

Mathematical challenges for able pupils

Year 6 A Counting, partitioning and calculating



Flash Harry

In April Flash Harry bought a saddle for £100.

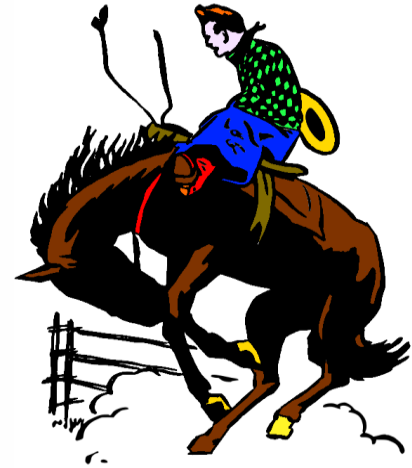
In May he sold it for £200.

In June he was sorry he had sold it.

So he bought it back for £300.

In July he got tired of it.

So he sold it for £400.



Overall, did Flash Harry make or lose money?

How much did he make or lose?

Learning Objective:

- Solve mathematical problems or puzzles.
- Use negative numbers.



Solution to Flash Harry

Flash Harry's bank balance looked like this.

April – £100

May + £100

June – £200

July + £200

So Harry made £200 overall.



Learning Objective:

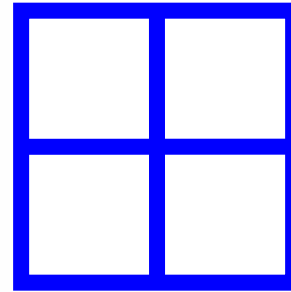
- Solve mathematical problems or puzzles.
- Use negative numbers.

Make 200

1 2 3 4 5 6 7 8 9

Choose four of these digits.

Each one must be different.



Put one digit in each box.
This makes two 2-digit numbers reading across
and two 2-digit numbers reading down.

Add up all four of the numbers.

On the next page in an example....



Learning Objective:

- Solve mathematical problems or puzzles.
- Know what each digit represents.
- Add several two-digit numbers.

Make 200

In this example the total is
100.

$$12 + 47 + 14 + 27 = 100$$

How many different ways
of making 200 can you
find?

1	2
4	7



Learning Objective:

- Solve mathematical problems or puzzles.
- Know what each digit represents.
- Add several two-digit numbers.

Solution to Make 200

There are 22 different solutions. Eleven of the solutions are as follows:

1	9	2	8	2	9	3	5	6	1	6	2
7	2	6	3	5	3	7	4	5	7	4	7
4	1	4	2	4	3	5	1	7	1		
9	5	8	5	7	5	7	6	3	8		

Eleven more solutions are formed by changing over the two digits in the topright and bottom left boxes.

Learning Objective:

- Solve mathematical problems or puzzles.
- Know what each digit represents.
- Add several two-digit numbers.

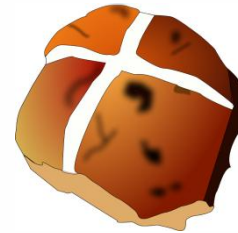


Spendthrift

Choc bars cost 26p each.



Hot cross buns cost 18p each.



Anil spent exactly £5 on a mixture of choc bars and hot cross buns.

How many of each did he buy?

(There are at least 2 solutions to find!)

Learning Objective:

- Solve mathematical problems or puzzles.
- Choose and use efficient calculation strategies to solve a problem.
- Add sums of money.



Solution for Spendthrift

Anil bought **13 choc bars and 9 fruit bars,**

or

4 choc bars and 22 fruit bars.

Learning Objective:




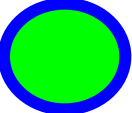


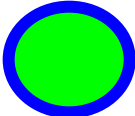



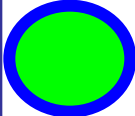
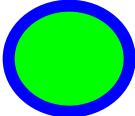
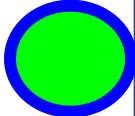
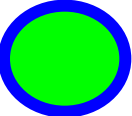











- Solve mathematical problems or puzzles.
- Choose and use efficient calculation strategies to solve a problem.
- Add sums of money.



Shape puzzle

Each shape stands for a number.

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

Learning Objective:

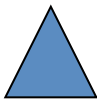


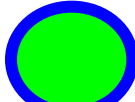

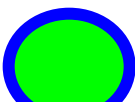


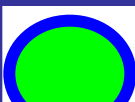
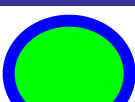
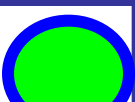
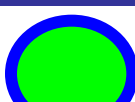




- Solve mathematical problems or puzzles.
- Use a symbol to stand for an unknown number.
- Explain methods and reasoning.

Solution for Shape puzzle

The circle has the value 5.

The triangle has the value 8.

The heart has the value 6.

				27
				25
				20
				28
27	22	25	26	



Learning Objective:

- Solve mathematical problems or puzzles.
- Use a symbol to stand for an unknown number.
- Explain methods and reasoning.

The end,thank you!



References and additional resources.

The questions from this PowerPoint came from:

Mathematical challenges for able pupils in Key Stages 1 and 2

Corporate writer was Department for Education and Employment and it is produced under a © Crown copyright 2000

Thank You

PowerPoint template published by www.ksosoft.com

These Mental Maths challenges can be found as a PDF file at :

http://www.edu.dudley.gov.uk/numeracy/problem_solving/Mathematical%20Challenges%20Book.pdf

Contains public sector information licensed under the Open Government Licence v3.0.
(<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>)

All images used in this PowerPoint was found at the free Public Domain Clip Art site. (<https://openclipart.org/>)

These units were organised using advice given at:

http://www.edu.dudley.gov.uk/numeracy/problem_solving/Challenges%20and%20Blocks.doc

