

Maths

Fractions



For Middle Primary

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What are fractions?

Here is a whole pizza. Let's cut it up into 5 equal slices (parts).

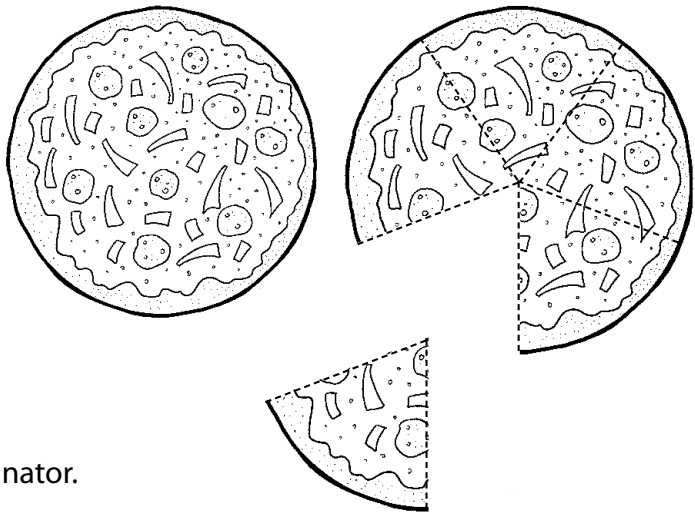
The part of the pizza that's been taken out is one part out of five.

One fifth of the whole pizza is about to be eaten.

One fifth is written as:

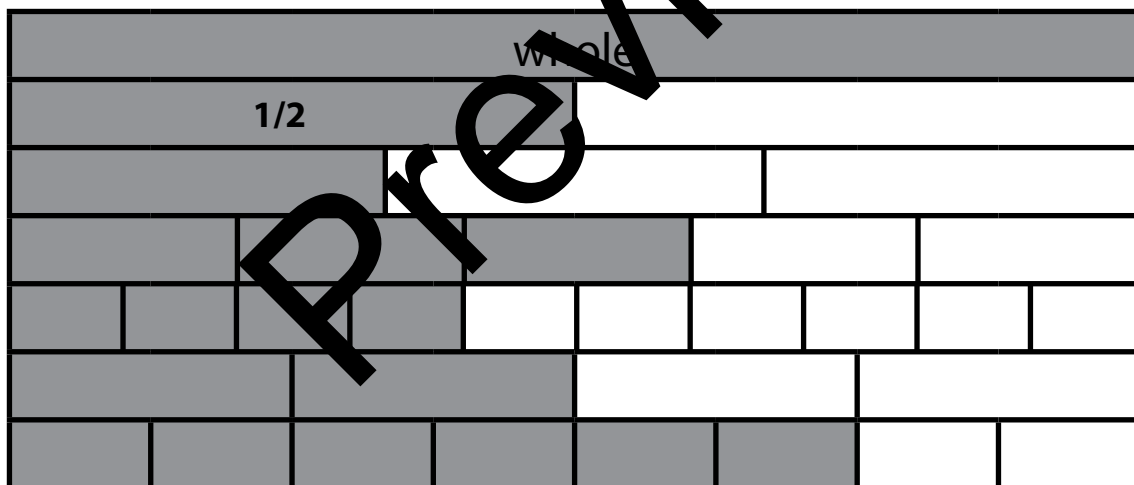
1 ← The top number is the numerator.

5 ← The bottom number is the denominator.



A **fraction** is any part of a whole. A **numerator** tells you how many parts you have and a **denominator** tells you the total number of parts that make up the whole.

- Can you write the fractions that the shaded parts represent on the fraction wall? Look at the examples to help you. Check your answers with a peer.



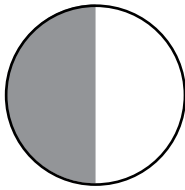
- Look at that delicious whole pizza again. Use the fraction wall to help you.
 - Is half the pizza a bigger share than three fifths of the pizza? _____
 - If you ate three eighths of the pizza, how many slices would be left?

 - Is two fifths and four tenths of the pizza an equal share? Explain your answer.

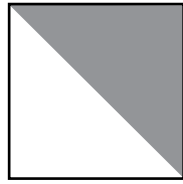
Shady fractions

1

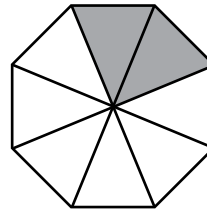
Write the fraction for the shaded part of the following shapes.



a) _____



b) _____



c) _____



d) _____

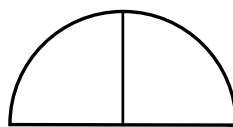
2

Felicity wants to sell as many slices of her scrumptious pies as possible. Look at her pie sales at lunch today. The missing parts are the slices she has sold.

SCRUMPTIOUS
PIES FOR SALE



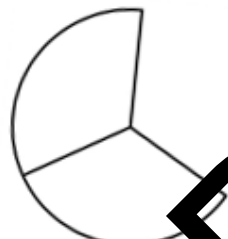
chicken pie



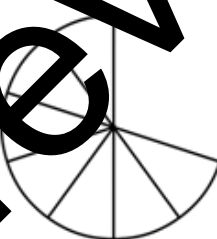
veggie pie



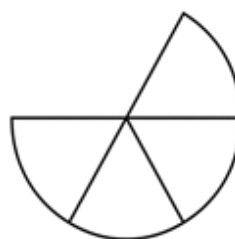
pork pie



seafood pie



bacon pie



apple pie

Complete Felicity's sales report by writing the fraction of each pie sold.

Scrumptious Pie Sales Report

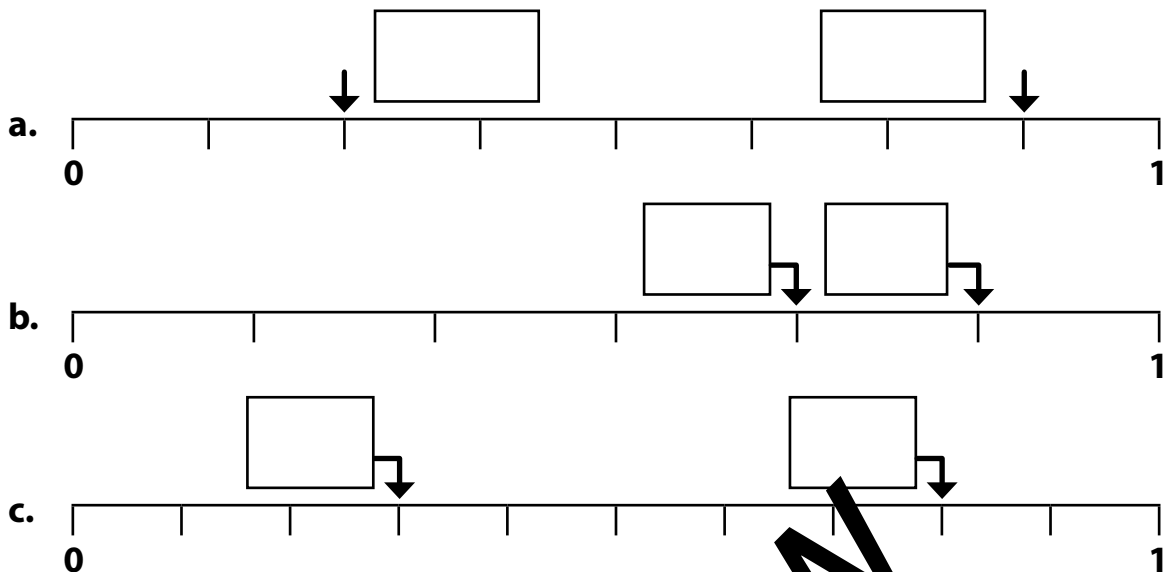


- Shade in the missing parts of the pies to make them whole.
- Which was Felicity's best-selling pie at lunch? _____
- Which was her least popular pie today? _____

Fractions on a number line

1

Label the fractions marked by the pointers on these number lines.



2

It's race day! Four children are running in a 100 metre race. After 10 seconds, the children have completed the following fractions of the distance:

Lane 1 - Jenny	Lane 2 - Joel	Lane 3 - Julia	Lane 4 - Jake
 $\frac{1}{2}$	 $\frac{1}{5}$	 $\frac{3}{4}$	 $\frac{3}{5}$

Start	1	Finish
	2	
	3	
	4	

- Colour in the distance each child has run after 10 seconds. Choose a different colour for each lane. Be as exact as you can be when you mark each position.
- Who is leading the race after 10 seconds? _____
- What fraction of the distance does Joel have to run to finish?

- How many metres does Jake still have to run to finish the race?

Mixed fractions

- 1.** Sales at *Quick Carrot Cakes* are booming. The shaded parts of the diagrams show how many pans of carrot cake were sold during one week. Write the whole number and fraction of carrot cake sold. The first one has been done for you.



3 $\frac{1}{2}$











- 2.** Draw diagrams for carrot cake sales using the mixed numerals below. Ask a partner to check your answers.

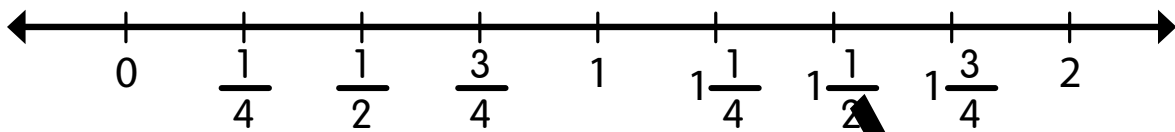
a. 2 $\frac{2}{3}$

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

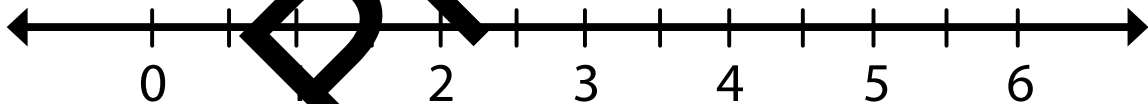
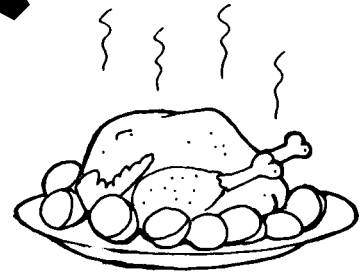
Mixed numerals on a number line

Read these problems carefully. Mark your answer with a cross (x) on the number line.

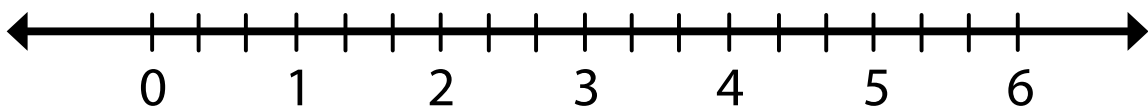
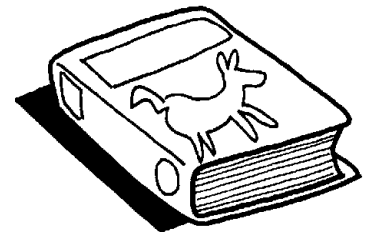
1. Monty the bulldog sneaked around the party and managed to eat various slices of pizza. He ate a whole pepperoni pizza, half a pineapple and ham pizza and a quarter of a tomato and cheese pizza before being found out. How much pizza did Monty eat altogether?



2. Milly barbecued six mouth-watering chickens for a big family lunch. She served three chicken whole, then cut up the rest into halves. At the end of lunch there were three chicken halves not eaten. How many chickens did people eat?



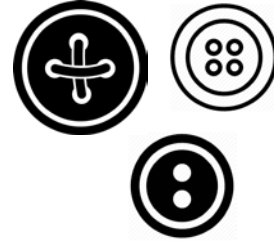
3. Theo loves reading graphic novels. On Saturday, he read $1\frac{1}{3}$ novels; on Sunday $1\frac{2}{3}$ novels and after school on Monday, he read $2\frac{1}{3}$ novels. How many novels has he read in three days?



Equivalent fraction word problems

Solve the fraction problems. Write your answers as equivalent fractions if possible.

1. Mum has to sew 30 buttons back on to the softball team's shirts this week. However, she's been busy studying for her uni exams and has only sewn on 6 buttons. What fraction of her job has she completed?



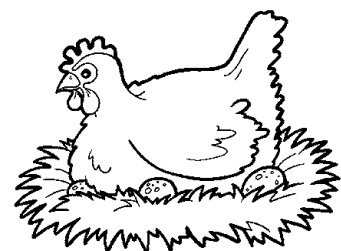
2. Hannah loves her long hair, however, today it took half an hour to wash it, an hour to curl it and two and a half hours for it to dry. What fraction of Hannah's day was taken up with looking after her long locks?



3. Ralph the baker was carrying four boxes of eggs from the storeroom. Each box contained 20 eggs. Just as he reached the kitchen, a mouse scuttled across the floor and Ralph dropped the eggs in fright. Fortunately, 20 of the eggs didn't break. What fraction of the eggs ended up in the bin?



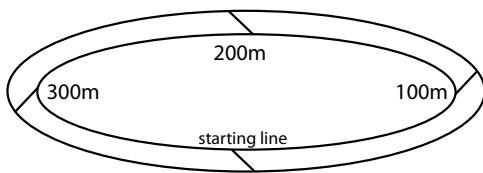
4. A lady decided to build a chicken coop. She calculated that she needed 160 bricks to do the job. When the truck arrived to deliver the bricks, the lady found that she was 40 bricks short. What fraction of the chicken coop was she able to build?



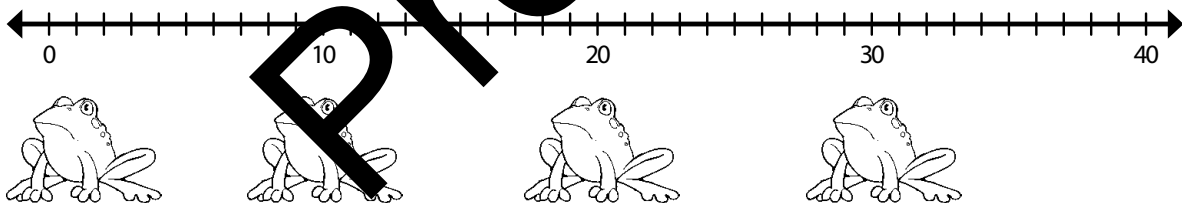
Equivalent fraction tales

Solve these fraction problems.

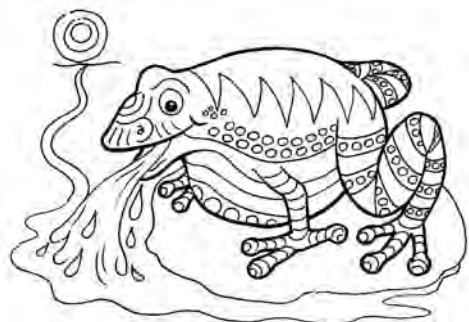
1. The Tortoise, who had been in training for years, challenged the Hare to a 400 metre rematch race around the athletics track. The Hare conked out just $\frac{1}{8}$ of the way into the race. Estimate, by shading on the track, the distance the Hare managed to run. Be as precise as you can.



2. The princess has to kiss a lot of frogs before she can find her prince. She has already kissed 10 frogs but she is only a quarter of the way to finding her man! On the number line below, indicate the number of frogs she still has to kiss to be at the halfway point in her search for love.



3. Tiddalick guzzles 360 litres of water out of the desert waterhole. When the eel tickles him, 130 litres gushes from his mouth. The dancing emu manages to get another 80 litres out of the giggling frog, and the bearded dragon works up a sweat to get 30 litres from him. What fraction of the water does Tiddalick keep in his belly to store for future droughts?



Answers

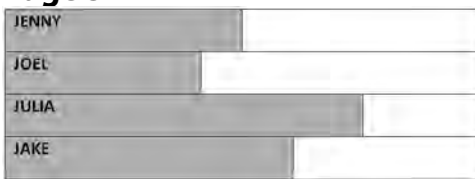
Page 3

1) fraction wall: whole, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{3}{5}$, $\frac{4}{10}$, $\frac{2}{4}$ or $\frac{1}{2}$, $\frac{6}{8}$ 2) a. No b. 5 c. Yes ($\frac{2}{5}$ and $\frac{4}{10}$ are equivalent fractions)

Page 4

1) a. $\frac{1}{2}$ b. $\frac{1}{2}$ c. $\frac{2}{8}$ or $\frac{1}{4}$ d. $\frac{2}{3}$ 2) a. Students need to add: chicken pie-2 slices (total=8); veggie pie-2 slices (total=4); pork pie-3 slices (total=5); seafood pie-1 slice (total=3); bacon pie-3 slices (total=10); apple pie-2 slices (total=6). b. pork c. chicken

Page 5



b. Julia c. $\frac{3}{5}$ d. 40m

Page 6

b) $2\frac{1}{4}$ c) $2\frac{3}{4}$ d) $4\frac{3}{4}$ e) $3\frac{1}{4}$ f) $3\frac{1}{4}$

2) a)  b) 

Page 7

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

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

3) $5\frac{1}{3}$

Page 8

1) $\frac{9}{30} = \frac{1}{5}$

2) $\frac{1}{2} + 1 + 2\frac{1}{2} = \frac{4}{24} = \frac{1}{6}$ of her day

3) $\frac{60}{80} = \frac{3}{4}$ ended up in the bin

4) $\frac{120}{160} = \frac{3}{4}$ of the coop built

Page 9

1) Students should shade 50m

2) Students should mark 20 on the number line 3) $\frac{240}{360}L$ returned = $\frac{1}{3}$ stored