Next Steps Question Banks

YELLOW

Addition and subtraction involving decimals or more numbers

| |
|---|
| 3.24m is cut from a plank of wood that is 7m long. How much is left.
 Use a number line to show how you have worked this out. |
| In a shop I spend £14.27. If I pay with a £20 note how much change will I get? Use a number line to show how you have worked this out. |
| Work out the total of 17.2, 4.96 and 12 |
| What is the difference between 45 and 16.23 |
| Jonathan was booking a holiday for his family. The flights cost £876.50 and the hotel cost £1067.
 What is the total cost of the hotel and the flights? |
| A washing machine usually costs £441.00. Today it is on sale for £402.00. If Noah buys the washing machine today, how much will he save? |
| Rina went to the pet supply store. First she picked out some cat toys that cost £4.54. Then she selected some cat food for £3.98. How much did Rina spend in all? |
| Gordon had 0.24 grams of pepper. Then he used 0.08 grams of the pepper to make some scrambled eggs. How much pepper does Gordon have left? |

Using the paths shown, the distance from Summerfield to Kensington is 16.2 kilometres.

How far is it from Norwood to Kensington?

Lakeside

Kensington

5.2 km

6.3 km

?

Summerfield

Norwood
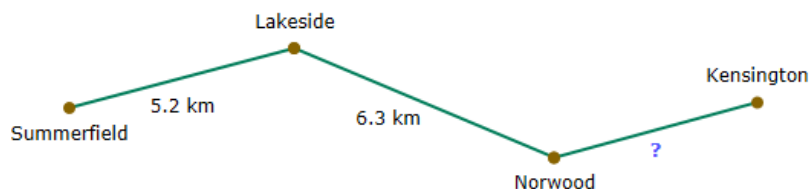
Work out the answer to: 7 – 10 + 4.2

3.24m of wood is cut off a plank that is 7m long. How much wood is left?

In a completion, One Thousand people win a prize. If 239 winners are male, how many are female?

Bus stop method for dividing a number (including decimals) by an integer – possibly with a final remainder.

What is 1272 ÷ 4 ?
Share £3563 between 7 people.
A race is 55.2km long. Three runners split it into equal legs of equal length. How long is each leg?
Five people go to a café and get a bill for £14.20. They split the bill equally. How much do they each pay?
Who will have more – 3 friends who share £5.82 or 4 friends who share £7.92?
What is 987,654,321 ÷ 9
A sunflower grows 3cm per day. John measures his sunflower after a while and finds it is 117cm tall. How long has it been growing for?
A jackpot of £14.24 million is shared between 4 people. How much do they each get (in millions)?
How many lengths of 5cm can be cut from a piece of string 1.6m long?
Can you share £18.25 between 7 people? Give a reason.

Will needs to buy 54 hooks. They come in packs of 5. How many packs will he need to buy?

You can use a calculator for this question
A builder needs 5140 bricks. You can buy bricks in crates of 360. How many crates will the builder have to buy?

At a restaurant, a waiter is needed for every 5 tables. If there are 32 tables, how many waiters are needed?

On a school trip, at least one teacher is needed for every 7 students. If 4 teachers go, what is the maximum number of students that can go?

On a school trip, at least one teacher is needed for every 7 students. If 52 students are on the trip, how many teachers are required?

A carpenter has two planks of wood, each 200cm long. How many lengths of 60cm could he cut from these two planks?

Which of these numbers is divisible by 3?
374   101   822

A baker needs 40g of yeast. They come in 7g packs. How many packs does the baker need to buy?

A teacher wants to put their class of 29 students into groups. Which of these group sizes would leave least amount of students left?
A – groups of 3
B – groups of 4
C – groups of 5

Jane makes party bags full of sweets. Each bag needs 8 sweets. She has 490 sweets. How many party bags can she make?

Paul needs 121 cans of coke. Coke comes in packs of 6 cans. How many packs does he need to buy?

Use equivalent fractions to compare two fractions

Which is bigger - $\frac{2}{7}$ or $\frac{3}{8}$?

In bag A, there are 3 white counters and 2 black counters. In bag B there are 4 white counters and 3 black counters.
Which bag gives a greater chance of choosing a white counter?

Which is bigger - $\frac{2}{3}$ or $\frac{5}{7}$?

Amy has $\frac{2}{9}$ of a chocolate bar left. Bethany has $\frac{3}{11}$ of the same chocolate bar left. Who has eaten the most chocolate?

Harriet and Jemima both have the same number of sweets. Harriet gives $\frac{3}{8}$ of her sweets away. Jemima gives $\frac{4}{9}$ of her sweets away. Who gave away the most sweets?

Cameron says that $\frac{5}{8}$ is more than $\frac{3}{5}$. Show that he is wrong.

$\frac{7}{12}$ of Miss Marshall's class are boys. $\frac{2}{5}$ of Mr Jordan's class are girls. One student from each class is to be selected at random. In which class is there a higher chance of a boy being selected?

Donald won some money on the lottery. He generously gave $\frac{2}{5}$ of his winnings to his sister and $\frac{3}{8}$ to his son. Who did he give more money to?

At a dog show $\frac{2}{11}$ of the dogs are Labradors, and $\frac{1}{6}$ are Springer Spaniels. Which dog breed are there more of?

Miss Shakespeare and Mr Brady have the same number of pupils in each of their classes. Miss Shakespeare marked $\frac{5}{6}$ of her exercise books. Mr Brady marked $\frac{3}{4}$ of his exercise books. Which teacher has got the most books left to mark?

Yesterday, $\frac{4}{13}$ of the flights from Manchester airport were delayed. At Newcastle airport, $\frac{3}{10}$ of the flights were delayed. At which airport were you most likely to have a flight that was on time?

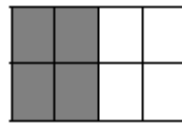In which diagram is the greatest fraction of the shape shaded?
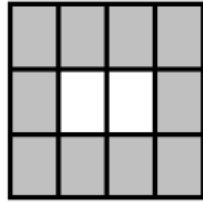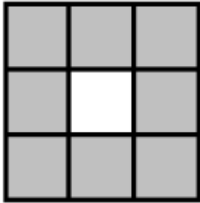
Which diagram represents the largest fraction?

Simplify fractions (both with diagrams and using times table facts)

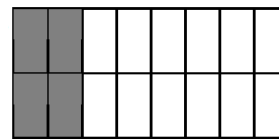|		
What fraction of the diagram is shaded? as much as you can.		Simplify your answer
Emma says $\frac{1}{2}$ the diagram is shaded. Show why		she is wrong
Write down three fractions equal to the diagram		shaded part of the
One day is 24 hours. What fraction of a day is 6 hours? Simplify your answer as much as you can		
There are 15 pupils in a class. 10 of them are boys. What fraction of the class are boys. Write your answer in its simplest form		
Matthew has 9 sweets. Three are green and six are yellow sweets. What fraction of the sweets are green? Simplify your answer.		
Write $\dfrac{16}{28}$ in its simplest form		
Show that $\dfrac{10}{25}$ and $\dfrac{4}{10}$ simplify to give the same answer		
What fraction of the shape is shaded? Simplify your answer.		
Write down three fractions equal to the the diagram.		shaded part of
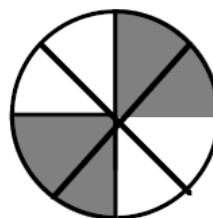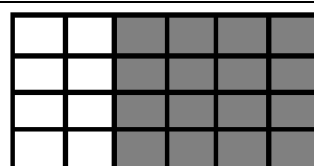
Freya says that $\frac{18}{42}$ simplifies to $\frac{3}{8}$. Is she correct? Show working to support your answer

Twenty patients had appointments at a doctor's surgery. Eight of these had to wait more than 10 minutes for their appointment. What fraction of patients had to wait more than 10 minutes? Simplify your answer.

Column multiplication method for 1 digit number by any other number (including decimals)

7 x 352
What is six multiplied by 11.2?
If I use 10.3 tins of paint, and each tin contains 4 litres of paint, how much have I used altogether?

```
  753       What is wrong with the working out here?
x   9       What should the answer be?
   27
   45
   63
  135
```

What is the product of 3 and 751?
Mark spends £2.75 on his dinner at school every day, how much will he have spent in a week?
Work out 8 x 467
Multiply 6 by 9.34
The distance from Sheffield to London is 271km, Sarah has to drive to London, and back, for work 3 times a week. How far does she travel altogether?

```
  458       What is wrong with the working out here?
x   7       What should the answer be?
   56
   35
   28
  219
```

11.35 x 7 = ?
What are 281 lots of 9?
Staples are sold in boxes of 84. How many staples are there in 7 boxes?
A CD costs £10.80, what do 4 cost?
What is the product of 614 and 7?
Multiply 9.35 by 6
Calculate 9 x 389
There are 217 students per year group at Notre Dame, how many people are in the lower school (Not Sixth Form)?
3 x 617=?

Nitrogen is cooled from room temperature of 20°C to -196°C where it becomes liquid nitrogen. What is the total fall in the temperature?

George's bank balance is £32. He spends £67 on his card. What's his new balance?

Evaluate 55 – 83 + 45

Work out -85 + 40 + 35

Find the value of 278 + 156 – 275

Evaluate 100 – 23 – 47

Calculate 16 – 17 + 18 – 19 + 20 – 21 + 22

Work out 96 – 47 – 50

The temperature drops by 9°C between 8pm and 11pm. If the temperature at 8pm was 5°C, what was the temperature at 11pm?

The minimum temperature on Saturday was 5°C less than the minimum on Monday. The minimum on Saturday was
-9°C, what was the minimum temperature on Monday?

189 + 190 – 180 – 181

Calculate –56 + 88
14

Find the value of – 36 + 30 + 10

Evaluate -681 + 689

Finding multiples of 10% of an amount.

A car is priced at £7500. In a sale, the price is reduced by 20%. Calculate the new price.

John wins £400. He gives 40% to his brother and 30% to charity. Calculate how much money John has given away

Laura's salary is increased by 40%. Her salary was £40000 per year. What is her new salary?

Lewis wants to buy a car that costs £600. To do this, he saves 30% of his wages each month. Each month he earns £300. How many full months will it take him to save enough money?

On a train from Sheffield to London, Boris was stood up for 40% of the journey. The journey takes 2 hours and 30 minutes. For how many minutes did Boris have to stand?

From a company of 700 people, 70% are expected to attend their annual ball. Each of these people is allowed to bring one partner. What is the maximum number of people that will be at the ball?

In an exam, the pass mark is 80%. There are 35 marks available. A student got 27 marks. Did they pass?

What is 10% of 20% of 30% of 40% of 50% of 10000?

During a Sports Direct Sale, a jacket is reduced by 40%. It originally cost £80. What is the saving on the jacket?

A 700ml bottle of juice is 40% full. A 400ml bottle of juice is 70% full. How much juice is there altogether?

At a football match, 20% of the crowd were female. In total, the crowd was 25 700. How many men were there?

Stretch Armstrong's arms can stretch by up to 40%. If his arm was originally 11cm long, how long is his fully stretched arm?

The air we breathe is approximately 20% oxygen. If you take 12000cm^3 of air, what volume will be oxygen?

The maximum safe heart rate of a human is (220-age). A gym recommends working at 60% of your maximum safe heart rate. What would this working rate be for a 25 year old?

Jack practises his 12 times table. His first practice takes him 200 seconds. He says that with every practise, his time will reduce by 10%. How long should his 3rd go take?

Before a 10% price increase, a loaf of bread cost 90p and 4 pints of milk cost 80p. What will their total cost be after the price increase?

A washing powder company gives away 20% extra free. A tub weighed 500g before the promotion. Afterwards it weighed 580g. Are the company keeping to their promise?

A house costing £180000 has 20% off. How much does the buyer save?

Baby George weighed 4kg when he was born. His weight increased by 40% over the following month. By how much did his weight increase?

Calculate a fraction of an amount.

A tuck shop has 35 cans of coke. One boy buys $\frac{1}{7}$ of the cans. How many cans of coke are there left?

Henry gets £20 pocket money. He saves $\frac{4}{5}$ of it. How much does he save?

The bar below illustrates this scenario. Fill in the missing gaps.
A woman is in a cycle race that that is a total of **?** miles. She is $\frac{?}{?}$ of the way through the face and has 18 miles to go.

30 miles

6	6	6	6	6

12 miles   18 miles
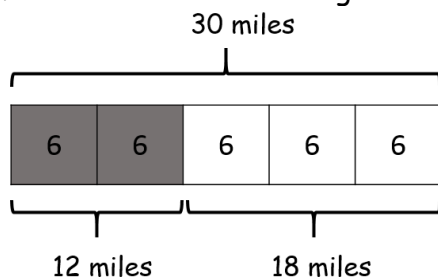
A bakery sell bread and cakes. Bread makes up $\frac{4}{9}$ of the total items. If there are a total of 360 items, how many cakes are there?

In a survey 3 in 4 people said they were happy with their phone contract. If 48 people were asked, how many people were happy with their phone contract?

A business is struggling and $\frac{2}{5}$ of its 135 workers lose their jobs. How many people lose their job?

In the last year, England have won $\frac{5}{6}$ of their games. If they've played 30 games, how many games have they lost?

Finley and Gerry both are driving on the same 48km journey.
Finley is $\frac{3}{4}$ of the way and Gerry is $\frac{7}{12}$ of the way. Who's travelled the furthest so far?

Liam works at Aldi for 42 hours each week. He's on the checkout for $\frac{5}{6}$ of the time. How many hours is Liam on the checkout for?

Kyle has a 120g bar of chocolate. He gives a fifth to Peter. Draw a bar method to illustrate this.

Use simple proportion to solve value for money problems

A multipack of 6 cans of coke costs £1.80. How much does that make 1 can cost?

What is best value for money?
4 pack of toilet rolls for £1.20
9 pack of toilet rolls for £2.52

A small bag of chips costs 80p. A large bag of chips cost £1.50 and you get twice as many chips. Which bag is the best value for money? Explain why.

Jacob and Becca both buy 12 cans of beans. Jacob buys them in packs of 3 at 77p per pack and Becca buys them in packs of 4 at 99p per pack. Who pay more?

At Starbucks, for every £5 you spend they give 10p to charity. At Costa, for every £3 you spend, they give 7p to charity. Who gives the higher proportion to charity? Show your working.

Bob wants to change £10 into Euros. Which exchange rate will give him the most Euros?
Rate A - €6.84 = £5
Rate B - €1.35 = £1

A train journey from Sheffield to Leeds is 30 miles and costs £12.
A train journey from Sheffield to Rotherham is 6 miles and costs £3. Which journey is best value for money for the distance covered?

At an ice-cream parlour, one scoop costs £1.50 and three scoops cost £3.50. Which is best value for money?

Sun cream costs £7 per bottle, but you can buy 3 for £15. How much do save with this deal?

Batteries come in a pack of 4 for £1.60, a pack of 5 for £2 or a pack of 12 for £4.80. Which two packs are the same value for money? Show your working.

Multiply and divide numbers (including decimals) by powers of 10

What is 520 divided by 10?
Jess says 3.70 divided by 10 is 3.7. Paul says 3.70 divided by 10 is 0.370. Who is correct? Explain why the other person got it wrong.
Work out 345 divided by 100
It costs £7.95 to go to the cinema. If 100 people go to the cinema, how much would it cost?
In a restaurant the bill for 10 people was £134.50. How much does each person have to pay if they shared the bill equally?
Find 10% of 200
Find 1% of 320
1,000 people can fit on a ferry. If each ticket costs £24, how much would the ferry company make if the ferry was full?
A number is multiplied by 10,000 then divided by 100. The answer is 320. What number did I start with?
Jenny works out 10% of 45 and says the answer is 0.45. Is she correct? Why?

Use a timeline to add and subtract times (in context)

A train leaves Manchester at 07:40. It takes 2 hours and 12 minutes to get to Bristol. What time does it arrive in Bristol?

Kevin want to get to town. He leaves his house at 8:30am. It takes him 7 minutes to walk to the bus stop, 10 minutes to wait for the bus, then the bus takes 22 minutes to get into town. What time will he arrive in town?

The time is 12:52. Bob's watch is 2 hours and 15 minutes slow. What time does Bob's watch say?

The winner of a marathon ran the race in 2 hours and 24 minutes. Terry was 1 hour and 37 minutes behind the winner. What was Terry's time?

A news presenter arrives at the studio at 4:12pm. He will present the news in 2 hours and 13 minutes time. What time will this be?

Mick catches a train to London at 13:50. The journey takes 2 hours and 47 minutes. He needs to be in London at 4:30pm. Will he be late?

A plane takes off at 3:22 pm and lands 3 and a quarter hours later. What time does it land?

Which is later?
A - 1 and half hours before 4:44pm
B – 2 hours 12 minutes after 1:02pm

Paul's phone has enough battery to last 4 hours and 23 minutes. If it's 2:55pm now, what time will his phone run out of battery?

Cameron plugs his laptop in to charge at 11:22pm. It takes two hours and forty seven minutes to charge. What time will it finish charging? Write your answer in 24 hour time.

A football match was meant to start at 12:15, but was delayed by an hour and thirty seven minutes. What time did it start?