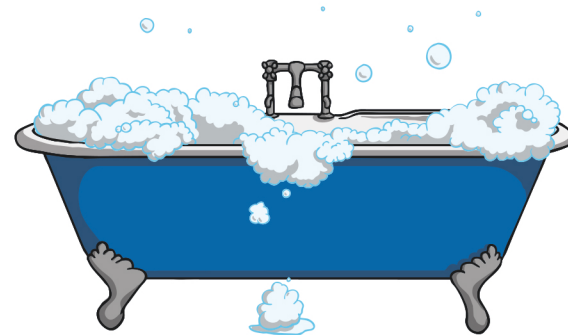# Mixed Maths
Challenge Cards

twinkl

Bath Filling Challenge

A can of pop holds 33 centiletres.

How many cans of pop would it take to fill a bath, that measures 1.5 metres long by 60cm wide?

Hint: 1 cubic centimetre is the same as 1 milliletre.

Bicycle and Scooter Challenge

Dan bought a bicycle and scooter for 60 pounds each. He sold them making a profit of 20% on the bicycle. He made a loss of 20% on the scooter.

How much did he get altogether when he sold the bicycle and scooter?

Book Page Challenge

The page of this book are numbered starting with the number 1. The page numbers have a total of 595.

How many pages does the book have?
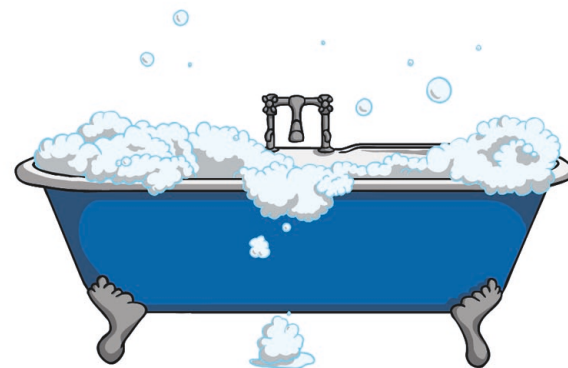
How many of the page numbers have a 5 in them?

Mixed Maths
Challenge Cards

twinkl

Bath Filling Challenge

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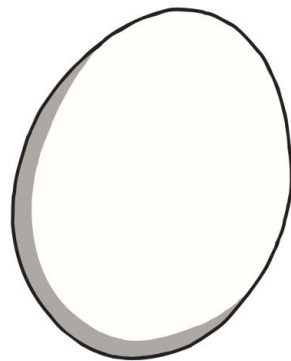
How many pages does the book have?

How many of the page numbers have a 5 in them?

Eggs Challenge

This baker spend 10 pounds on 100 eggs for her bakery.

Small eggs cost her 5p each.

Medium eggs cost her 10p each.

Large eggs cost her 50p each.

She bought the same number of eggs for two of the sizes. How many of each size did she buy?

Estimating Challenge

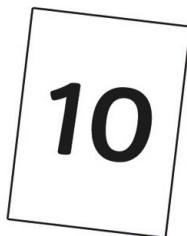Estimate how many sweets there are in this jar.

Five Number Challenge

Take 10 cards numbered 0 to 9.

Use all ten cards each time.

Sort the cards to make:
   1. five numbers that are multiples of 7
   2. five prime numbers
   3. five numbers that are multiples of 3.

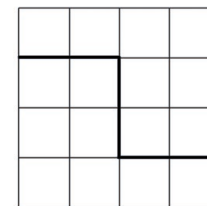Make up more problems to use all ten cards to make five numbers.

10

7

Grid Challenge

This grid is divided into two identical parts. Each part is exactly the same.

On some squared paper, draw a 4 by 4 grid.

Find five different ways of dividing the grid into two identical parts by drawing along the lines of the grid.

Rotations and reflections do not count!

Have a go at finding more ways of dividing the grid into two parts with equal areas but different shapes.

Heads and Tails Challenge

There are some coins on a table.

One half of them are heads up. If two of the coins are turned over, one third of them were heads up.

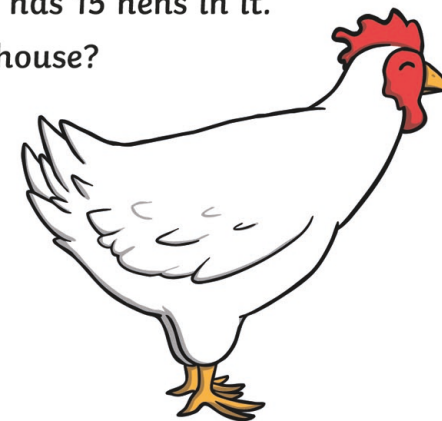How many coins are on the table?

Hen House Challenge

36 Hens live in these eight hen houses.

Each hen house has a different number of hens in it.

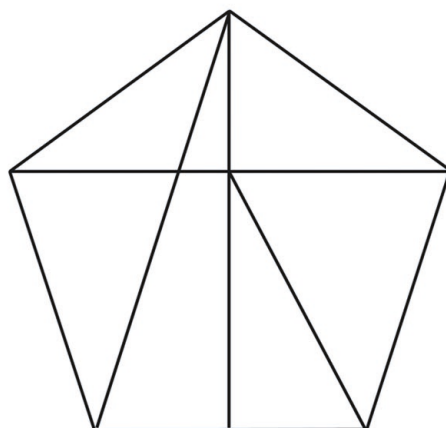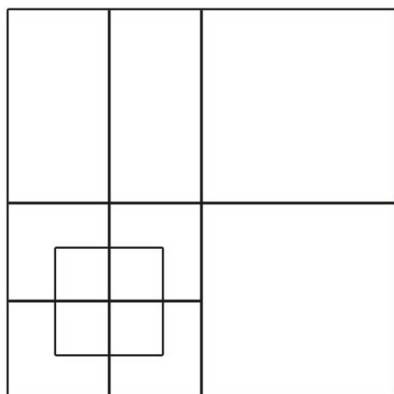Each line of three hen houses has 15 hens in it.

How many hens live in each house?

Hidden Shapes Challenge

How many squares can you count?

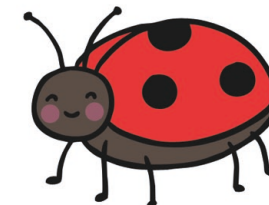How many triangles can you count?

Ladybird Spot Challenge

The red ladybirds have 3 spots.
The orange ladybirds have 8 spots.
Some red ladybirds and orange ladybirds have 52 spots altogether. How many red ladybirds are there?

How many orange ladybirds are there?

What is red ladybirds have 4 spots, orange ladybirds have 5 spots, and there are 68 spots altogether?
Find as many solutions as you can.

Lottery Challenge

Abbie won the lottery.

She spent two thirds of the money buying her mother and father a brand new house.

She then spent two thirds of what she had left on a new boat for her sister.

Then she shent two thirds of what was left on a motorbike for her brother.

She spent the last 15 thousand pounds on a new car.

How much money did Abbie win?

Making 100 Challenge

Choose four of these digits. Each one must be different. Put one digit in each box.

1 2 3 4 5 6 7 9

This makes two 2-digit numbers reading across and two 2-digit numbers reading down.

Add up all four of the numbers.

How many different ways of making 100 can you find?
How many different ways of making 200 can you find?

Millennium Challenge

2000

At what time of what day of what year would it be:

  a. 2000 seconds after the start of the year 2000?
  b. 2000 minutes after the start of the year 2000?
  c. 2000 hours after the start of the year 2000?
  d. 2000 days after the start of the year 2000?
  e. 2000 weeks after the start of the year 2000?

Number Linking Challenge

Link up any four numbers and find the total. Links can go up, down or sideways but not diagonally.

The total shown here is 5+4+19+17=45.

5	18	14	2
4	1	16	17
19	17	12	13
8	5	14	7

Find the highest possible total.
Find the lowest possible total.
Try linking five numbers.
Now try linking five numbers by only using diagonal links.

Number Shape Challenge

Each shape stands for a number.

The numbers shown are the totals of the line of four numbers in the row or column.

What are the remaining totals?
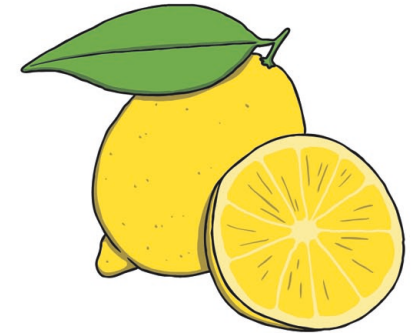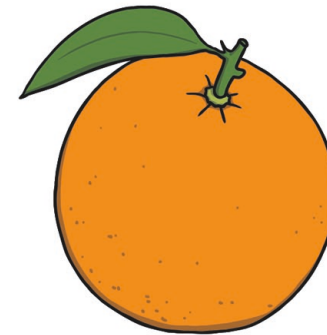
What numbers do each shape stand for?

20   28   22

Orange and Lemons Challenge

Oranges cost 26p each.

Lemons cost 18p each.

If you spent exactly 5 pound on a mixture of oranges and lemons how many of each did you buy?

Path Challenge

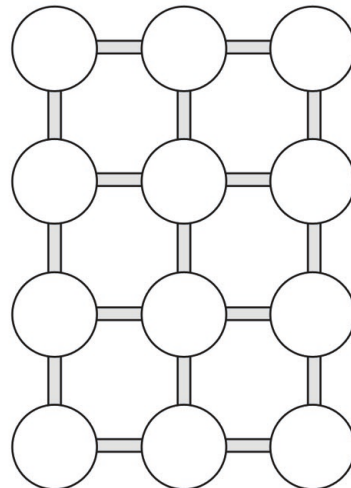4 rows of 3 circles are linked by 17 paths.

Each path is 10 metres long.

Go along each path at least once.

The route can start and end at any circle.

How long is the shortest route you can take?

What if there are 4 rows of 5 circles?

Penny Challenge

If you divide 15 pennies among four small bags you can pay any sum of money ranging from 1p to 15p using a combination of bags..

How many pennies did you put in each bag?

Pet Shop Challenge

A hamster costs 1 pound and 20 pence.

A guinea pig costs 1 pound and 50 pence.
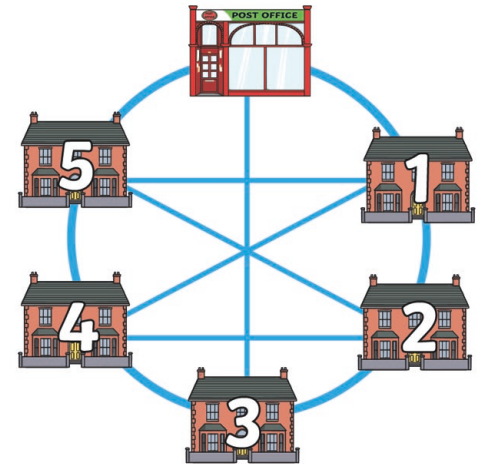
If you have 12 pounds how many of each kind can you buy?

Post Route Challenge

The postal worker starts at the Post Office and delivers one parcel to each of the numbered houses.

How many different routes can the postal worker take to deliver one parcel to each of the houses before returning to the Post Office?
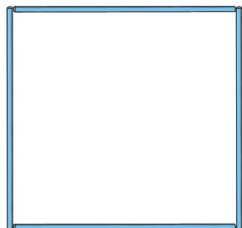
Square Straw Challenge

Take six straws each the same length. Cut two of them in half.
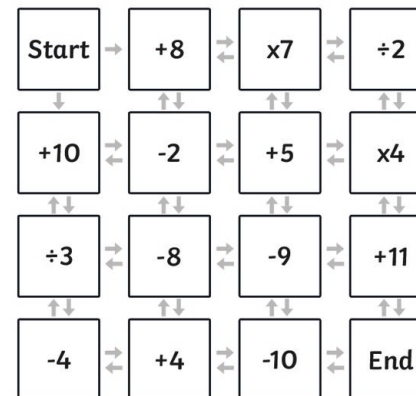
You now have eight straws, four long and four short.

You can make 2 squares from eight straws.

Arrange your eight straws to make 3 squares, all the same size.

Sun Maze Challenge

Start	+8	x7	÷2
+10	-2	+5	x4
÷3	-8	-9	+11
-4	+4	-10	End

Start with zero.

Can you find a route from 'Start' to 'End' that comes to the total of 100?
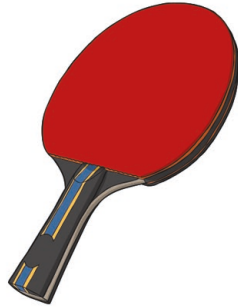
Can you find the route with the highest total?

Can you find the route with the lowest total?

Have a go at starting from different numbers.

Table Tennis Challenge

Only two boys and two girls can play table tennis.

Rachel doesn't mind who she plays with.

Liam will only play if Rachel plays.

Jon won't play if Lauren or Liam plays.

Sarah won't play if Jon is playing.
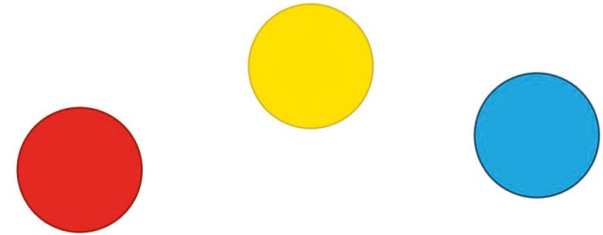
James will only play if Sarah plays.

Which two boys and which two girls play table tennis?
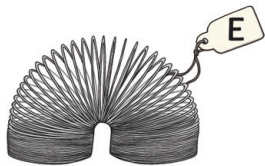
Three Digit Counter Challenge

Use 25 counters. You have to make a three-digit number by putting the counters into three piles.

You must use all 25 counters for each three-digit number you make.

How many different three-digit numbers can you make?

Write them in order.

Toy Shop Price Challenge

These 5 toys cost 24 pounds altogether.

Toys A and B cost a total of 7 pounds.

Toys B and C cost a total of 11 pounds.

Toys C and D cost a total of 8 pounds.

Toys D and E cost a total of 10 pounds.

How much did each toy cost?

What Age Challenge

1. My mum is 35.

9 years ago she was the age I shall be in 13 years' time. How old am I now?

2. Last year my age was a square number.

Next year it will be a cube number.

How old am I?

3. My age next year will be a multiple of 8.

My age now is a multiple of 7.

How old am I?

Answers

Bath Filling Challenge
A bath measuring 1.5 metres long by 60cm wide would have an area of approximately 9000cm². If the level of liquid (pop) in the bath was 30cm high, the volume of liquid would be about 270 000 cm³ or 270 000ml. This would require approximately 810 cans of pop.

Bicycle and Scooter Challenge
Dan made £12 profit on the bicycle and £12 loss on the scooter.
60 + 12 = £72
60 − 12 = £48
72 + 48 = £120.

Book Page Challenge
There are 34 pages in the book. 3 of the pages have a number 5.
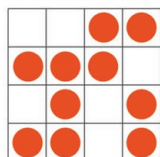
Café Challenge
A bun costs £1.50.
A cup of tea costs £1.00.
A cup of coffee costs £2.00.

Car Sale Challenge
John made £200.

Counter Square Challenge

Cube Challenge
A dice has 6 faces and each face could be rotated 4 different ways, so 6 x 4 = 24. You could fit a cube into a box 24 different ways.

Egg Challenge
The baker buys:
10 large eggs
10 medium eggs
80 small eggs

Estimating Challenge
A logical answer might be approximately 100.
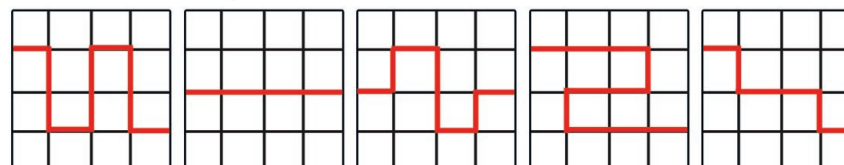
Five Number Challenge
There are many different possibilities for each problem. Here is an example for each one:

a) Five numbers that are multiples of 7 – 7, 42, 63, 98, 105.

b) Five prime numbers – 5, 23, 67, 89, 401.

c) Five numbers that are multiples of 3 – 12, 39, 45, 60, 78.

Grid Challenge

Heads and Tales Challenge
12 coins were on the table.

Hen House Challenge
These are different possibilities. Here is one example:

3	5	7
4		2
8	1	6

Answers

Hidden Shapes Challenge
13 Squares

Ladybird Spot Challenge
Part One
There could be:
  a) 5 orange ladybirds and 4 red ladybirds
  b) 2 orange ladybirds and 12 red ladybirds.
Part Two
There could be:
  a) 12 orange ladybirds and 2 red ladybirds
  b) 8 orange ladybirds and 7 red ladybirds
  c) 4 orange ladybirds and 12 red ladybirds.

Lottery Challenge
She spent £135,000 on a house for her mum and dad.
She spent £90,000 on a boat for her sister.
She spent £30,000 on a motorbike for her brother.
She spent £15,000 on a new car.
Abbie won £202,500 on the lottery.

Making 100 Challenge
Part One – There are many diferent ways of making 100, for example:

2	1
3	8

21 + 23 + 18 + 38

Part Two – There are many different ways of making 200, for example:

6	2
4	7

62 + 64 + 18 + 38

Millenium Challenge
00:33:20 1st January 2000
09:20:00 2nd January 2000
08:00 23rd March 2000
00:00 23rd June 2005
00:00 1st May 2038

Number Linking Challenge
Part One – Using 4 numbers, here are the numbers you can make:
Highest number: 18 + 14 + 16 + 17 = 65
Lowest number: 5 + 4 + 1 + 16 = 26
Part Two – Using 5 numbers, here are the numbers you can make:
Highest number: 19 + 17 + 12 + 16 + 17 = 83
Lowest number: 5 + 4 + 1 + 17 + 5 = 31
Part Three – Using 5 numbers joined diagonally, here are the numbers you can make:
Lowest number: 5 + 1 + 19 + 5 + 12 = 42
Highest number: 18 + 16 + 13 + 14 + 17 = 78
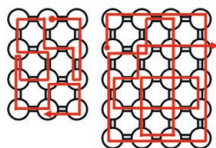
Number Shape Challenge

Star = 7, Circle = 4, Triangle = 5.

Oranges and Lemons Challenge
You could buy 13 oranges and 9 lemons or 4 oranges and 22 lemons.

Answers

Path Challenge

Pet Shop Challenge

You could buy:
10 hamsters
8 guinea pigs
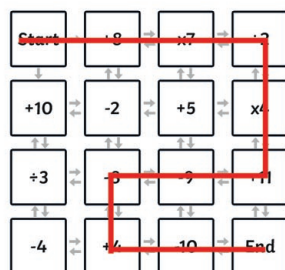5 hamsters and 4 guinea pigs

Post Route Challenge

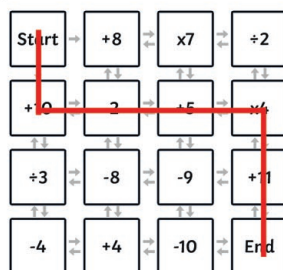There are multiple possibilities in this problem. How many can you find?
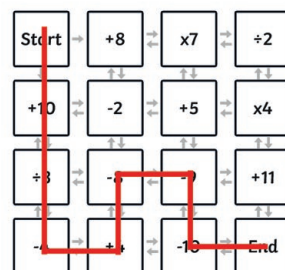
Square Straw Challenge

Sun Maze Challenge

=100

highest total = 31

lowest total = −35

Penny Challenge

Bag 1 has 1p, bag 2 has 2p, bag 3 has 4p and bag 4 has 8p.

Table Tennis Challenge

The two boys are James and Liam.
The two girls are Rachel and Sarah.

Three Digit Counter Challenge

It is possible to make six different numbers.
799, 889, 898, 979, 988 and 997.

Toy Shop Price Challenge

A costs £3
B costs £4
C costs £7
D costs £1
E costs £9

What Age Challenge

1. 13 years old
2. 26 years old
3. 47 years old