

Puzzles and problems for Years 5 and 6

Make five numbers

Take ten cards numbered 0 to 9.



Each time use all ten cards.

Arrange the cards to make:

- a. five numbers that are multiples of 3
- b. five numbers that are multiples of 7
- c. five prime numbers

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

61

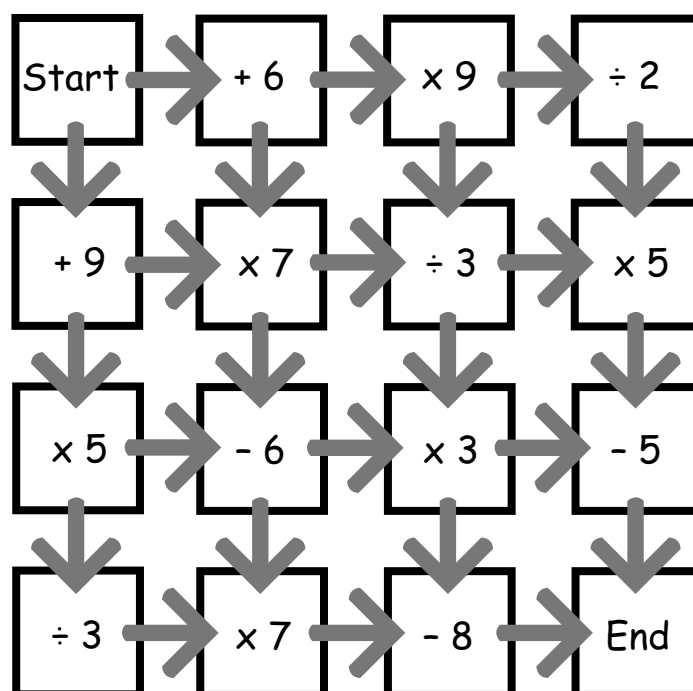
Teaching objectives

Solve mathematical problems or puzzles.
Know 3 and 7 times tables.
Recognise prime numbers.

Maze

Start with zero.

Find a route from 'Start' to 'End' that totals 100 exactly.



Which route has the highest total?

Which has the lowest total?

Now try some different starting numbers.

Teaching objectives

Solve mathematical problems or puzzles.
Add and subtract two-digit numbers mentally.
Multiply and divide by single-digit numbers.

62

Jack's book

The pages of Jack's book are numbered from 1.



The page numbers have a total of 555 digits.

How many pages has the book?

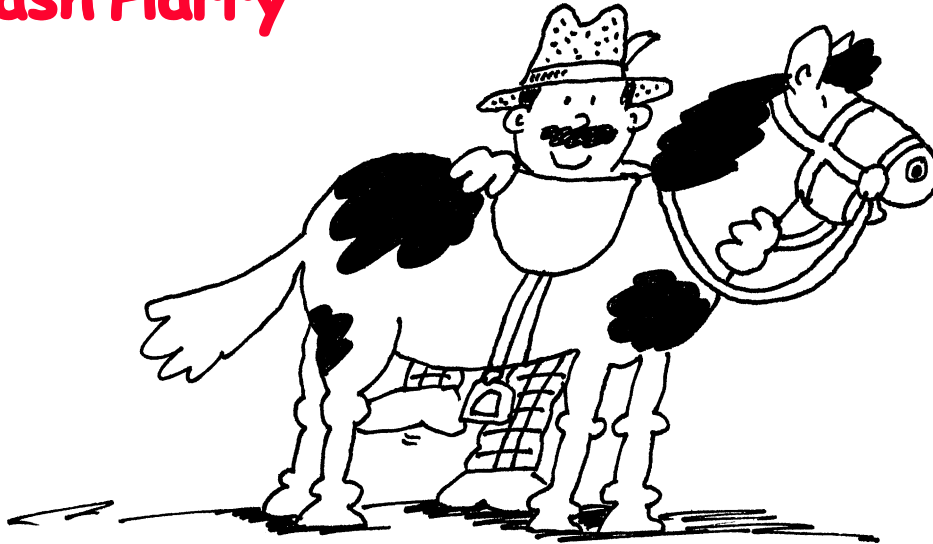
How many of the digits are a 5?

63

Teaching objectives

Solve mathematical problems or puzzles.
Know what each digit represents.

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?

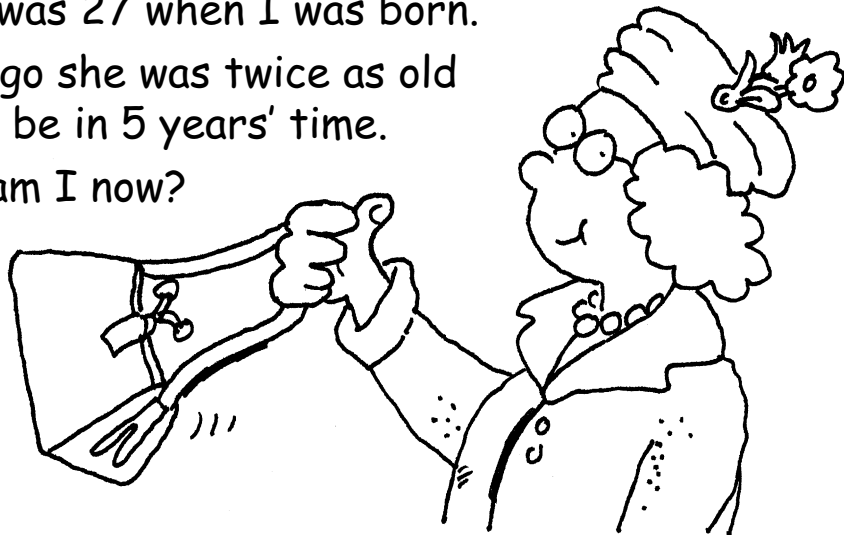
Teaching objectives

Solve mathematical problems or puzzles.
Use negative numbers.

64

Age old problems

1. My age this year is a multiple of 8.
Next year it will be a multiple of 7.
How old am I?
2. Last year my age was a square number.
Next year it will be a cube number.
How old am I?
How long must I wait until my age is both
a square number and a cube?
3. My Mum was 27 when I was born.
8 years ago she was twice as old
as I shall be in 5 years' time.
How old am I now?

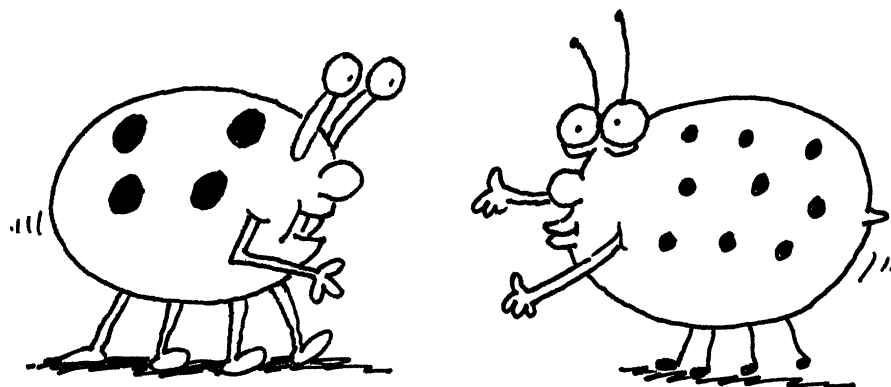


65

Teaching objectives

Solve mathematical problems or puzzles.
Know multiplication facts to 10×10 .
Recognise square and cube numbers.

Zids and Zods



Zids have 4 spots.

Zods have 9 spots.

Altogether some Zids and Zods have 48 spots.

How many Zids are there?

How many Zods?

What if Zids have 5 spots, Zods have 7 spots,
and there are 140 spots altogether?

Find as many solutions as you can.

Teaching objectives

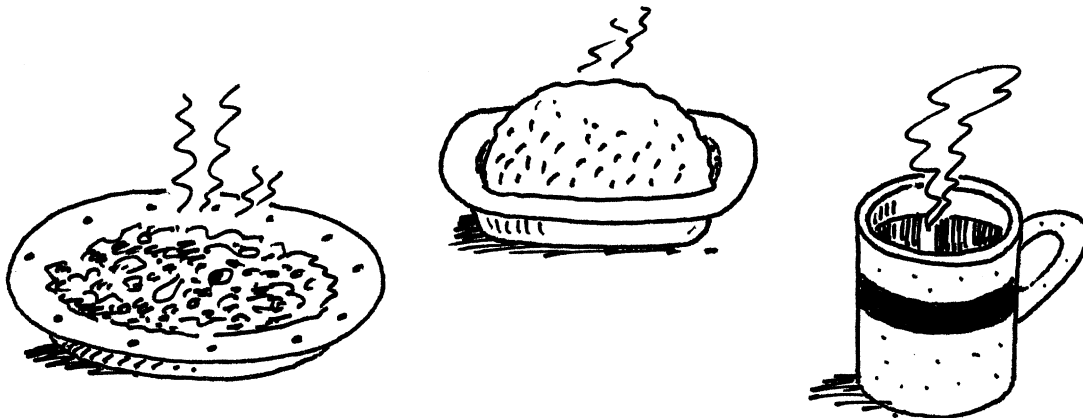
Solve mathematical problems or puzzles.

Know multiplication facts to 10×10 .

Add two-digit numbers mentally.

66

Franco's fast food



This is what food costs at Franco's café.

1 curry and 1 tea cost £4.

2 curries and 2 puddings cost £9.

1 pudding and 2 teas cost £2.

What do you have to pay in total for

1 curry, 1 pudding and 1 tea?

What does each item cost on its own?

67

Teaching objectives

Solve mathematical problems or puzzles.
Explain methods and reasoning.

Albert Square



36 people live in the eight houses in Albert Square.
Each house has a different number of people living in it.
Each line of three houses has 15 people living in it.
How many people live in each house?

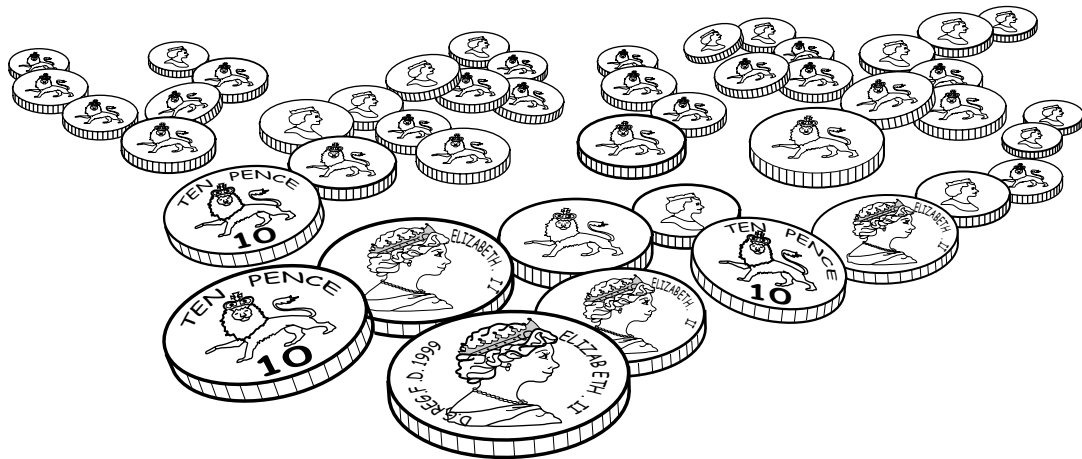
Teaching objectives

Solve mathematical problems or puzzles.
Add several small numbers mentally.
Explain methods and reasoning.

68

Coins on the table

Anna put some 10p coins on the table.
One half of them were tails up.



Anna turned over two of the coins, and then
one third of them were tails up.

How many coins did Anna put on the table?

69

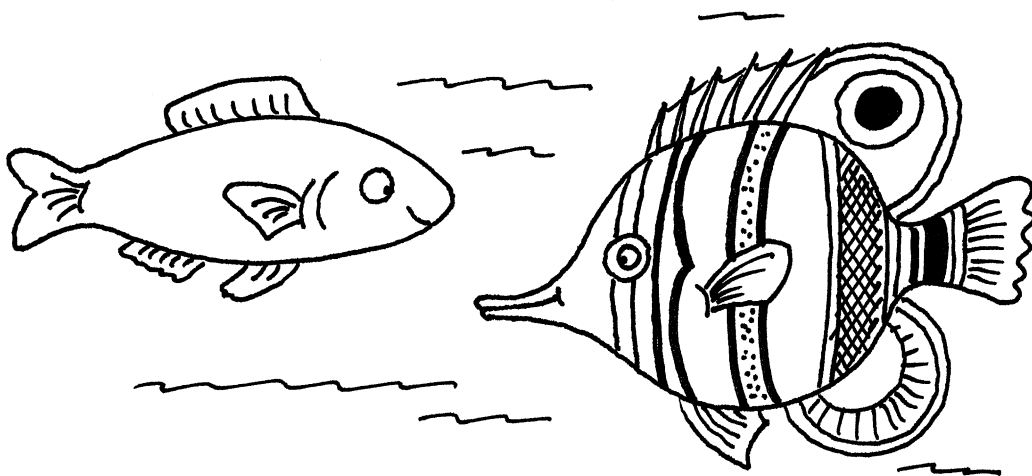
Teaching objectives

Solve mathematical problems or puzzles.
Understand simple fractions.
Explain methods and reasoning.

A bit fishy

A goldfish costs £1.80.

An angel fish costs £1.40.



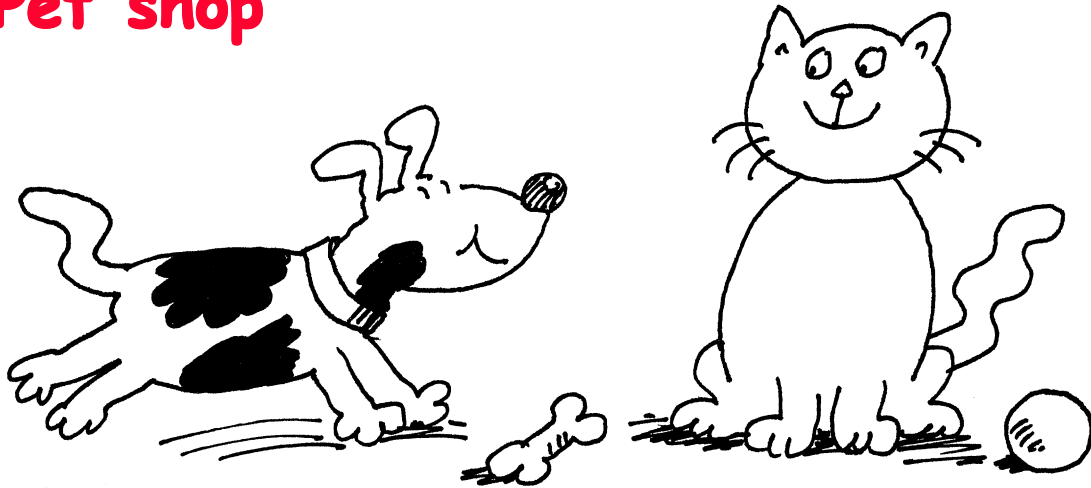
Nasreen paid exactly £20 for some fish.
How many of each kind did she buy?

Teaching objectives

Solve problems involving ratio and proportion.
Choose and use efficient calculation strategies to solve a problem.
Explain methods and reasoning.

70

Pet shop



1. Jim bought a cat and dog for £60 each.
Later he sold them.
He made a profit of 20% on the dog.
He made a loss of 20% on the cat.
How much did he get altogether when he sold the cat and dog?
2. Jim bought another cat and dog.
He sold them for £60 each.
He made a profit of 20% on the dog.
He made a loss of 20% on the cat.
Did he make a profit or loss on the whole deal?

71

Teaching objectives

Solve mathematical problems or puzzles.
Find simple percentages.