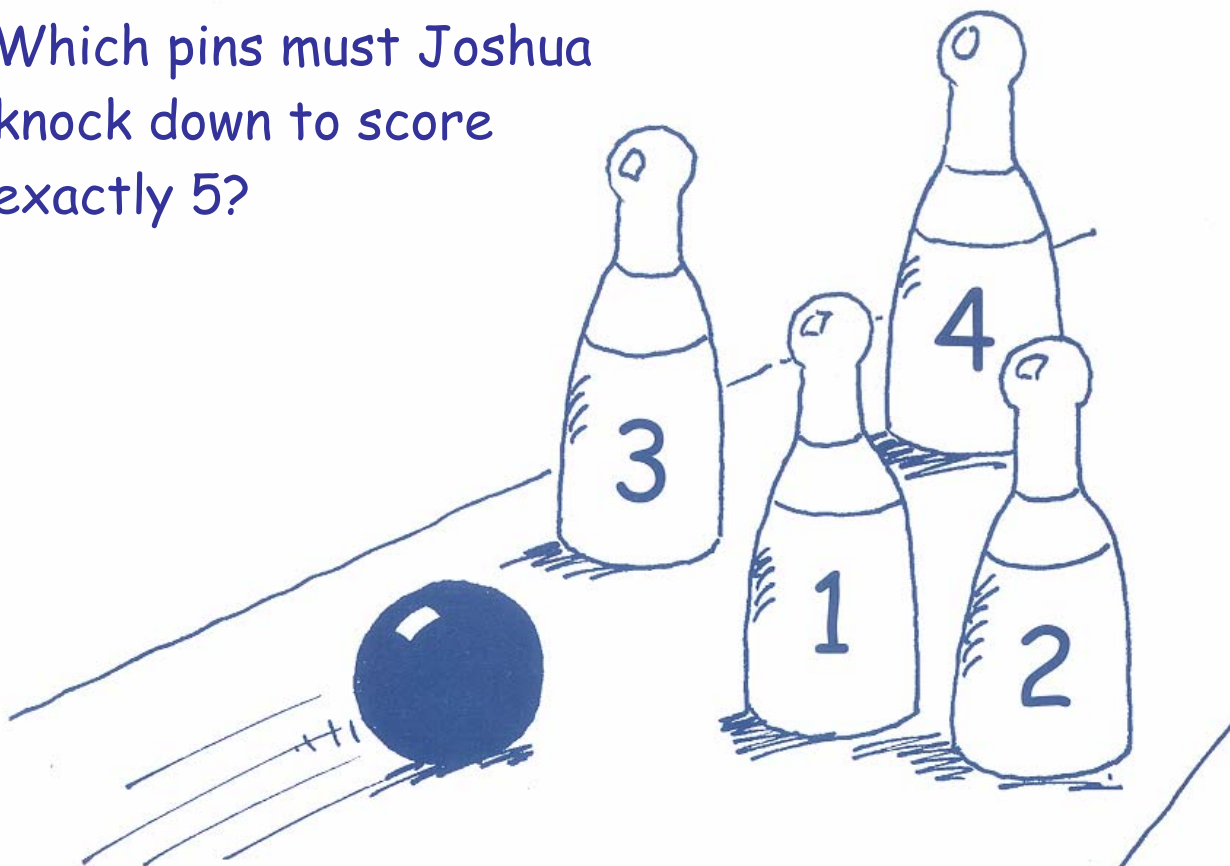# Puzzles and Problems for Year 1 and Year 2

Four-pin bowling

Which pins must Joshua
knock down to score
exactly 5?

Find 2 different ways:

a. to score 5
b. to score 6
c. to score 7

1

Gob-stopper

Jade bought a gob-stopper.
It cost 6p.

She paid for it exactly.
Which coins did she use?

There are 5 different ways to do it.
Find as many as you can.

What if the gob-stopper cost 7p?

2

Mathematical challenges for able pupils in Key Stages 1 & 2 – DfEE 0083/2000

P/LL/SI/KS/MATHS CHALLENGES/PBR326

Pick a pair

Choose from these numbers.

Pick a pair of numbers.
Add them together.
Write the numbers and the answer.

Pick a different pair of numbers.
Write the numbers and the answer.

Keep doing it.
How many different answers can you get?

Now take one number from the other.
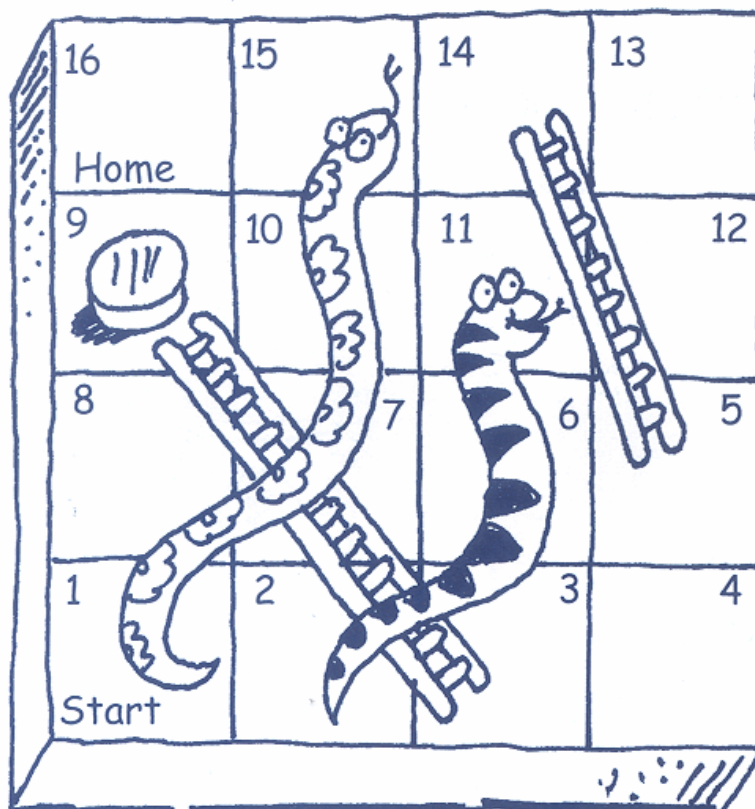How many different answers can you get now?

3

Snakes and ladders

Your counter is on 9.

You roll a 1 to 6 dice.
After two moves you land on 16.

Find all the different ways you can do it.
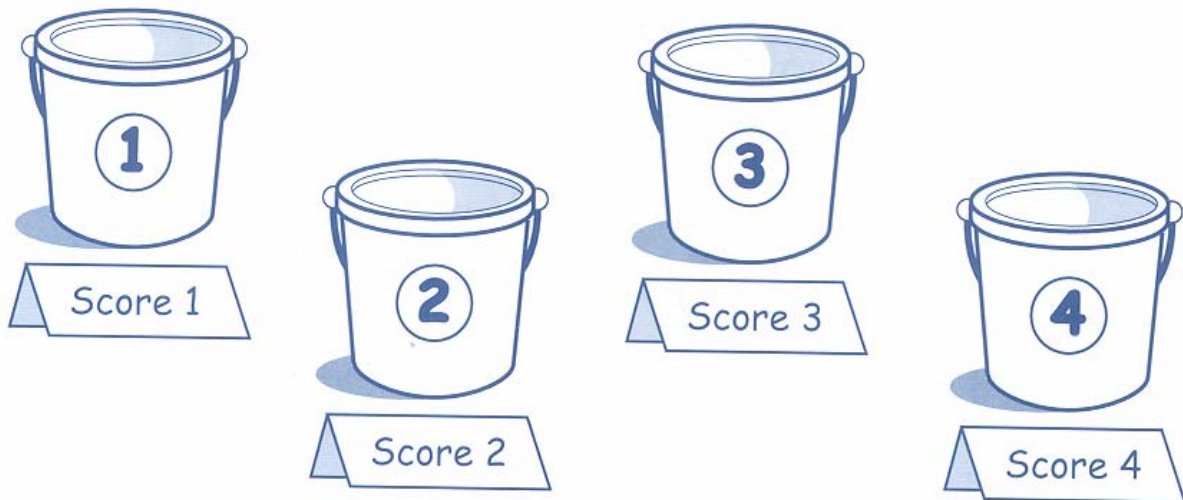
Now think of other questions you could ask.

4

Bean-bag buckets

Dan threw 3 bean-bags.
Each bag went in a bucket.
More than one bag can go in a bucket.

1. What is the highest score Dan can get?

2. Find three ways to score 6.

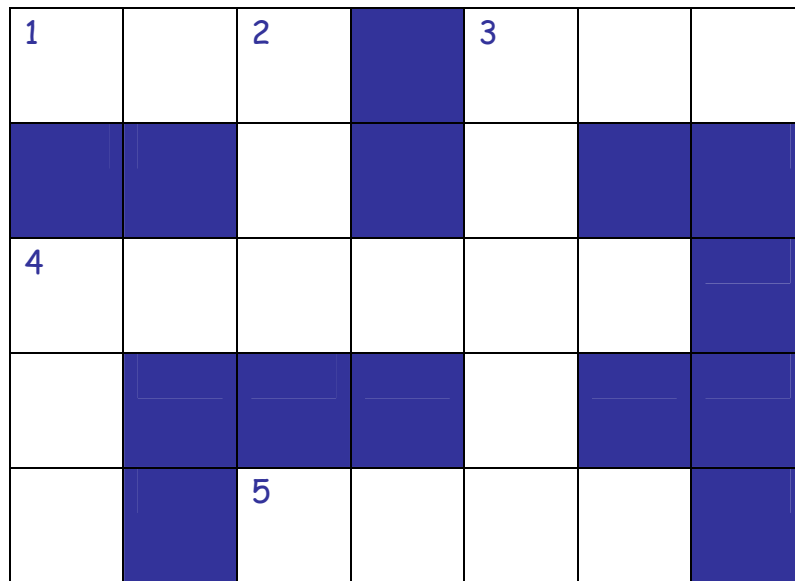3. Find three ways to score 9.

4. What other scores can Dan get?

5

Crossword

Write the answers to this puzzle in words:
ONE, TWO, THREE, ...

1		2	■	3		
■	■		■		■	■
4						■
	■	■	■		■	■
	■	5				■

Across

1. 7 – 5
3. 2 + 5 – 1
4. 4 + 4 + 4
5. 13 - 4

Down

2. 3 + 4 – 6
3. 9 – 2
4. 11 – 4 + 3

6
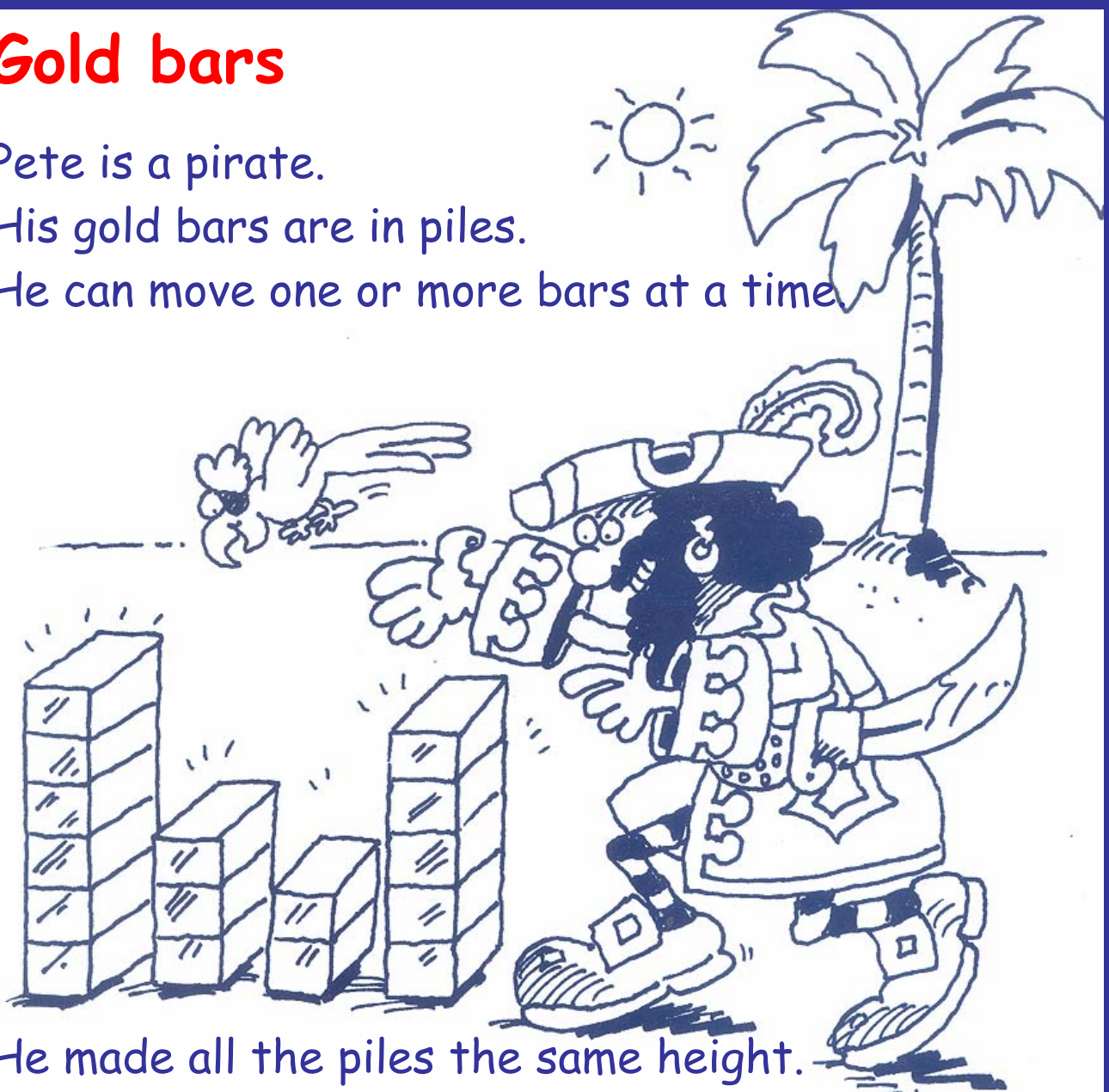
Gold bars

Pete is a pirate.

His gold bars are in piles.

He can move one or more bars at a time

He made all the piles the same height.

He made just two moves.

How did he do it?

7

Ride at the fair

Lucy had a ride at the fair.
Her Mum asked Lucy to pay less than 20p towards it.

Lucy paid exactly three coins towards the ride.
How much did Lucy pay her Mum?

Find different ways to do it.

8

Sum up

Choose from these four cards.

Make these totals:

9

10

11

12
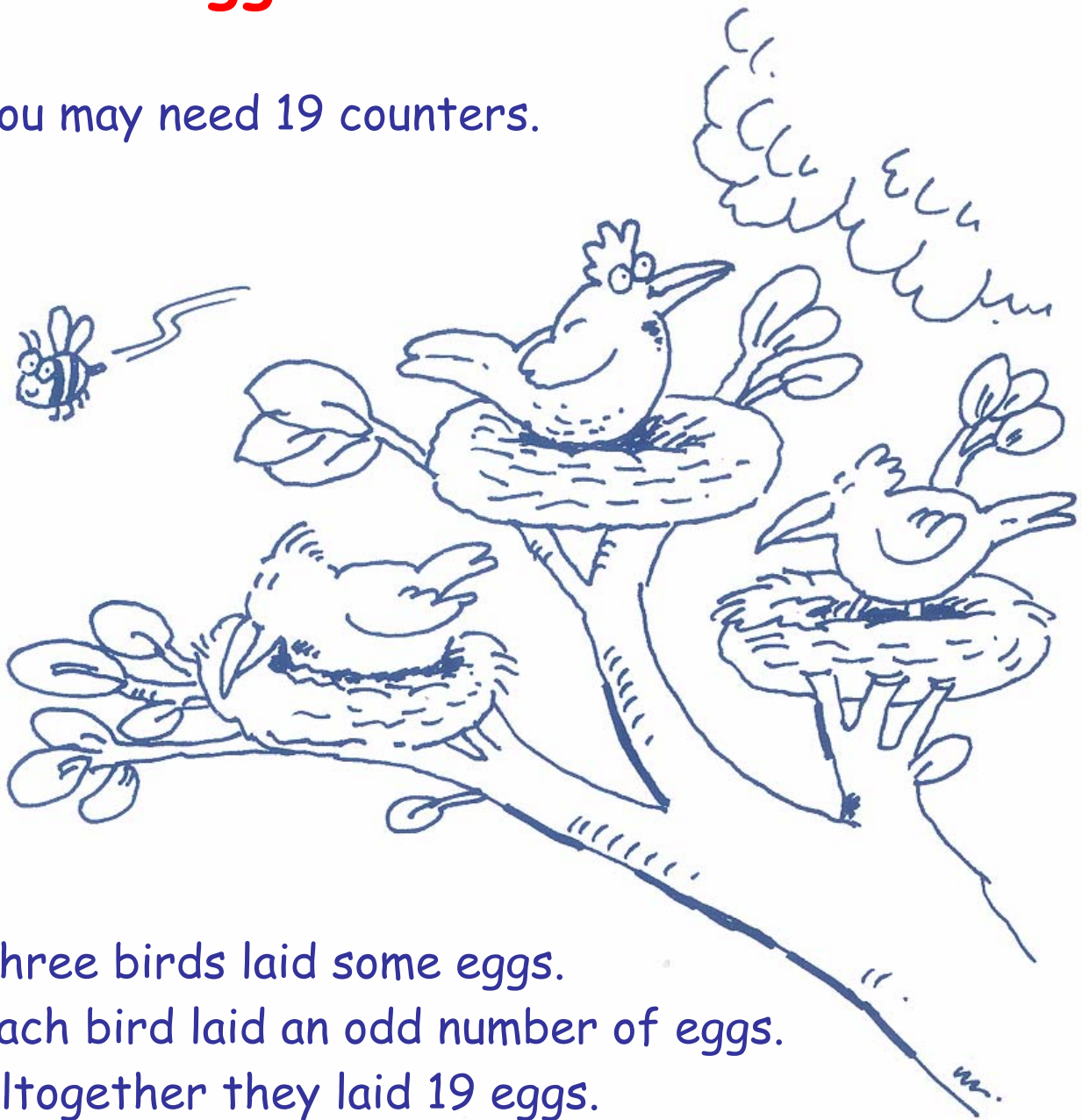
13

14

15

What other totals can you make from the cards?

9

Birds' eggs

You may need 19 counters.

Three birds laid some eggs.
Each bird laid an odd number of eggs.
Altogether they laid 19 eggs.

How many eggs did each bird lay?
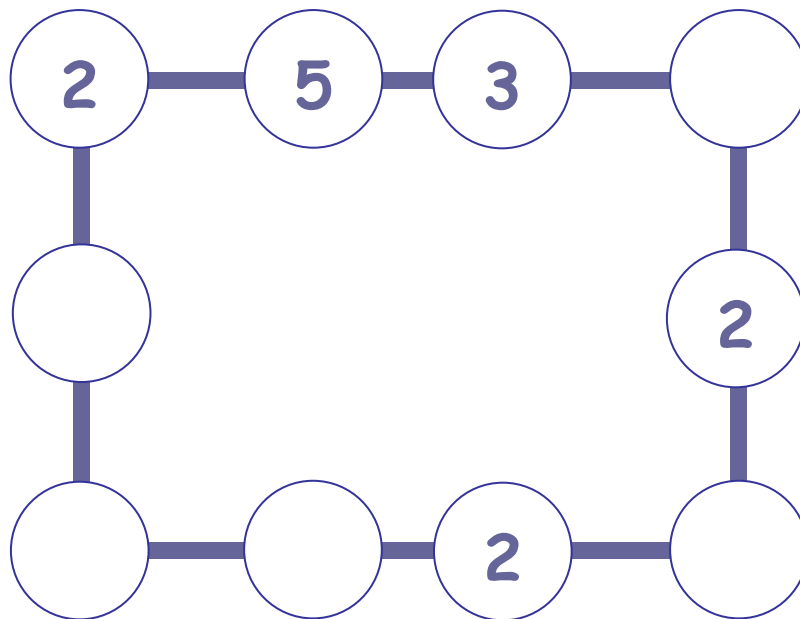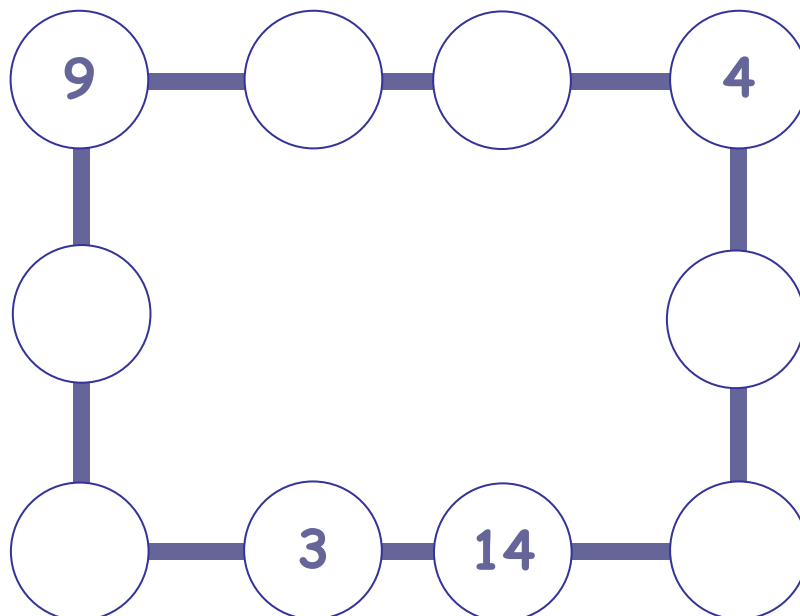Find different ways to do it.

10

Number lines

1. Make each line add up to 16.

2. Make each line add up to 20.

3. Make up your own puzzle like this.
   Ask a friend to do it.

11

Teaching objectives
Solve mathematical problems or puzzles.
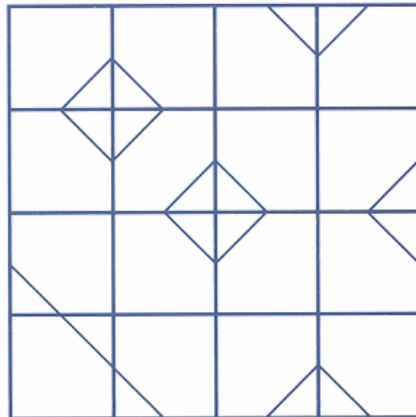Know addition and subtraction facts up to 20.
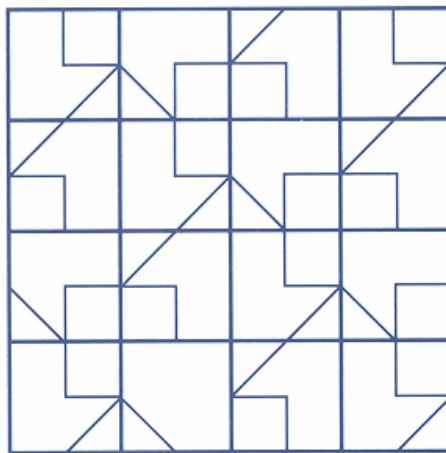Add three small numbers mentally.

Odd one out

Here is a grid of 16 squares.
One square is different from all the others.
Mark it on the grid.

Now do this one.

Line of symmetry

You need:
some squared paper,
a red pen, a green pen and a blue pen.

Gopal had six squares: two red, two green, two blue.
He put them in a line.
The squares made a symmetrical pattern.

| red | blue | green | green | blue | red |

Arrange six squares in a line.
Make two squares red, two green and two blue.
Make the line of squares symmetrical.
How many different lines can you make like this?

13

Card sharp

Take ten cards numbered 0 to 9.

Pick three cards with a total of 12.
You can do it in 10 different ways.
See if you can record them all.

Now pick four cards with a total of 12.
How many different ways can you do it?

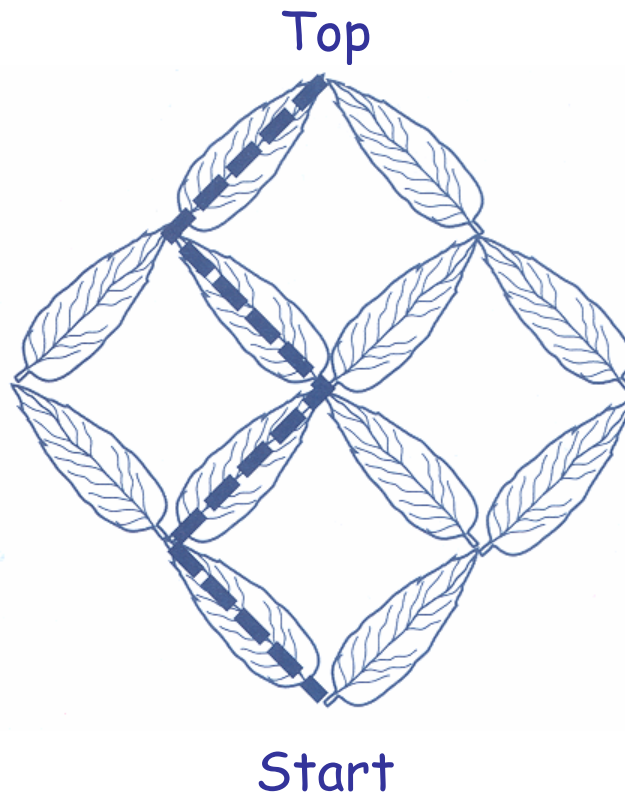
Can you pick five cards with a total of 12?

14

Jack and the beanstalk

Jack climbed the beanstalk.
He always went upwards.

Top

Start

He first did it like this: left, right, left, right

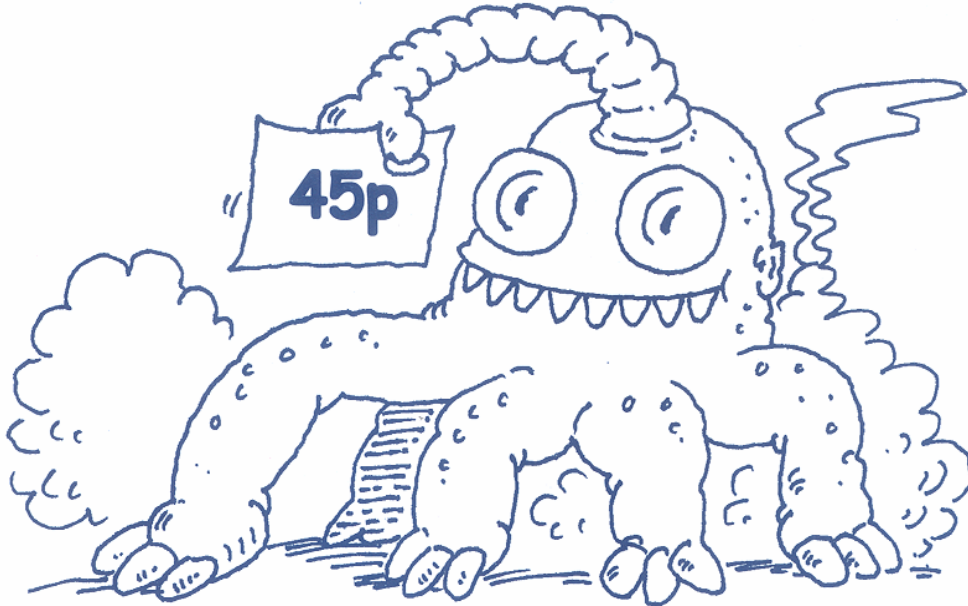Find five other ways that Jack can climb the beanstalk.

15

Teaching objectives
Solve mathematical problems or puzzles..
Recognise turns to the left or to the right.
Give instructions for moving along a route.

Monster

Alesha bought a monster using only silver coins.
It cost her 45p.

There are nine different ways to pay 45p exactly using only silver coins.
Find as many as you can.

What if the monster cost 50p?
How many different ways are there to pay now?
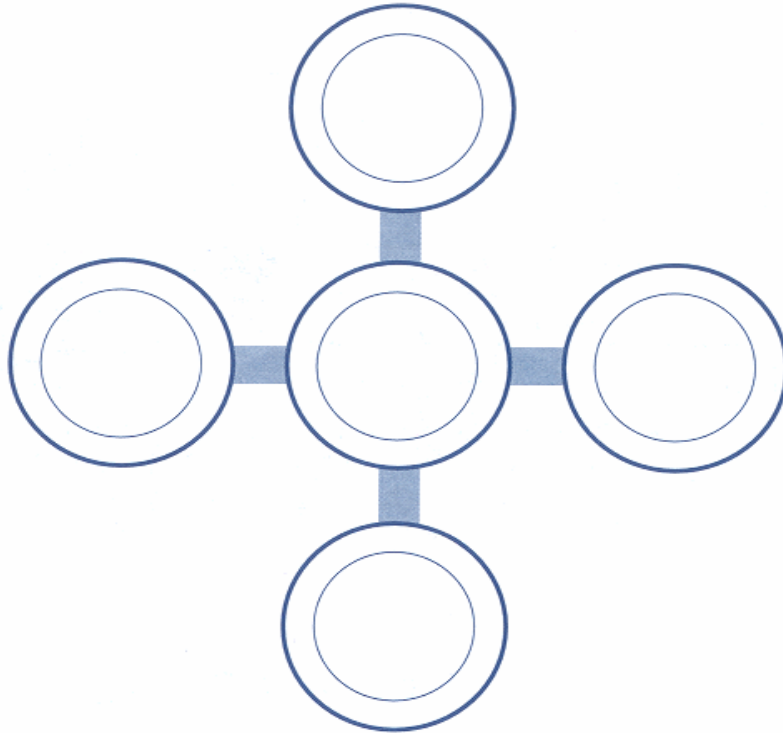
16

Teaching objectives
Solve mathematical problems or puzzles.
Find totals.
Work out which coins to pay..

Cross-road

You need 5 paper plates and 15 counters.
Put the plates in a cross.

Use all 15 counters.

Put a different number on each plate.

Make each line add up to 10.

Do it again.

This time make each line add up to 8.

Fireworks

Emma had some fireworks.
Some made 3 stars.
Some made 4 stars.

Altogether Emma's fireworks made 19 stars.
How many of them made 3 stars?
Find two different answers.

What if Emma's fireworks made 25 stars?
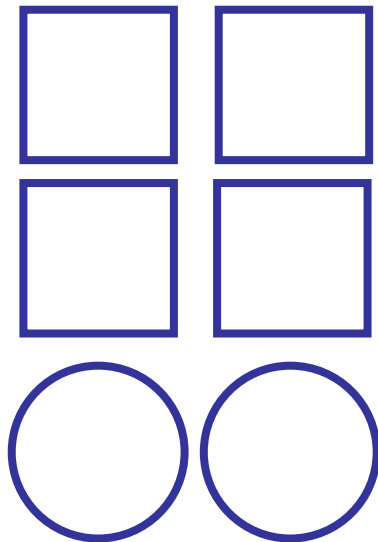Find two different answers.

18

Coloured shapes

What colour is each shape?
Write it on the shape.

Clues

♦ Red is not next to grey.

♦ Blue is between white and grey.

♦ Green is not a square.

♦ Blue is on the right of pink.

19

Ones and twos

Holly has six numbers, three 1s and three 2s.
She also has lots of + signs, x signs and = signs.

$$1 \quad 2 \quad 1 \quad 2 \quad 1 \quad 2$$

She is trying to make the biggest number possible.
Here are some she tried.

First try	Second try
1 x 2 = 2	1 + 2 + 1 + 2 + 1 + 2 = 9
1 x 2 = 2	
1 x 2 = 2	
2 + 2 + 2 = 6	

Can you beat Holly's score?

What if Holly had three 2s and three 3s?

20

Birthdays

Mum and Paul are talking about birthdays.

They take Paul's age and
double it.
Then they add 5.
The answer is 35.
Mum says this is her age.
How old is Paul?

Make up more problems like this.
Try to use some of these words:

double   halve   add   subtract

Mathematical challenges for able pupils in Key Stages 1 & 2 – DfEE 0083/2000

P/LL/SI/KS/MATHS CHALLENGES/PBR326

Christmas tree

Rudolph put four stars on a tree.
He coloured each star either red or yellow.

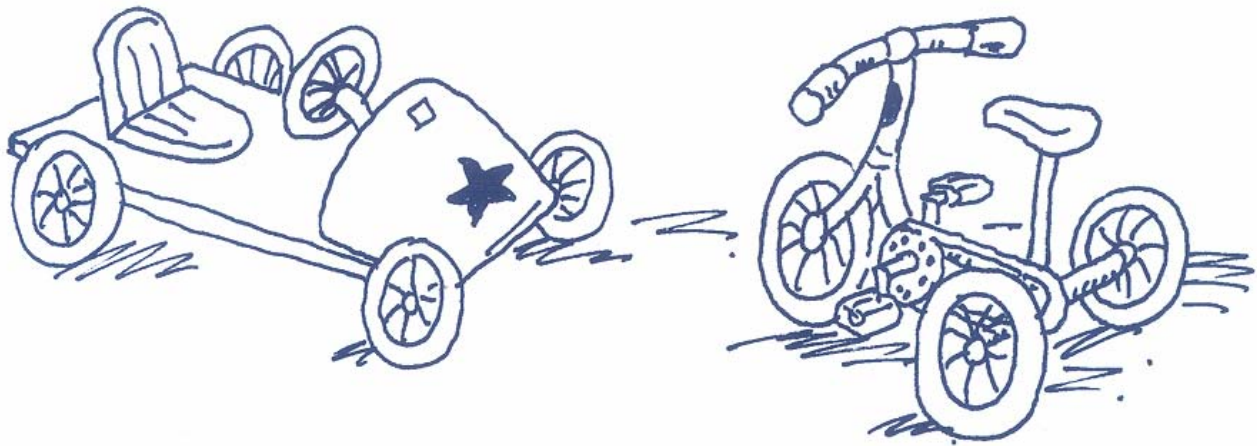In how many different ways can Rudolph colour the four stars?

22

At the toy shop

The toy shop stocks tricycles and go-carts.
The tricycles have 3 wheels.
The go-carts have 5 wheels.

Suna counted the wheels.
He counted 37 altogether.

How many tricycles are there?
How many go-carts?

Find two ways to do it.

23

Ben's numbers

Ben has written a list of different whole numbers.
The digits of each number add up to 5.
None of the digits is zero.

Here is one of Ben's numbers.

23

Ben has written all the numbers he can think of.
How many different numbers are there in his list?

Write all the numbers in order.
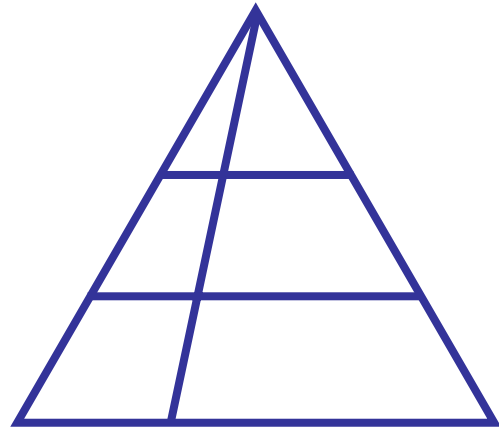
24

Teaching objectives
Solve a given problem by organising and interpreting data in a simple table.
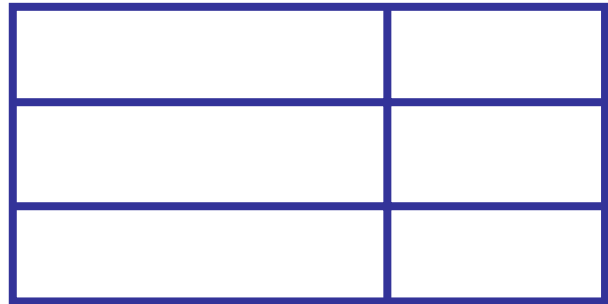Write whole numbers in figures; know what each digit represents.
Order whole numbers.

Spot the shapes 1

How many triangles
can you count?

How many rectangles
can you count?

Draw your own diagram to count triangles.
How many can a friend find?
Can you find more?

25

Teaching objectives
Solve mathematical problems or puzzles.
Visualise 2-D shapes.
Explain methods and reasoning.