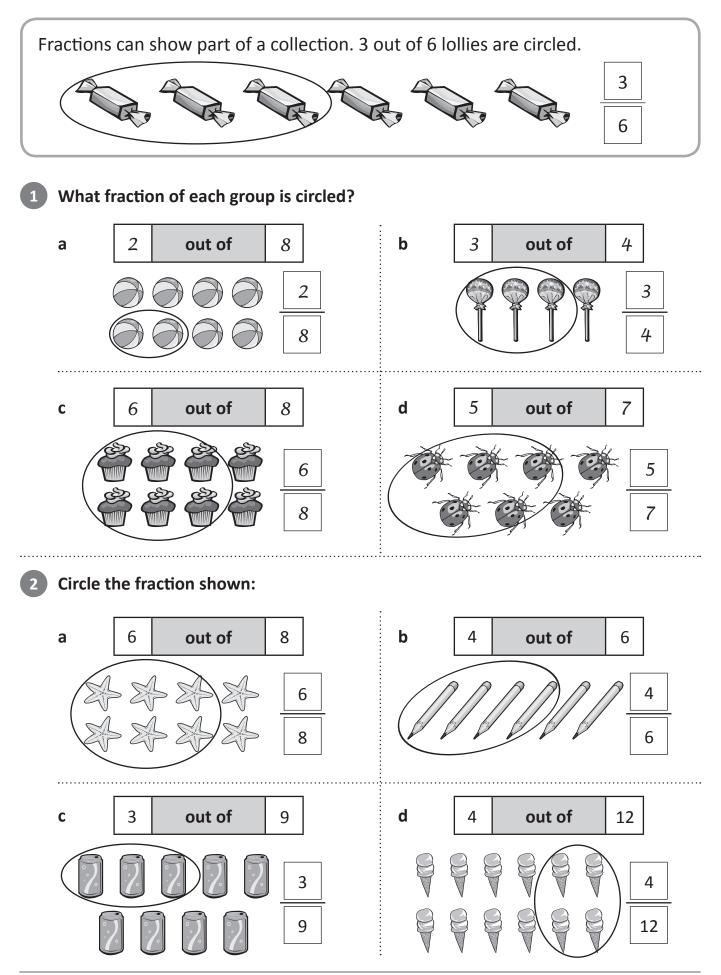


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### Introducing fractions – fractions of a collection





5

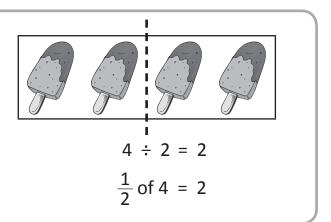
#### Introducing fractions – fractions of a collection

Finding a fraction of different amounts is like division. Look at this tray of 4 ice creams. We can see that  $\frac{1}{2}$  of this group is 2. This is the same as dividing 4 by 2.

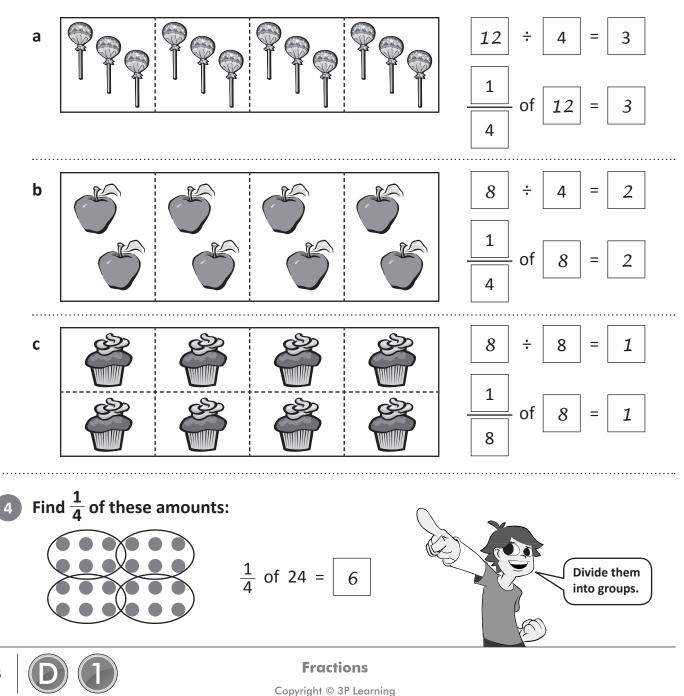
6

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Look at these fraction pictures. They have been divided into groups to help you. Complete the boxes to show how division and fractions are related. The first one has been done for you.

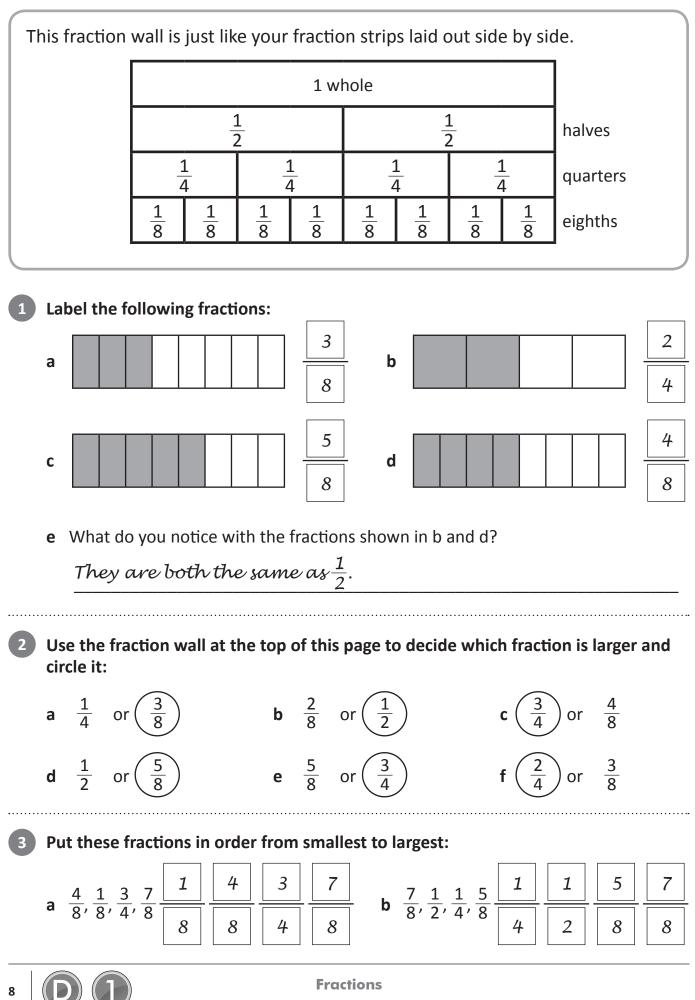


### Introducing fractions – fractions of a collection

5	Sh	ade the fraction of these amounts:
	а	$\begin{array}{c} 1 \\ 1 \\ 4 \end{array} \text{ of } 8 = 2 \end{array}$
	b	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
6	Fir	nd these amounts. Use counters to help you.
	а	How many sweets did I get if I was allowed $\frac{1}{4}$ of 24?6 sweets
	b	$\frac{1}{3}$ of all the kids in my class have a pet dog. How many have a dog if there are 30 kids in my class? <u>10</u> kids
	С	$\frac{1}{5}$ of all the kids in my class ate an apple at recess. How many apples were eaten if there were 30 kids in my class? <u>6</u> apples
7	ch	ckson loves to bake cookies. He is famous for his triple choc ip delights. Work out how many each person received if ckson baked a batch of 24 triple choc chip delights.
	а	His best friend Hamish got $\frac{1}{4}$ . Hamish got <u>6</u> triple choc chip delights.
	b	He gave $\frac{1}{2}$ away to the teachers in the staff room.
		The teachers got <u>12</u> triple choc chip delights.
	C	He gave the rest to his next door neighbour Mr Wallis. Mr Wallis got <u>6</u> triple choc chip delights.



### Introducing fractions – comparing and ordering fractions



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## Introducing fractions – comparing and ordering fractions

#### **Each player will need: •** to cut out the fraction cards below

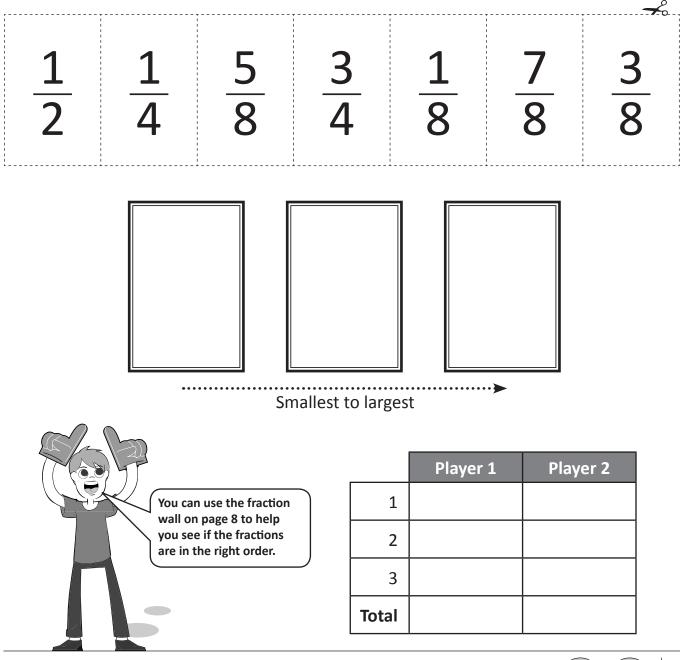
This is a game for 2 players. Choose one player to be the dealer.

Each player cuts out their own set of fraction cards.

The dealer shuffles the cards well and places them in one stack in the centre.

Player 1 draws 3 cards, one at a time and places them from left to right in each box, from smallest to largest. If they are in the correct order, the player scores 5 points. If they are not in the correct order, they do not score any points. Player 2 then has their turn.

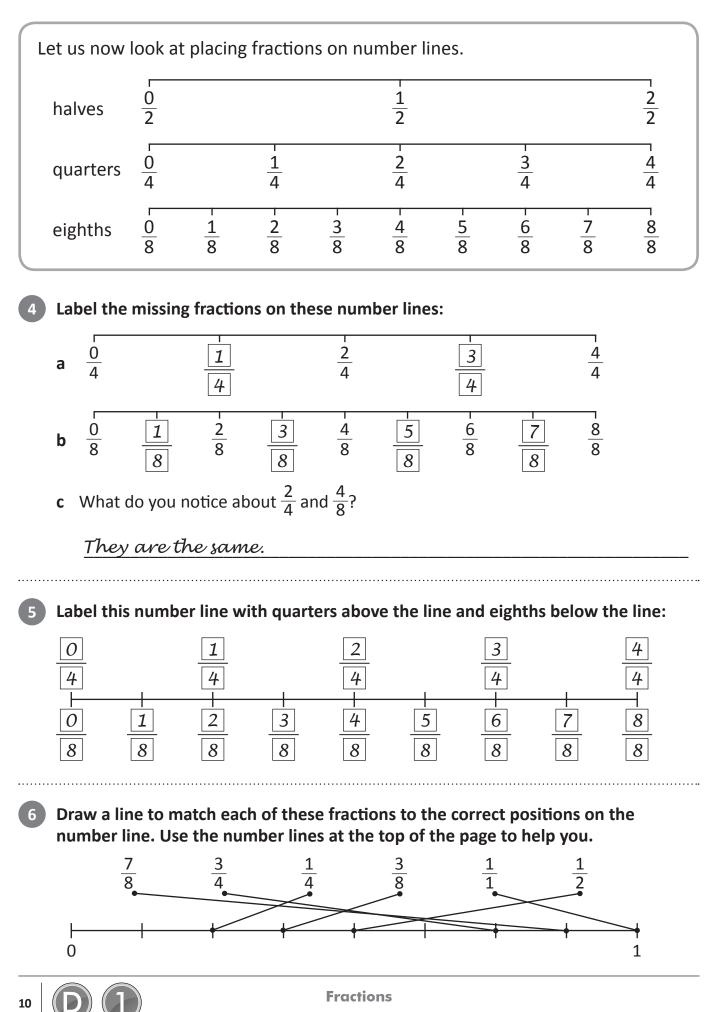
The winner is the player with the largest score after 3 turns each.





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### Introducing fractions – comparing and ordering fractions



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#### **Fraction bingo**

#### apply



This is a game for 3 to 4 players. Each player will need the fraction board below and some counters. You will also need to cut out one copy of the flash cards on page 12.





Choose one player to be the caller. The rest of the players fill their fraction boards with any of the following fractions:

 $\frac{1}{2}, \ \frac{1}{4}, \ \frac{2}{4}, \ \frac{3}{4}, \ \frac{4}{4}, \ \frac{1}{8}, \ \frac{2}{8}, \ \frac{3}{8}, \ \frac{4}{8}, \ \frac{5}{8}, \ \frac{6}{8}, \ \frac{7}{8}, \ \frac{8}{8}$ 

The caller chooses a flash card from the pile and shows the players.

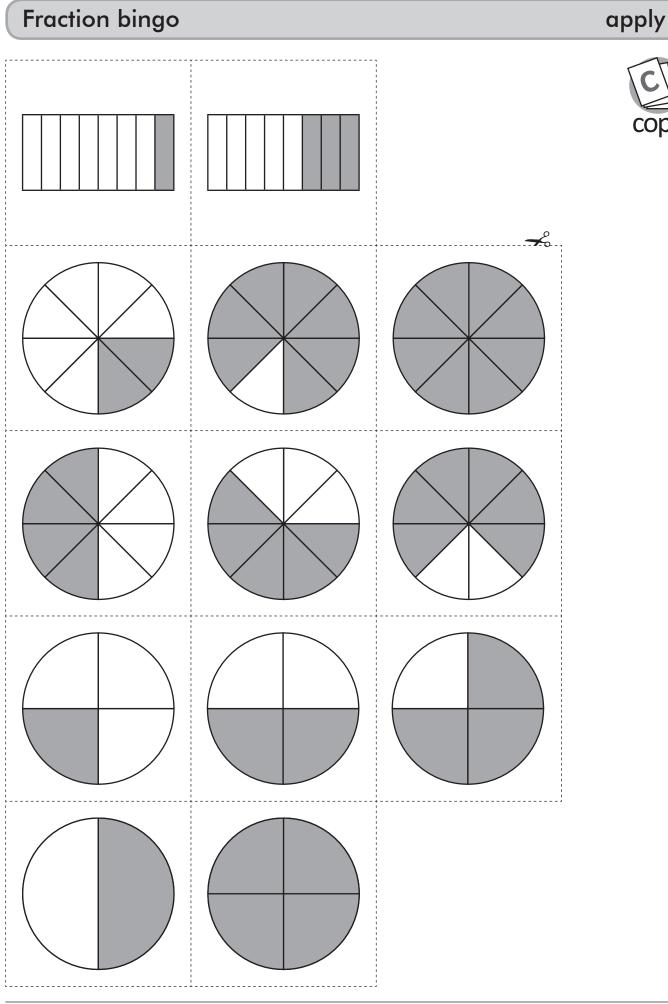
If a player has the fraction, they place a counter over it.

The winner is the first player to cover 3 in a row.

Swap roles and play again until everyone in the group has been the caller.

FRA	JGT(	<b>ION</b>	BIA	JG0
<u> </u>				
<u> </u>				

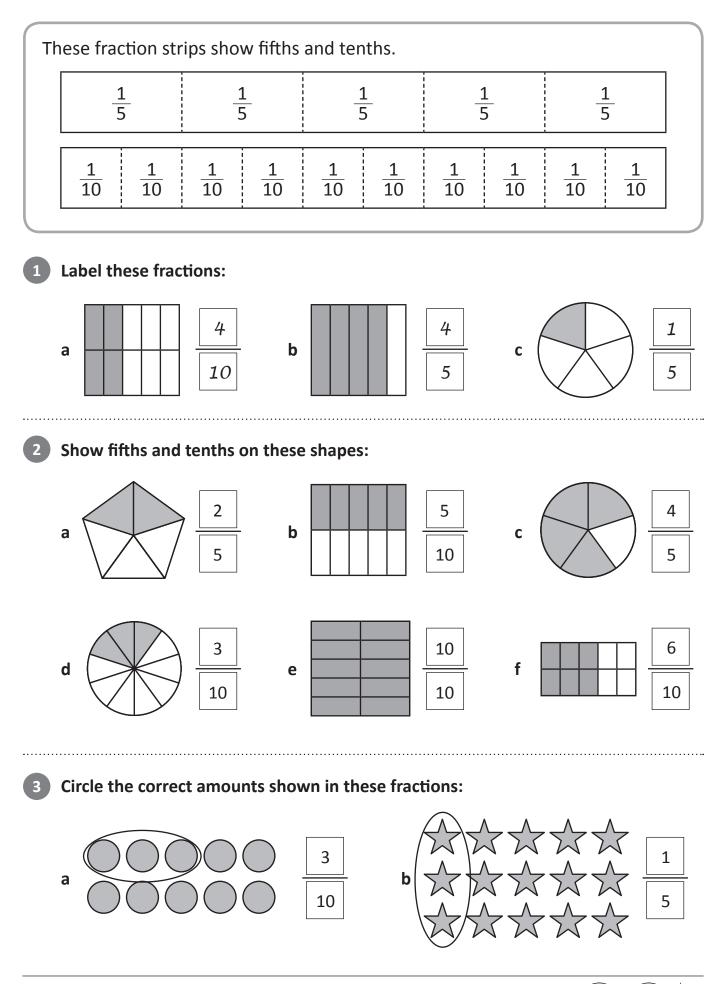






12

## Types of fractions – fifths and tenths



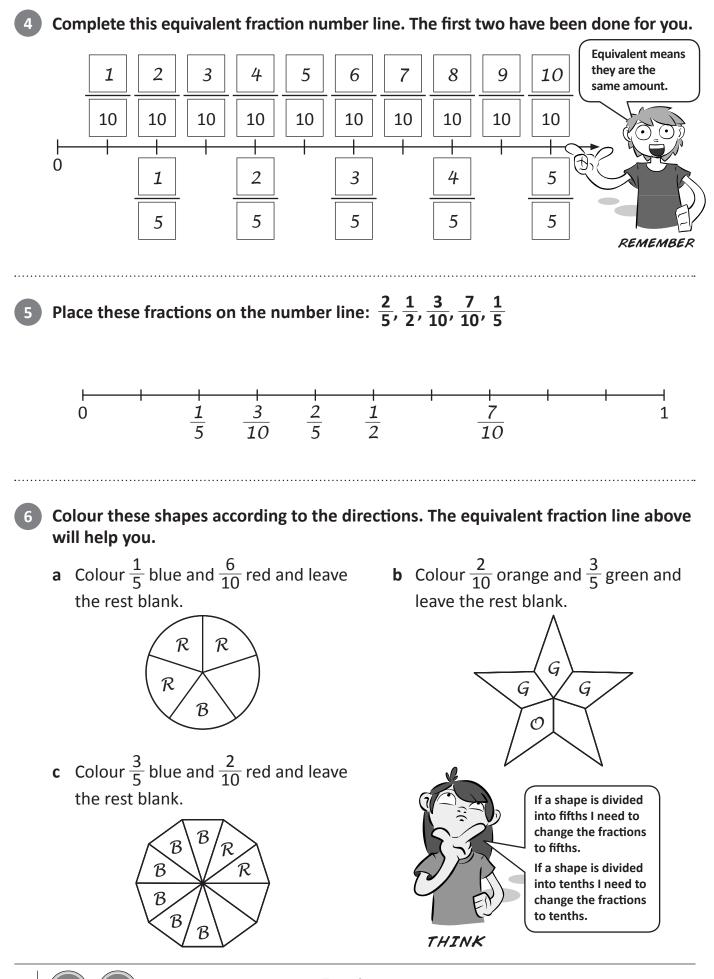
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13

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ΤΟΡΙΟ

### Types of fractions – fifths and tenths



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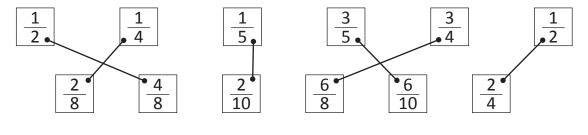
TOPIC

This fraction wall shows fractions that are equivalent. Equivalent fractions are fractions that are the same amount. How many equivalent fractions can you find?

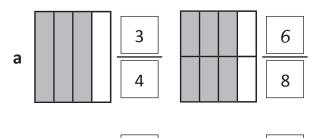
Label each row of the fraction wall and colour each strip a different colour. The first one has been done for you.

	$\frac{1}{2}$					halves	
$\frac{1}{4}$	$\frac{1}{4}$	-		$\frac{1}{4}$ $\frac{1}{4}$			quarters
$\begin{array}{c c} \frac{1}{8} & \frac{1}{8} \end{array}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	eíghths
$\frac{1}{5}$	1 1			<u>1</u> 5		<u>1</u> 5	fifths
$\begin{array}{c c} 1\\\hline 10 \end{array} \begin{array}{c c} 1\\\hline 10 \end{array}$	$\frac{1}{10}$ $\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$ $\frac{1}{1}$	$\frac{1}{0}$ $\frac{1}{10}$	$\frac{1}{10}$	tenths

Match the equivalent fractions in the top row with the fractions underneath by drawing a line to connect them. The first one has been done for you.

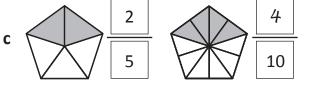


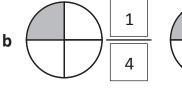
Complete these equivalent fraction models by shading and writing the equivalent fraction:

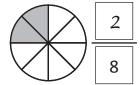


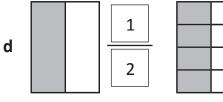
2

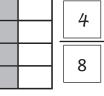
3











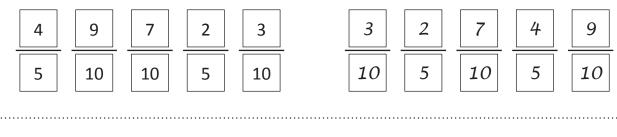


15

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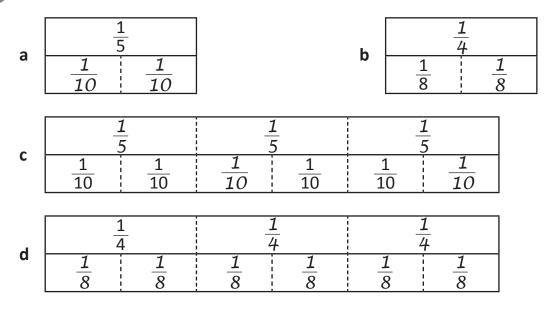
### Types of fractions – equivalent fractions

**Rewrite these fractions in order from smallest to largest:** 



5

Here is a fraction wall that has been broken up into pieces. Label the pieces:



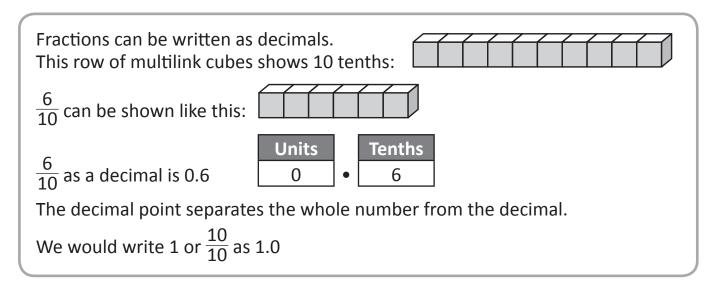
Match the equivalent fractions to find out an interesting animal fact: 6

**Q:** What is something that a rat can do for longer than a camel?

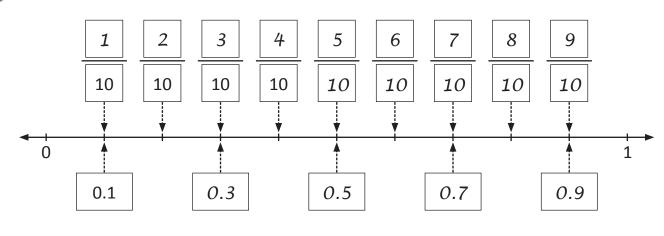
	~	2	A	<u> </u>			
First word:	$A = \frac{2}{4}$	$T = \frac{3}{4}$	$L = \frac{1}{5}$	$S = \frac{4}{10}$	)		
Second word:	$U = \frac{1}{5}$	$H = \frac{8}{10}$	$I = \frac{4}{10}$	$W = \frac{1}{2}$	<u>L</u> 2	$T = \frac{6}{8}$	$O = \frac{2}{8}$
Third word:	$A = \frac{2}{10}$	$T = \frac{1}{5}$	E = 1	$R = \frac{8}{10}$	<u>5</u>	W = $\frac{1}{2}$	
I	А	S	Τ				
$\frac{2}{10}$	<u>1</u> 2		<u>6</u> 8				
10	2	5	8				
W	I	Τ		0	U		
4 8	2	<u>3</u> 4	4	1	$\frac{2}{10}$	3	
8	5	4	5	4	10	4	
W	A	Τ	E	R			
$\frac{5}{10}$	1	2	$\frac{10}{10}$	4			
10	5	10	10	5			



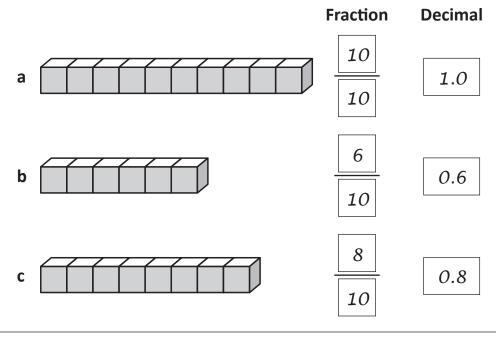
#### Types of fractions – tenths as decimals



Complete this number line showing equivalent tenths and decimals:



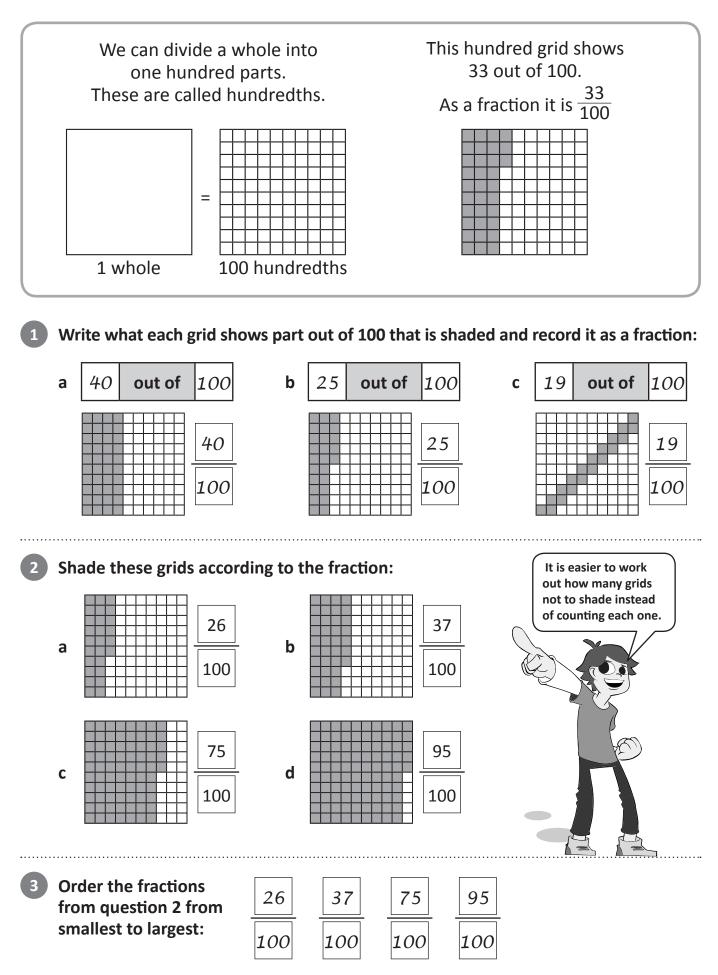
2 If a row of 10 multilink cubes is 1 whole, then label the other rows with a fraction and decimal:





Fractions Copyright © 3P Learning

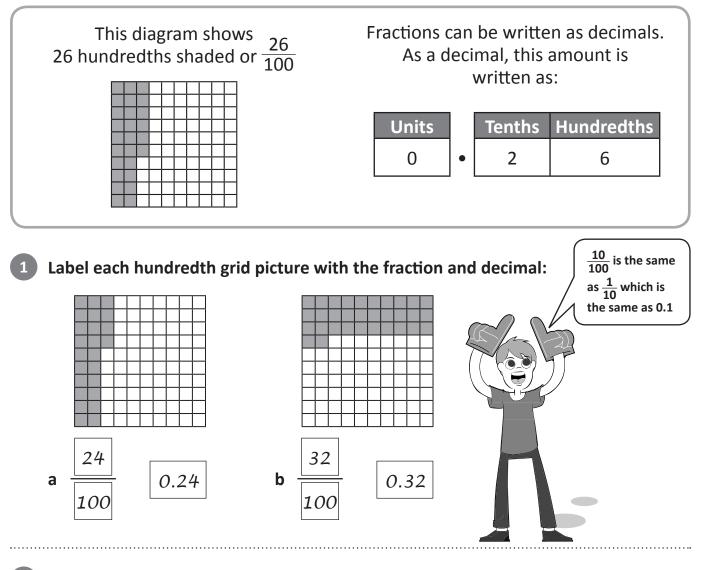
#### Types of fractions – introducing hundredths



18 D 2

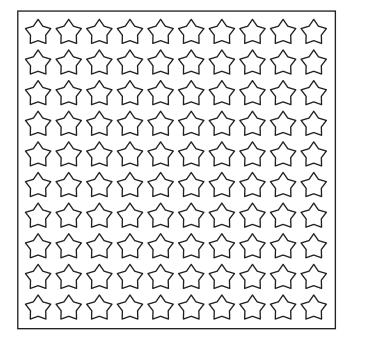
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#### Types of fractions – hundredths as decimals



2

Colour this grid of stars according to the directions below:



Teacher check.



#### 100 hundredths

#### apply



This is a game for 2 players. Each player will need a copy of this page and a copy of the playing cards on page 21.



What to do

The object of this game is to be the first player to colour a whole grid. Each player cuts out the playing cards. The 2 players join the cards and shuffle them. There will be 24 cards. Lay 4 cards out in a row, ensuring both players can see them. The rest of the cards go face down in a pile.

Player 1 takes a card from the row of 4 and colours in that amount on one of their hundred grids. Then they put that card at the bottom of the pile and replace the card with one from the top of the pile.

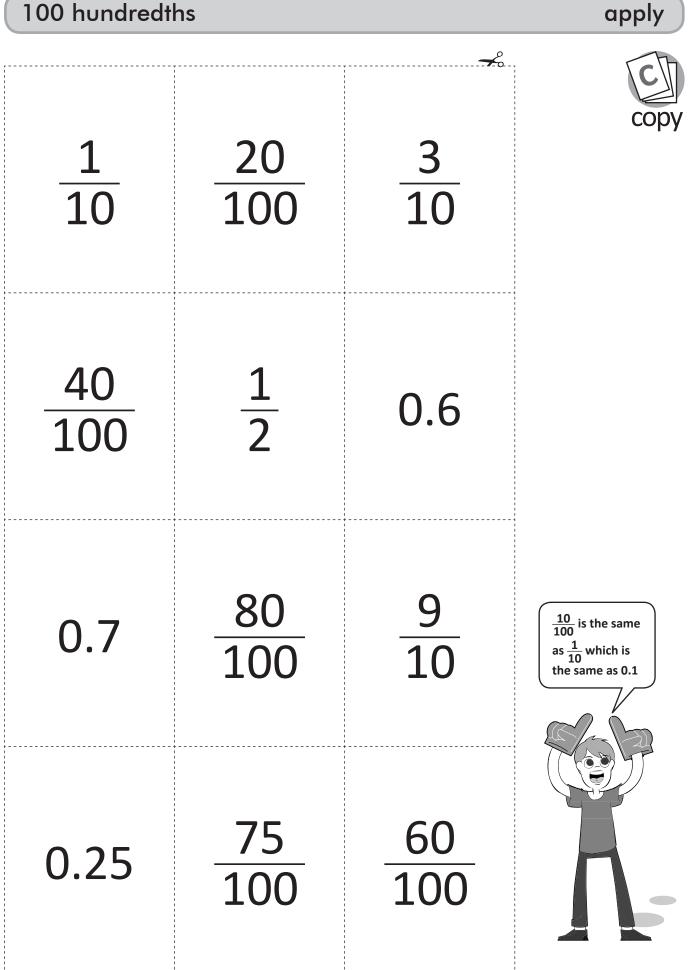
Player 2 repeats this process.

Players take turns until 1 player has filled in 100 hundredths or 1 whole. (If you go over 100 hundredths or 1 whole, it does not count as a win. You must reach exactly 1 whole.)

$\left  - \right $	 	 	 					 			



#### 100 hundredths

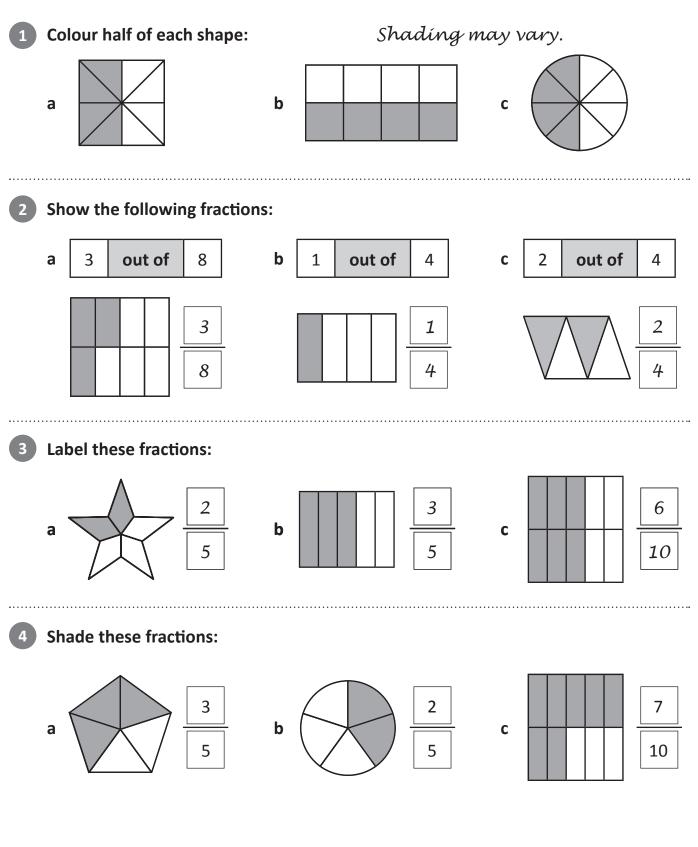




#### Introducing fractions Name Colour half of each shape: b С а Show the following fractions: 2 3 out of 8 b 1 2 а out of 4 out of 4 С Label these fractions: 3 b а С Shade these fractions: 4 3 2 7 b а С 5 5 10

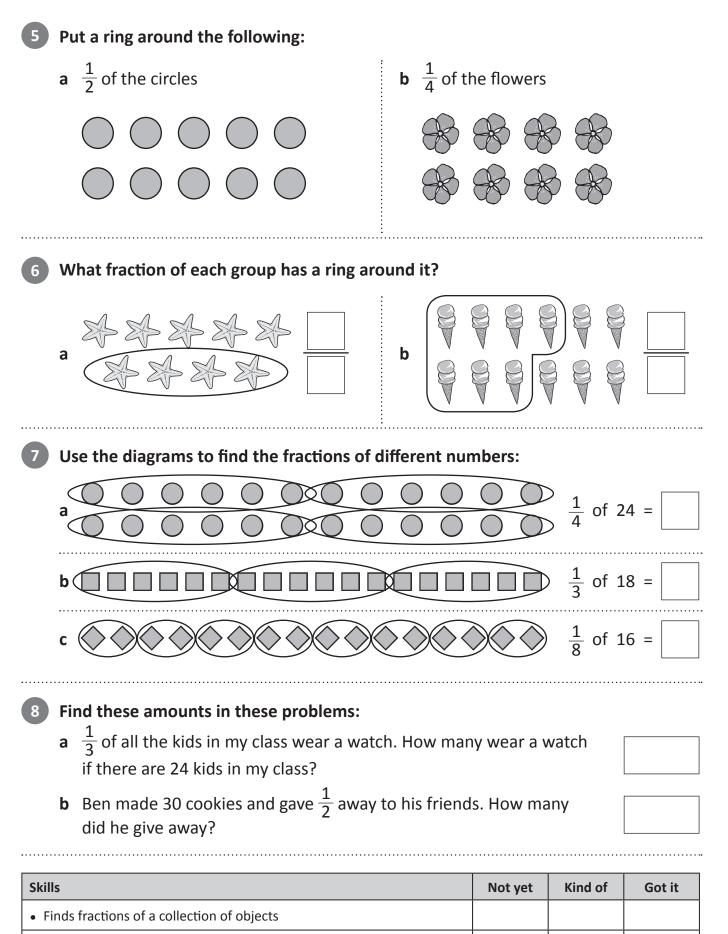
Skills	Not yet	Kind of	Got it
Represents common fractions on different models			
Interprets the numerator and denominator of a fraction			

Name



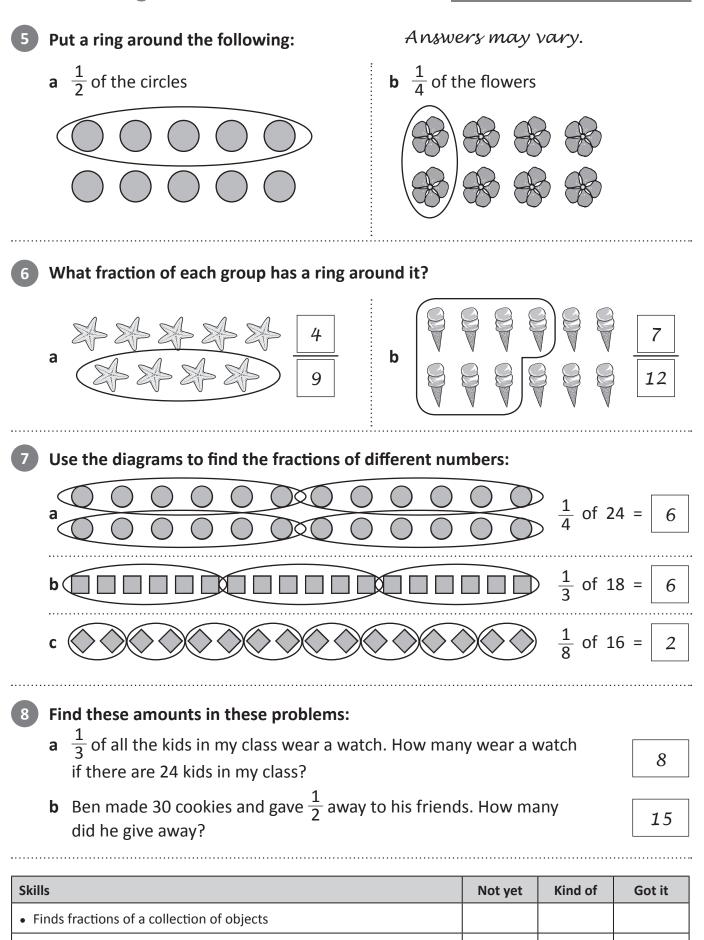
Skills	Not yet	Kind of	Got it
Represents common fractions on different models			
Interprets the numerator and denominator of a fraction			

Name



• Finds a fraction of a whole number





Name

Finds a fraction of a whole number

Name \_\_\_\_\_

9 Label this	fraction	wall:								
				1 w	hole	]				
							Τ			
										]
10 Put these	fractions	s in orde	er from s	smallest	to large	est:				
а	$\frac{5}{8}$ $\frac{3}{4}$	$\frac{3}{8}$ $\frac{1}{2}$	-		b		4 8	8	$\frac{6}{8}$ $\frac{1}{4}$	
				]						
11 Match the drawing a				the top	row wit	h the	fract	tions	underne	eath by
<u>6</u> 8			$\frac{1}{4}$					<u>1</u> 2		
	$\frac{2}{4}$				$\frac{3}{4}$					<u>2</u> 8
Skills							Noty	yet	Kind of	Got it
<ul><li>Orders halves, c</li><li>Finds equivalen</li></ul>			quarters ar	nd eighths						

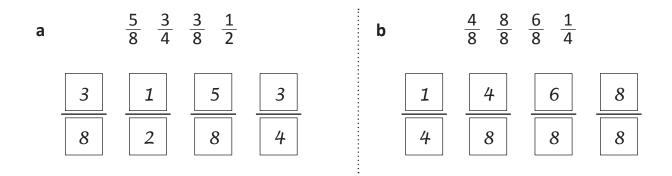
Name

#### Label this fraction wall:

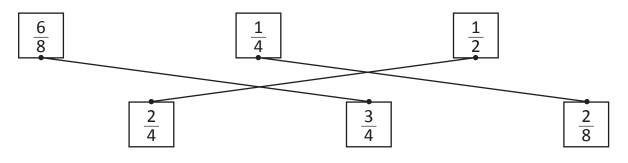
9

1 whole							
		<u>1</u> 2				<u>1</u> 2	
	$\frac{1}{4}$ $\frac{1}{4}$		$\frac{1}{4}$ $\frac{1}{4}$			<u>1</u> 4	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

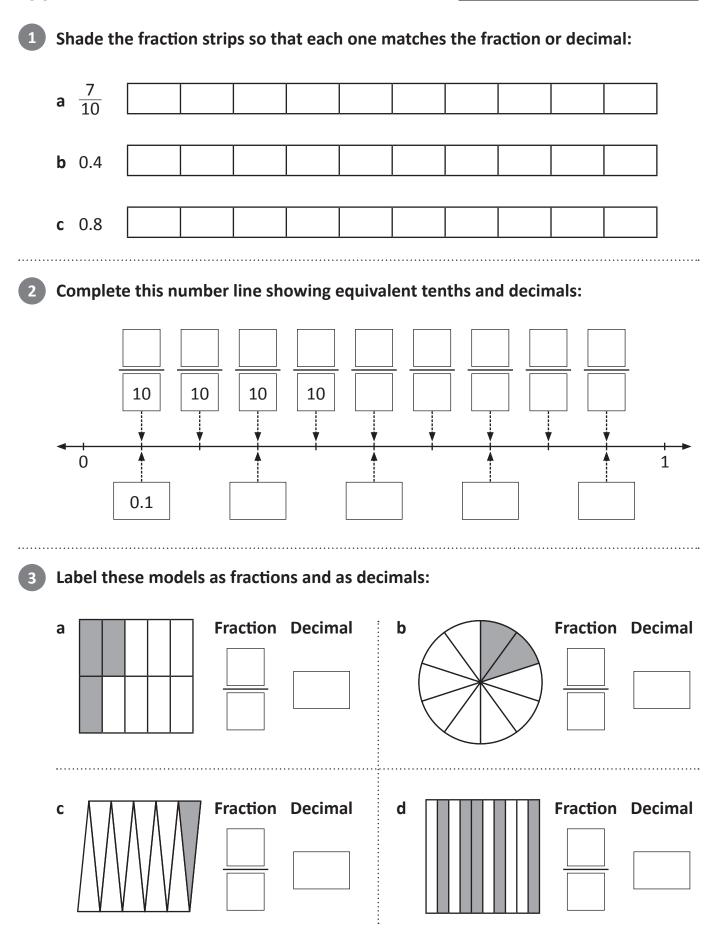
#### **10** Put these fractions in order from smallest to largest:



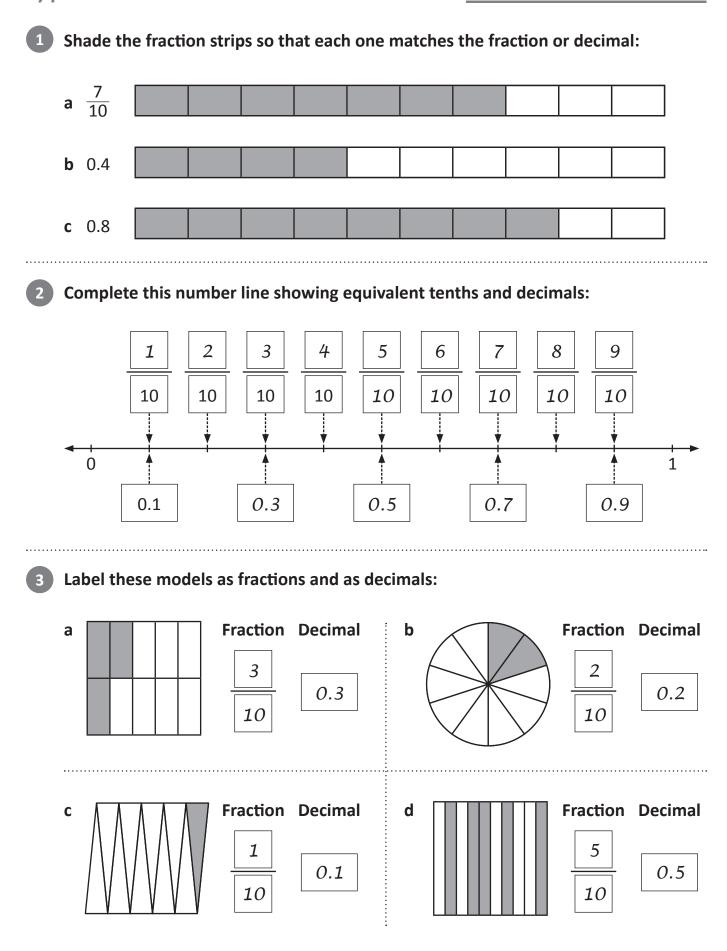
11 Match the equivalent fractions in the top row with the fractions underneath by drawing a line to connect them:



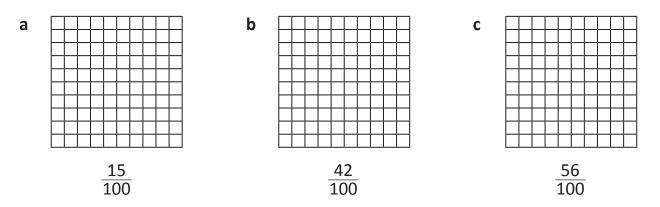
Skills	Not yet	Kind of	Got it
Orders halves, quarters and eighths			
Finds equivalence between halves, quarters and eighths			



Name

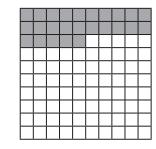


#### Shade the number of hundredths on each grid:



#### Write the number of hundredths shown on each grid as a fraction and a decimal:

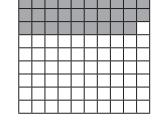
b



5

а

Fraction Decimal



Fraction

Decimal


Fraction

С



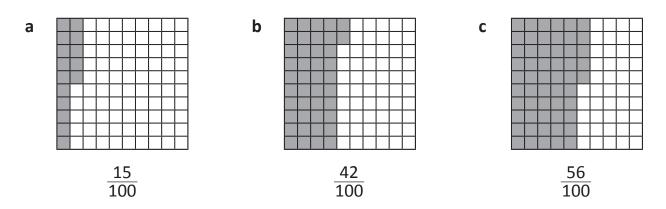


Skills	Not yet	Kind of	Got it
Uses decimal notation for tenths and hundredths			
Finds equivalence between tenths and decimals			
Finds equivalence between hundredths and decimals			





Shade the number of hundredths on each grid:

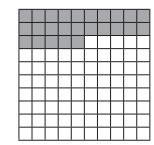


5

а

Write the number of hundredths shown on each grid as a fraction and a decimal:

b

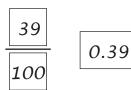


Fraction Decima





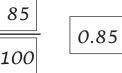
**Fraction** Decimal



Fraction

С

Decimal



Skills	Not yet	Kind of	Got it
Uses decimal notation for tenths and hundredths			
Finds equivalence between tenths and decimals			
Finds equivalence between hundredths and decimals			

#### Series D – Fractions

Curriculum	Outcomes						
NA2-1	Use simple additive strategies with whole numbers and fractions.						
NA2-5	Know simple fractions in everyday use.						
NA2-6	Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols.						

