

Next Steps Question Banks

Green

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2	Fluent use of Addition and Subtraction (column methods and mental methods) with 3 or more steps - including negative answers.
3	Division bus stop method for dividing a number by an integer - giving answer with a remainder, fraction or terminating decimal.
5	Use diagrams to illustrate fractions and mixed numbers, including problems on converting to and from improper fractions and simple addition and subtraction problems
6	Long multiplication method (column) with integers.
8	Use of BIDMAS in calculations (include negative answers)
10	Finding multiples of 5% of an amount. Use in a variety of orders
12	Solve a variety of problems based on a fraction of an amount
14	Drawing and simplifying ratios. Use equivalent ratios to solve very simple
16	Make links between decimals to fractions and percentages. Convert freely between them
18	Calculate time between times. Use bus/train timetables to solve problems.

Fluent use of Addition and Subtraction (column methods and mental methods) with 3 or more steps - including negative answers.

The attendance of a football match is 34,294. 22,495 support Ipswich, 7,491 support Norwich and the rest don't support either. How many people at the match don't support either?

Henry's bank account balance is £723.52. He spends £103.58. What is his new bank balance?

Joseph has £325. He spends £99.99 on a new phone. How much money does he have left?

Kelly has a bank balance of £20.52. She spends £28.20, giving her a negative bank balance. What is her new balance?

George's bank account has an overdraft, allowing him to have a negative bank balance of £-250. He currently has £45.40 in his bank. What is the maximum amount George would be able to spend?

Jake owes £782 to his house mate. He makes a payment to him, leaving him still owing £172. How much was his payment?

Wendy has a negative balance of £-62.50 in her bank account. She pays £128 into her account. What is her new balance?

Tom is a gardener. At the start of the day, his bank account is £428. During the day he spends £235 on plants and £850 on flag stones. He also receives payment of £1050 from a customer. What is Tom's final bank balance?

Rosie is paying off her credit card balance of £829. She plans to make 3 payments of £265. How much more will she still have to pay?

A lazer cutter in a factory is very precise. It cuts 3.4752cm off a copper pipe 15.55cm long. How much pipe is left?

Division bus stop method for dividing a number by an integer - giving answer with a remainder, fraction or terminating decimal.

Share £31 between 4 people.

How many sweets will 5 people have if they share a bag of 68 sweets? How many will be left over?

How many cupcakes does each person get if 4 friends share 7 cupcakes? Give your answer as a fraction.

What is $35 \div 4$?

Would you rather share 10 cupcakes between 3 people or 13 cupcakes between 4 people? Give a reason for your answer?

What is $2 \div 8$?

5 people share a lottery jackpot of £3,456,211. How much do they each get?

What is $0.535 \div 5$?

The world record in the 4x100m relay is 36.84 seconds. On average, how fast did each of the four runners take to run their 100m leg?

A rectangle has an area of 45.2cm^2 . The width is 8cm. What is the length?

A £14 bill is split between 5 people. How much should each person pay?

A factors machine precisely cuts a 3m plank of wood into 8 equal parts. How long is each part?

At a dinner, there are 11 guests and 37 roast potatoes. Each guest has at least three. How many could have four?

At McDonalds, for every 5 coffees you buy, you get one free doughnut. Tom buys 234 coffees over the year. How many doughnuts would he have received?

7 cakes is shared equally between 3 people. How much cake will each person get?

Use diagrams to illustrate fractions and mixed numbers, including problems on converting to and from improper fractions and simple addition and subtraction problems

Draw $3\frac{2}{5}$. What is this as an improper fraction?

What would you get if you add $1\frac{4}{5}$ to $3\frac{2}{5}$? Please show all your working.

Evaluate $2\frac{2}{5} - 1\frac{3}{5}$. Please show all your working.

If you start with 2 and subtract $1\frac{2}{5}$ and then add on $\frac{3}{5}$ how much do you have? Leave your answer as a improper fraction.

At a dog show $\frac{2}{11}$ of the dogs are Labradors, and $\frac{1}{11}$ are Springer Spaniels. What fraction are neither?

Harriet and Jemima both have $\frac{1}{3}$ of a cake. James and Ella both have $\frac{2}{3}$ of a cake. How many cakes do they have altogether?

If $1\frac{3}{4} + t = 3\frac{1}{4}$ what is the value of t?

How much less is $1\frac{2}{5}$ than $2\frac{1}{5}$?

Nicky has 1 pizzas and Max has $1\frac{3}{5}$ pizzas. Between them they eat $1\frac{4}{5}$ pizzas. How much do they have left?

$3\frac{1}{3} - k = 1\frac{2}{3}$ Find the value of K
Write your answer as a mixed number.

Long multiplication method (column) with integers.

Work out: 34×56

In a theatre, there are 26 seats in each row, and 38 rows of seats. Work out the total number of seats in the theatre.

What is the product of 184 and 25?

Calculate 54 lots of 77

At an awards evening, students' names are read out in alphabetical order. It takes 14 seconds for each student to have their name read out and to collect their award. How long will it take for all 76 students to receive their awards?

Tickets to tramlines music festival cost £32, and 3,561 tickets have been sold. Mark estimates that the total revenue will be £90,000. Comment on Mark's estimate, and then work out the exact revenue from ticket sales.

Evaluate 99×77 . Use an estimate to check that your answer is sensible (you should write down the values used to calculate your estimate).

A tour company is arranging ski hire for a school trip. The cost for a week's hire is €48 per person. The students in the trip are in groups of seven and there are 6 groups. What is the total cost for the ski hire for one week?

How many seconds are there in 32 minutes?

Work out: 811×35

There are 30cm in 1 foot, and 3 feet in a yard. How many cm are in 22 yards?

What is the product of 33 and 91?

Calculate 18 lots of 333

Electricity is measured using kilowatt hours (kWh). The cost for 1 kWh is 17 pence. What is the total cost of 366 kilowatt hours? Give your answer in pounds.

A barrel of crude oil costs £112. A factory needs 8 barrels per day. How much will the factory pay for a week's supply?

$$\begin{array}{r} 235 \\ \times 18 \\ \hline 40 \\ 24 \\ 16 \\ 5 \\ 3 \\ 2 \\ \hline 90 \end{array}$$

What is wrong with the working out here?
What should the answer be?

What is the product of 21, 23 and 27?

A number, when written as a product of its prime factors, is
 $2 \times 3 \times 5 \times 7 \times 11$
What is the number?

$$56 \times 112 = ?$$

Use of BIDMAS in calculations (include negative answers)

Evaluate $15 - 5 \times 2 + 3$

Evaluate $9 - 9 \div 3 - 20 \div 2$

Evaluate $5 \div 5 + 6 \div 6 + 7 \div 7$

Evaluate $(3 + 4 \times 2) \times 5 + 3$

Evaluate $2 + (2 + (8 - 3) \times 5) - 2 \times 13$

Evaluate $2 \times 12 - (3 \times 7 - 12)$

Is $20 - 12 \times 2 + 3 \leq 3 \times (10 - 11) + 2$

Calculate $5 \times 3^2 - 6$

Evaluate $2 \times 5^2 \div 10 - 3 \times 4 + 11$

Evaluate $9 - 1 - 3 \times 2 + 4 \times 8$

Evaluate $32 \div 4 - 1 \times 6$

Is $(8 - 5) \times 4 + 1 > 24 - 1 \times 2 \times 3 - 1 \times 2 \times 4$?
Explain your answer

Evaluate $2^3 + 3 \times 2^2$

Evaluate $(3 + 4^2)^2$

Evaluate $2 \times (3 + 4)^2$

Evaluate $12 \times (100 - 8 \times 12)$

Evaluate $50 \div 5^2 + 7^2$

Evaluate $1 + 2 \times 3^2 + 4 + 5$

Evaluate $2^2 \times 3^2 - 4 \times 3 + 9 - 2 \times 4^2$

Finding multiples of 5% of an amount. Use in a variety of orders

A special offer on a bag of flour gives you an extra 15%. You receive an extra 450g. How much flour is there in your bag?

A company gives a 5% pay rise to its staff. Two workers, one on £14000 per year and one on £36000 per year, each receive this pay rise. What are the new salaries of the workers?

Calculate 85% of 3500

At Sheffield Bus Station, 15% of buses are late leaving. 75 buses were late leaving on Monday. How many buses left on Monday?

In a 35% off sale, what is the new price of a pair of jeans that cost £75?

The pass mark in a test is 65%. The test is out of 40 marks. Jimmy got 22 marks and Barry got 28 marks. Did either of them pass?

Which container contains more liquid: A 500ml bottle that is 35% full, or a 700ml tub that is 75% empty?

During a Sprint Triathlon, an athlete led for 70% of the swim, 65% of the cycle, and 25% of the run. The swim is 750 metres, the cycle is 20km, and the run is 5km. For how many metres did the athlete lead the race?

A baby's weight increases by 65% in the 3 months following its birth. At birth, it weight 3kg. In grams, how much weight did the baby put on?

Charles, David and Emma split £2000. Charles received 35%, whilst David and Emma shared the remainder equally. How much money did each person get?

A random sample of eggs reveals that 20% are cracked. 120 eggs are not cracked. How many eggs are there altogether?

At a music festival, a fan of Kanye West stands for 45% of half a day. How many minutes are they standing for?

A snowball is rolled down a hill. The mass of the snowball increases by 95%. Before the roll, it weighed 350g. What does it weigh afterwards?

Mickey and Minnie love cheese. Every day, they eat a total of 5% of their body weight in cheese. Mickey weighs 400g and Minnie weighs 320g. What is the total weight of cheese eaten in one week?

A car requires a 15% deposit to be paid. If the car costs £30000, how much is left to pay after the deposit has been paid?

A stadium's capacity increased by 1750 seats. This was a 5% increase in its capacity. What was the capacity before the increase?

You play a game that you win 55% of the time. You lost 225 times. How many times did you play the game?

45% of a population of 240 ducks lay eggs that successfully hatch. How many ducks will there be after all of the hatching has completed?

In a 1500m race, a pacemaker leads for the first 55% of the race, before losing his place. However, he comes back and leads for the final 100m. What is the total distance that he was in the lead for?

Solve a variety of problems based on a fraction of an amount

In a bag of counters, $\frac{4}{5}$ are white. There are 20 counters. How many counters are not white?

Jim has £900. He gives $\frac{3}{5}$ of his money to Ben. How much does Ben get?

$\frac{2}{9}$ of a year group get picked to take part in an assembly. If 36 people take part, how many students are in the year group?

At a school there was a snow day. $\frac{4}{11}$ of the teachers didn't make it in. If 56 teachers did make it in, how many teachers are there in total?

Lloyd and Harry receive some money. Lloyd gets $\frac{2}{5}$ of the money. If Harry receives £20 more than Lloyd, how much does Lloyd get?

In an orchestra there are three sections; wind, brass and strings. The string section makes up $\frac{2}{5}$ of the orchestra and there are 16 string players altogether. How many people are in the orchestra in total?

Mark runs a race. He is $\frac{3}{10}$ of the way though the race when he sees a sign saying "28 km to go". How long is the race?

On a flight from New York to London, the pilot says that the total journey is 3,500 miles. The map shows they are three quarters of the way there. How far is there left to go?

Mr Jones gives away $\frac{5}{6}$ of his DVDs to a charity shop and is left with 23. How many DVDs did the charity shop receive?

A runner is $\frac{4}{7}$ of the way through a race when they see a sign that tells them they've covered a distance of 5.2km. How much further have they got to run?

A doctor's surgery has a target that $\frac{9}{10}$ of patients don't wait more than 20 minutes. If there are 70 patients in a day and 6 waited more than 20 minutes, did the surgery meet the target?

Mark and Jane share some money. Mark gets $\frac{2}{5}$ and Jane gets the rest. If Jane gets £45, how much does Mark get?

The bus routes in Sheffield are run by StageCoach or First. Stage Coach run $\frac{3}{7}$ of the routes and First run the other $\frac{4}{7}$. First run 21 more routes than Stage Coach. How many bus routes are there altogether?

In a sample of 100 radioactive particles, $\frac{1}{5}$ of them decay in a period of 1 hour. How many will be left after an hour? How many will be left after 2 hours?

Drawing and simplifying ratios. Use equivalent ratios to solve very simple problems

In the football match, the ratio of goals score by Ipswich and Sheffield United is 2:1. Which of these scores could the score have been?

- A - 1-0
- B - 4-2
- C - 3-2
- D - 2-2

In a class the ratio of boys to girls is 2:1. Could there be exactly 5 boys in the class?

Draw a diagram to represent the ratio 3:5.

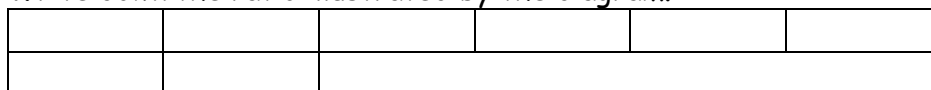
For every £100 Denis saves, his bank give him two book tokens. How much does Denis have to save to get 8 book tokens?

In a music class, the ratio of singers to drummers is 3:1. If there are 9 singers, how many drummers are there?

Which two of these ratios is not equivalent to 4:3?

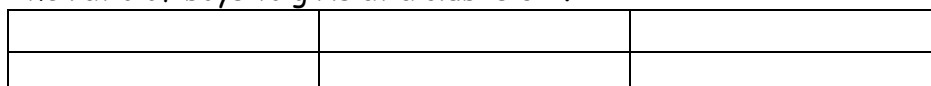
- A - 8:6
- B - 40:30
- C - 5:4
- D - 20:15
- E - 14:13

Write down the ratio illustrated by the diagram.



What is the ratio simplified?

The ratio of boys to girls at a club is 3:2.



What fraction are boys?

- A - $\frac{2}{3}$
- B - $\frac{3}{5}$
- C - $\frac{3}{2}$
- D - $\frac{1}{3}$

To make mortar, you mix 1 part cement with 5 parts sand.

Fill in the missing gaps:

2 parts cement with ___ parts sand

3 parts cement with ___ parts sand

___ parts cement with 30 parts sand

At school, for every 2 French lessons Katie has, she has 4 maths lessons. How many maths lessons does Katie have for every 1 French lesson?

A bag contains black and white counters. The ratio of black to white is 3:4. If there are 9 black counters, how many counter are there altogether?

Make links between decimals to fractions and percentages. Convert freely between them

Write 0.6 as a fraction in its simplest form.

Ali says 0.125 is the same as 125%, Jay says it is 12.5%. Who is correct? Show how you know.

Show how $13 \div 4$ can be written as a **top heavy fraction**.
Now calculate $13 \div 4$ and leave your answer as a **mixed number**.

Paula has 40 sweets. She gives 15% of them to Mat and $\frac{1}{4}$ of them to Laura. How many does she have left for herself?

Which is larger 20% of 300 or $\frac{2}{3}$ of 120 ?

Convert $\frac{1}{8}$ to a decimal using bus stop division.

Change 0.04 to a percentage.

One tenth of a metre is how many centimetres?

75% of students like chocolate. What fraction do not like chocolate?

Complete the table:

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{5}$		
	0.3	

Add together 0.3 , $\frac{3}{4}$ and 0.05 .

Put these numbers in order of size smallest to largest:

0.601 , 0.6 , $\frac{2}{3}$, 65%

Is 0.15 equivalent to $\frac{15}{10}$ or $\frac{15}{100}$? Show how you know.

0.25 is the same as $\frac{1}{4}$ Show why that is.

Janet scores $\frac{11}{20}$ in her maths test. What percentage is this?

Draw a **picture** that represents $\frac{17}{4}$
Use your picture to write $\frac{17}{4}$ as a decimal number.

$0.37 + 0.2 + g = 1$
Find the value of g .

Change 60.5% to a decimal.

How many different ways can you represent **one fifth**?

Calculate time between times. Use bus/train timetables to solve problems.

Greg starts his shift at the bakery at 04:35. He finishes at 12:15. How long was his shift?

Sam catches the bus from Hunters Bar and gets off at Baslow Nether End. How long was he on the bus for?

Sheffield Interchange	0730
Hunters Bar Rustlings Road	0744
Ecclesall Knowle Lane	0751
Fox House Hathersage Rd	0803
Grindleford Mount Pleasant	0810
Calver Sough	0815
Baslow Nether End	0820
Bakewell Square	0830
Lady Manners School	0835

On a summer's day, the sun rises at 04:37 and sets at 21:36. How much daylight is there?

Neil catches the 2nd bus from Green St. He gets off at Church Street. How long is Neil on the bus for?

	1st	2nd	3rd	4th
Depot	07:30	07:45	08:00	08:15
Green St	07:40	07:55	08:10	08:25
High St	07:45	08:00	08:15	08:30
Central Park	07:48	08:03	08:18	08:33
Railway Station	07:53	08:08	08:23	08:38
Shopping Centre	08:00	08:15	08:30	08:45
Brown St	08:06	08:21	08:36	08:51
Church St	08:08	08:23	08:38	08:53
St Georges School	08:15	08:30	08:45	09:00
Library	08:20	08:35	08:50	09:05
Hospital	08:25	08:40	08:55	09:10
Friary Walk	08:33	08:48	09:03	09:18

Adam arrives at Diss Train Station at 6am. He catches the next train to Liverpool Street. How long will he be on the train for?

NORWICH	Dep	0500	0520	0530	0600	0630	0655
Diss	Dep	0518		0547	0618	0647	0713
Stowmarket	Dep	0531	.....	0558	0630	0658	0725
IPSWICH	Arr	0541	0553	0610	0641	0709	0736
	Dep	0543	0553	0612	0642	0710	0737
Manningtree	Dep	0553	.....	0620	0652	0721	.....
COLCHESTER	Dep	0604	0610	0632	0704	0732	.....
Chelmsford	Dep	.....	.....	.....	.....	.....	.....
LIVERPOOL STREET	Arr	0653	070	0721	0756	0826	0848

Fiona's lost her 4g phone signal at 12:26pm and didn't get it back until 8:10pm. For how long was her signal down for?

Barry is at **Stourton Corner**. He catches the bus that stops at **Shipston High School Bus Park**. At what time will the bus stop at **Upper Brailes The Park**?

WHICHFORD BUS SHELTER	....	0725	0745	0830	....
Cherington Featherbed Lane	....	0731	0751	0836	....
Stourton Corner	....	0733	0753	0838	....
Sutton under Brailes The Green	....	0736	0756	0841	....
Brailes Primary School	....	....	....	0845	....
Lower Brailes The Park	0742	0742	0802	0847	....
Upper Brailes The Gate	0745	0745	0805	0850	....
Shipston Pettiphers Garage	....	....	....	0900	0900
Shipston Darlingscott Road	0753	0753	0813	....	....
Shipston High School Bus Park	....	....	0815	....	....
Tredington Bus Shelter	....	....	....	0904	0904
Halford Idlicote Road	....	....	....	0907	0907
Armscote Fox and Goose	....	....	....	0911	0911
ILMINGTON HOWARD ARMS	0802	0802	....	0917	0917
Admington Bus Shelter	....	....	....	0924	0924
Wimpstone Green Barn	....	....	....	....	....
Preston Crossroads	....	....	....	....	....
Lower Quinton College Arms	0812	0812	....	0927	0927
Clifford Chambers New Inn	0821	0821	....	0936	0936
STRATFORD BRIDGE STREET	0835	0835	....	0945	0945

Wendy got off the bus at Friary Walk at 09:18. She'd got on the bus 45 minutes earlier. At what stop did she get on the bus?

	1st	2nd	3rd	4th
Depot	07:30	07:45	08:00	08:15
Green St	07:40	07:55	08:10	08:25
High St	07:45	08:00	08:15	08:30
Central Park	07:48	08:03	08:18	08:33
Railway Station	07:53	08:08	08:23	08:38
Shopping Centre	08:00	08:15	08:30	08:45
Brown St	08:06	08:21	08:36	08:51
Church St	08:08	08:23	08:38	08:53
St Georges School	08:15	08:30	08:45	09:00
Library	08:20	08:35	08:50	09:05
Hospital	08:25	08:40	08:55	09:10
Friary Walk	08:33	08:48	09:03	09:18

Ricky needs to be in Aldermaston by 11am on Tuesday. What time should he catch the bus from Newbury?

	Bus number	Leave Newbury	Arrive Aldermaston
Weekday Mon- fri	105	06.50	07.35
	104	09.50	10.37
	104	11.50	12.37
	104	13.50	14.37
Saturday	105	06.50	07.36
	104	9.50	10.32
	104	11.50	12.37
	104	13.50	14.37
	104	15.15	16.06

A lorry driver pulls over for a rest break at 3:37pm. He drives off at 6:05pm. How long was his rest break?

A flight scheduled to take off at 17:45, actually took off at 21:17. For how long was the flight delayed?

How long is the journey from **Maybole** to **Barrhead**?

Girvan	0620
Maybole	0636
Ayr	0648
Prestwick Town	0655
Prestwick Int. Airport	0657
Troon	0702
Kilmarnock	0716
Kilmarnock	0722
Barrhead	0747

How long does the 104 bus take to get from Newbury to Aldermaston at 15:15 on a Saturday?

	Bus number	Leave Newbury	Arrive Aldermaston
Weekday Mon-fri	105	06.50	07.35
	104	09.50	10.37
	104	11.50	12.37
	104	13.50	14.37
Saturday	105	06.50	07.36
	104	9.50	10.32
	104	11.50	12.37
	104	13.50	14.37
	104	15.15	16.06

Ian gets on the bus from **Cherington Featherbed Lane** at 0731 and gets off at **Lower Quinton College Arms**. How long is he on the bus for?

WHICHFORD BUS SHELTER	....	0725	0745	0830	....
Cherington Featherbed Lane	....	0731	0751	0836	....
Stourton Corner	....	0733	0753	0838	....
Sutton under Brailes The Green	....	0736	0756	0841	....
Brailes Primary School	....	....	....	0845	....
Lower Brailes The Park	0742	0742	0802	0847	....
Upper Brailes The Gate	0745	0745	0805	0850	....
Shipston Pettiphers Garage	....	....	....	0900	0900
Shipston Darlingscott Road	0753	0753	0813	....	....
Shipston High School Bus Park	....	....	0815	....	....
Tredington Bus Shelter	....	....	....	0904	0904
Halford Idlicote Road	....	....	....	0907	0907
Armscote Fox and Goose	....	....	....	0911	0911
ILMINGTON HOWARD ARMS	0802	0802	....	0917	0917
Admington Bus Shelter	....	....	....	0924	0924
Wimpstone Green Barn	....	....	....	....	....
Preston Crossroads	....	....	....	....	....
Lower Quinton College Arms	0812	0812	....	0927	0927
Clifford Chambers New Inn	0821	0821	....	0936	0936
STRATFORD BRIDGE STREET	0835	0835	....	0945	0945

During a cricket match, play was suspended for rain at 1:18pm. Play resumed at 2:50pm. How long was the delay?