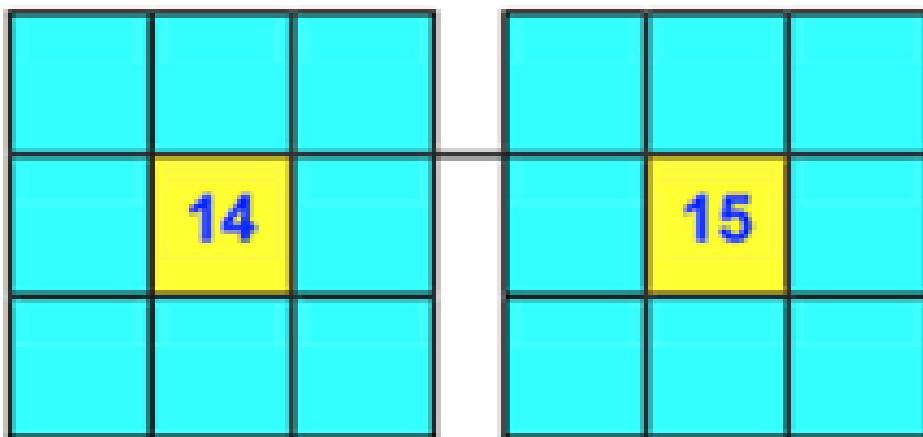
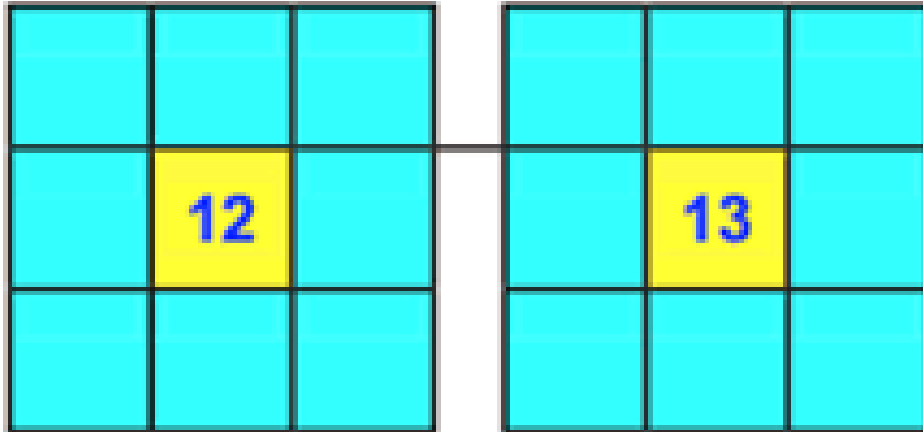


Challenge 1

Use trial and improvement to work out the correct answer on your whiteboard.

Then draw a 3x3 grid in your book to record the correct answer.



Can you put the numbers 1 to 8 in each of the squares so that each side adds up to the middle number?

















Find the answer on the next page



Challenge 2

Work out the value of each of the shapes.

Show your workings out in your book then record your answer clearly.

				16
				14
				16
				20
17	15	17	17	

$$\text{circle} =$$

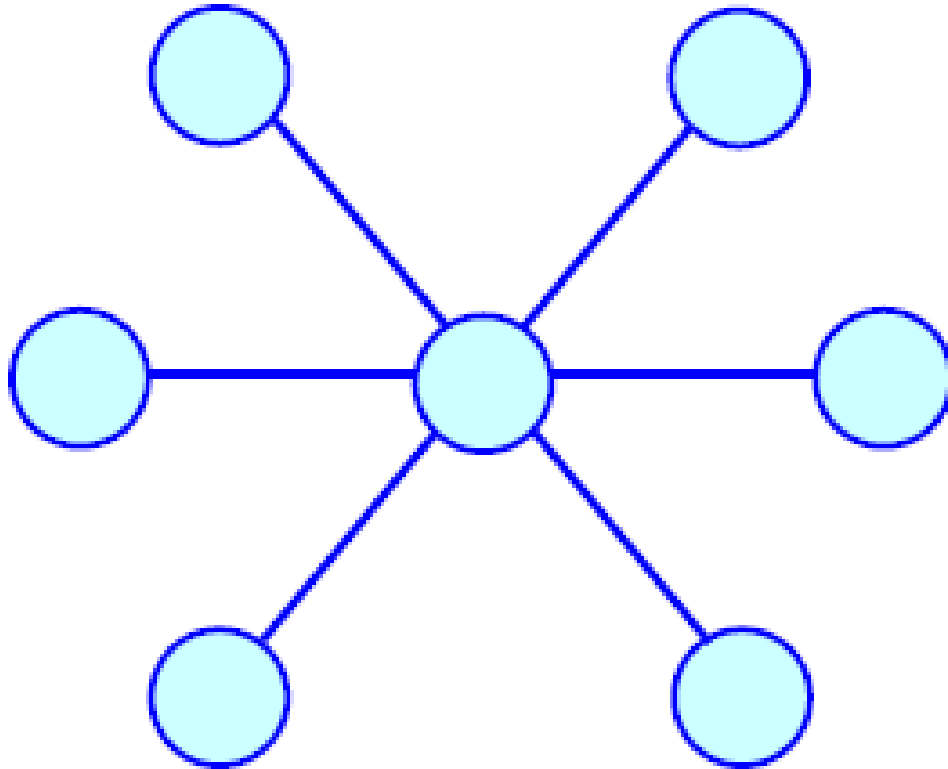
$$\text{star} =$$

$$\text{triangle} =$$

Challenge 3

Use trial and improvement to work out the correct answer on your whiteboard.

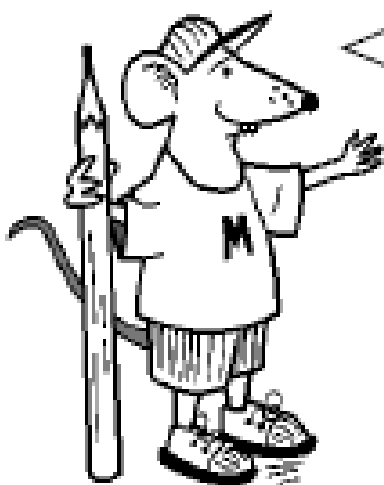
Then stick the diagram in the book and fill it in.



Put the numbers

1, 2, 3, 4, 5, 6 and 7

in the circles so that each straight line of three numbers adds up to the same total.



Challenge 4

Calling all detectives! You will need to think creatively, use your reasoning skills and your problem solving strategies to find the mystery number from the list below.

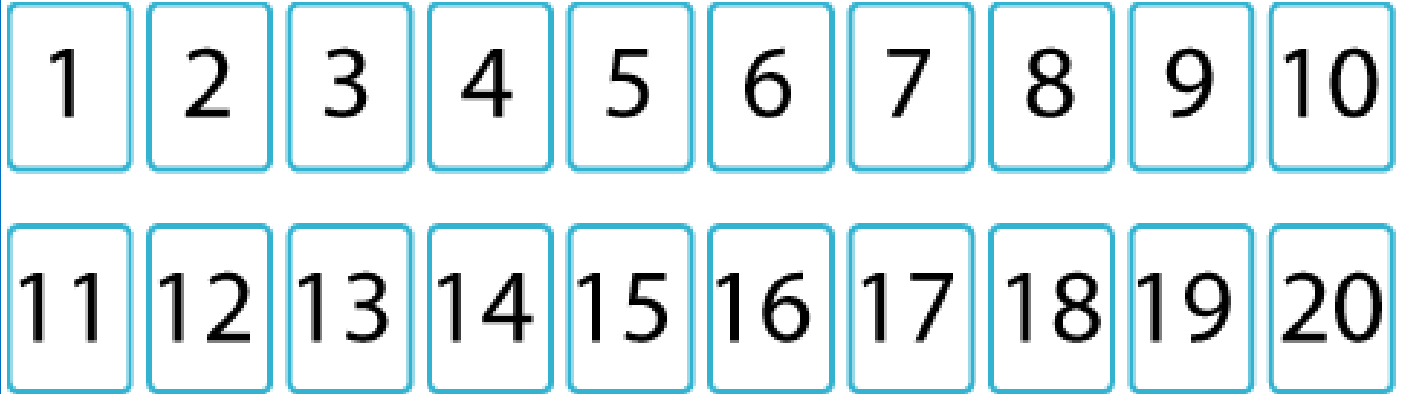


- The number has two digits.
- Both of the digits are even.
- The digit in the tens place is greater than the digit in the ones place.
- The ones digit is not in the three times table.
- The tens digit is not double the ones digit.
- The sum of the two digits is a multiple of five.

18	86
120	42
46	64
80	8
22	83

Challenge 5

Katie had a pack of twenty cards numbered from 1 to 20



She arranged the cards into six piles.

She used all the cards.

The numbers on the cards in each pile added to the same total.

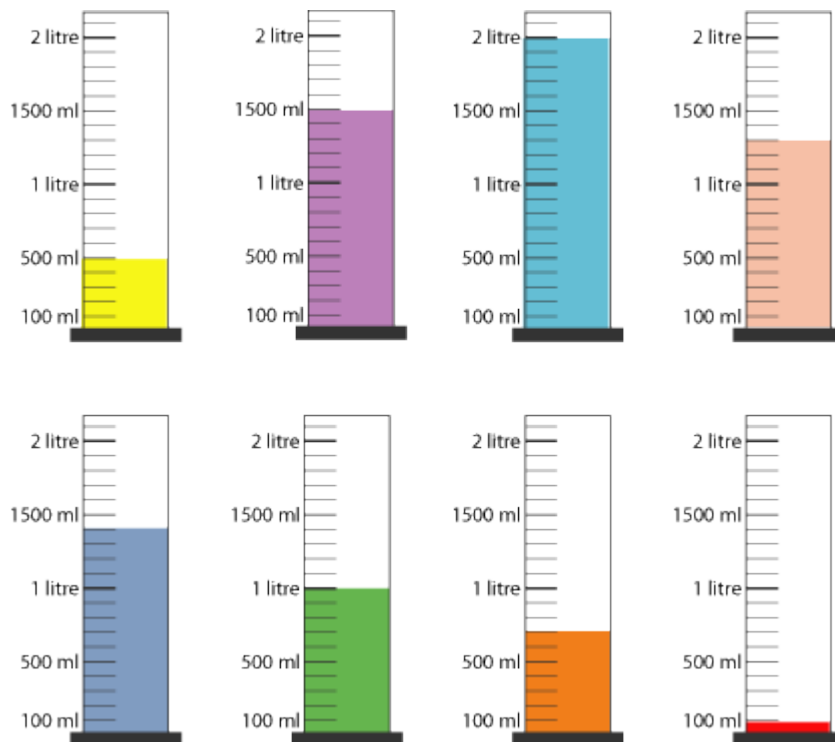
What was the total and how could this be done?

Challenge 6

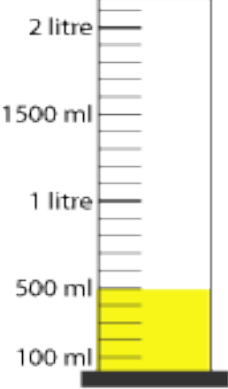
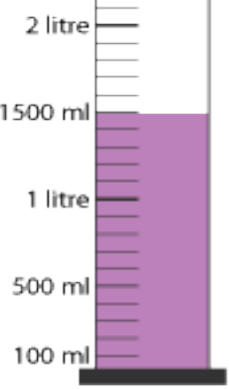
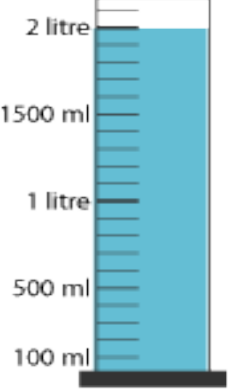
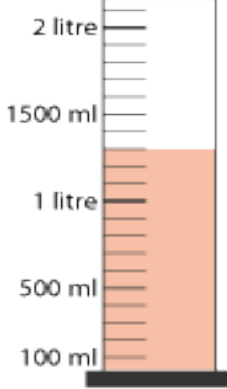
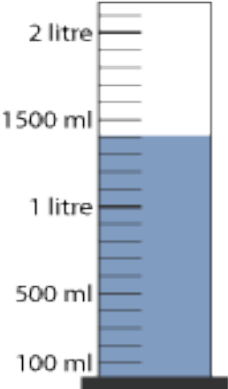
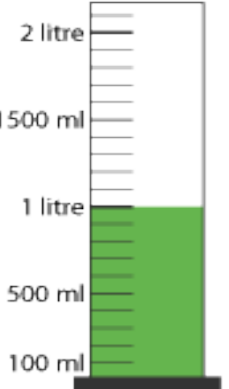
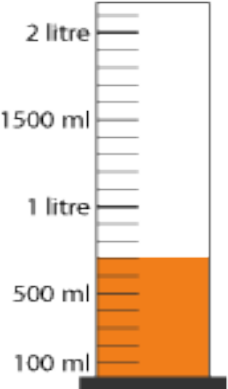
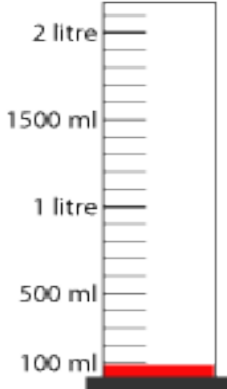
A group of eight children in Class 6 were measuring water using measuring cylinders. They coloured the water to make reading the scales easier.

They lined up the cylinders in two neat rows, each labelled with a child's name and the amount they had measured out.

Then Harry opened the window and the wind blew most of the labels onto the floor! "Oh! Harry!" they all wailed. Can you re-label the cylinders for them?



i.	Ahmed had measured out just a thousand millilitres and Belinda twice as much as Ahmed.
ii.	Grace had measured out three-quarters of the amount that Belinda had done and Freddie had half the amount that Ahmed had measured out. Which were their cylinders?
iii.	Callum had coloured his water blue. How much did he measure out?
iv.	Ellie had coloured her water pink and Dan coloured his orange. How much did they measure out?
v.	"Don't drink that!" Harry had laughed, pointing at Dan's cylinder, "It's not orange juice!" As his hand stretched out he knocked over his red liquid. "Oh! Harry!" they all wailed again. How much was left in Harry's cylinder after the accident?

Child's Name	Child's Name	Child's Name	Child's Name
			
			
Child's Name	Child's Name	Child's Name	Child's Name

Questions		Answer in litres	Answer in millilitres
iii	Callum measured out		
iv	Ellie measured out		
	Dan measured out		
v	The amount left in Harry's cylinder		

Challenge 7

Dan bought a packet of crisps and an ice cream.

The cost of both of them together is in one of the boxes below.

£1.85	75p	£1.74	£2.25	£1	£1.56
£2.10	80p	£1.80	£3.06	£1.44	£1.50
£1.60	£1.25	£1.20	90p	£1.45	£1.27

Use these clues to find out how much he paid:

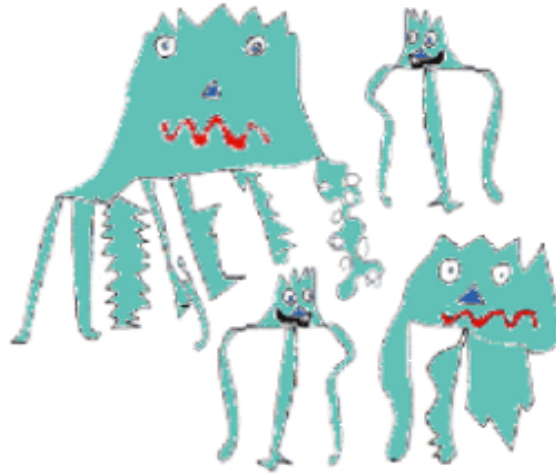
1. You need more than three coins to make this amount.
2. There would be change when using most valuable coin to buy them.
3. The crisps cost more than 50p.
4. You could pay without using any copper coins.
5. The ice cream costs exactly twice as much as the crisps.

Bonus Challenge

Zios and Zepts

On the planet Vuv there are two sorts of creatures.

The Zios have 3 legs and the Zepts have 7 legs.



The great planetary explorer Nico, who first discovered the planet, saw a crowd of Zios and Zepts. He managed to see that there was more than one of each kind of creature before they saw him. Suddenly they all rolled over onto their backs and put their legs in the air.

He counted 52 legs. How many Zios and how many Zepts were there?

Do you think there are any different answers?