True or false statements

1. I found maths hard at school so that's why my child does
2. My child has a good understanding of maths because they can use column addition
3. My child can add four digit numbers so should be working on the year above objectives
4. Addition is easier than subtraction
5. Once you leave school you don't use maths

What is a number?

Year 1 number

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
- Given a number, identify one more and one less
- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- Read and write numbers from 1 to 20 in numerals and words

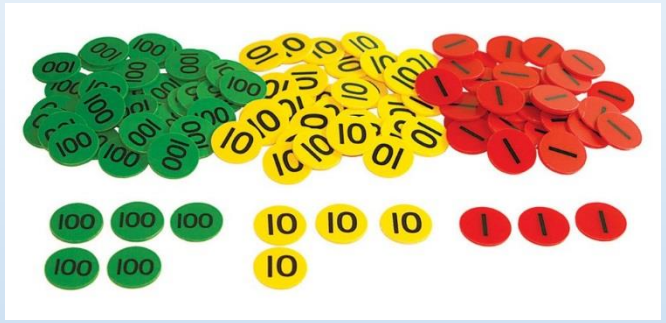
Year 2 number

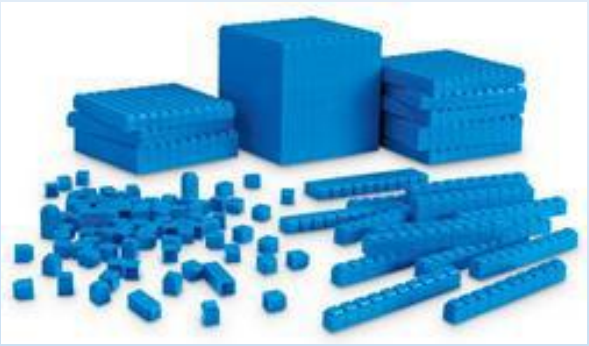
- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward
- Recognise the place value of each digit in a two-digit number (tens, ones)
- Identify, represent and estimate numbers using different representations, including the number line
- Compare and order numbers from 0 up to 100; use <, > and = signs
- Read and write numbers to at least 100 in numerals and in words
- Use place value and number facts to solve problems

Year 3 number

- Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
- Compare and order numbers up to 1000
- Identify, represent and estimate numbers using different representations
- Read and write numbers up to 1000 in numerals and in words
- Solve number problems and practical problems involving these ideas

Concrete resources - helps conceptual understanding by manipulating the resource to physically count out and number or problem



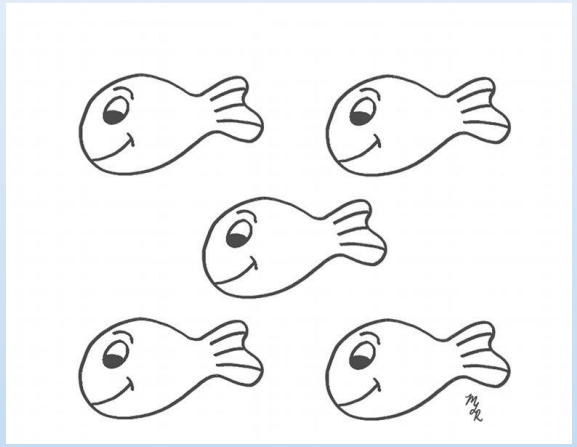


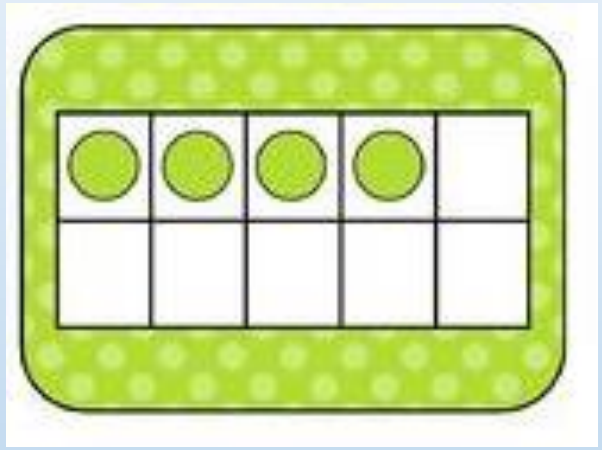
How many ways can you make 7?
How many ways can you make 17?

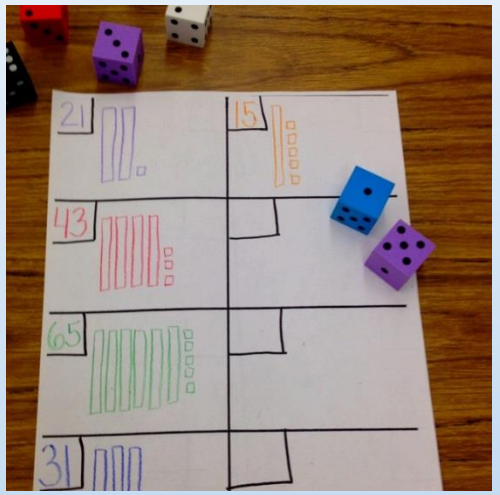
Pictorial - drawing or using pictures to show a number or solve a problem by representing it themselves

How many ways can you draw 7?
How many ways can you draw 17?

Numbers shown as pictures







Abstract - to enhance understanding representational is developed to only using numbers or symbols are used

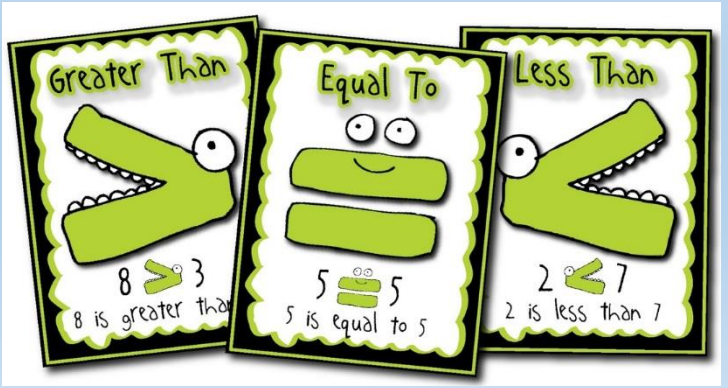
Year 1 - numbers up to 100

Year 2 – numbers up to 100

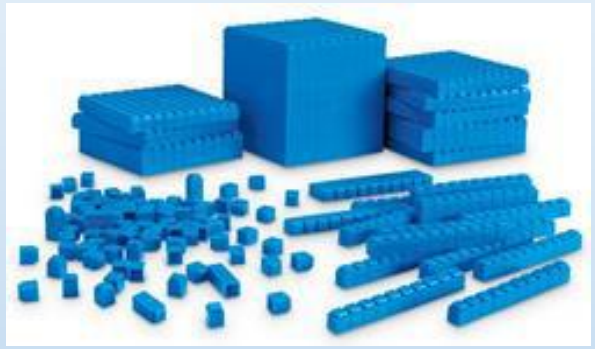
Year 3 – numbers up to 1000

Having a secure understanding of number enables children to;

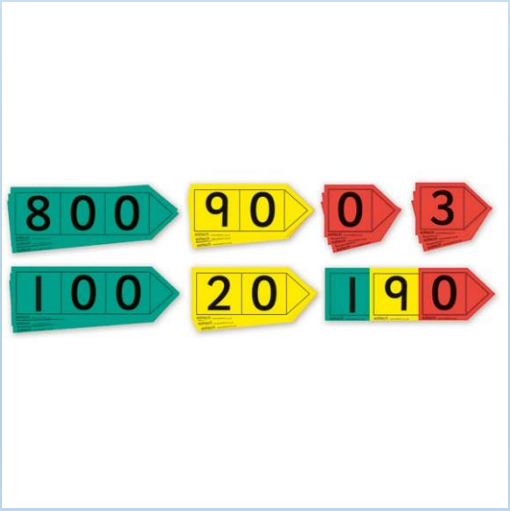
- To find one more/ one less, ten more/ ten less and hundred more/hundred less
- Writing the numbers in words
- Ordering
- Comparing < and >

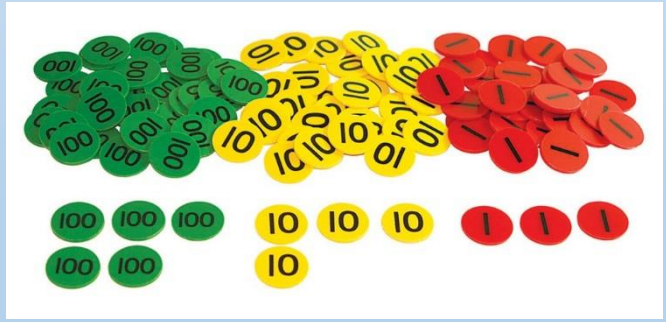


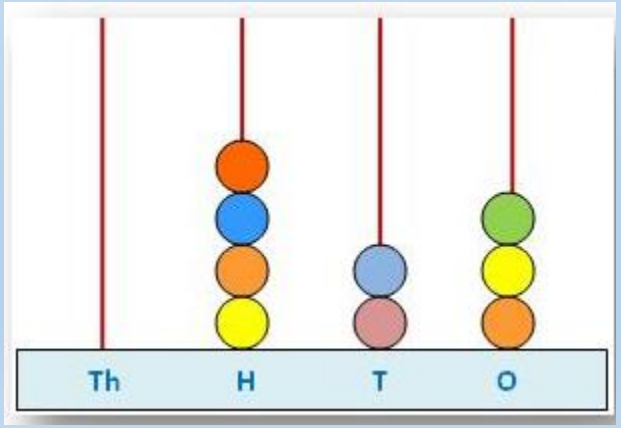
Place value (Concrete and pictorial)



Hundreds	Tens	Ones







Abstract

Children must have a secure understanding of place value.

0 as a place holder.

No longer called units now called ones.

Two digit numbers

23

What is the 2 worth? What is the 3 worth?

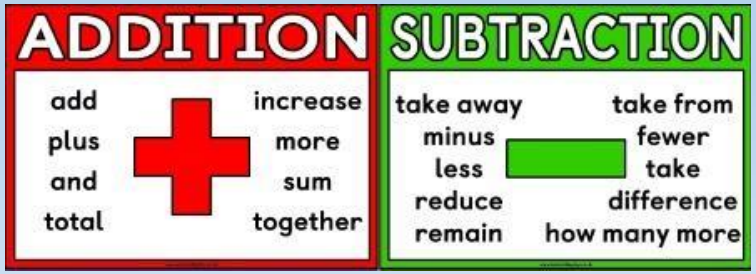
Three digit numbers

176

What is the 1 worth? What is the 7 worth
What is the 6 worth?

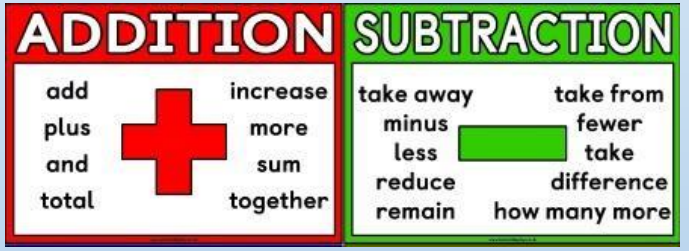
Year 1 Addition and Subtraction

- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract one-digit and two-digit numbers to 20, including zero
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9



Year 2 Addition and Subtraction

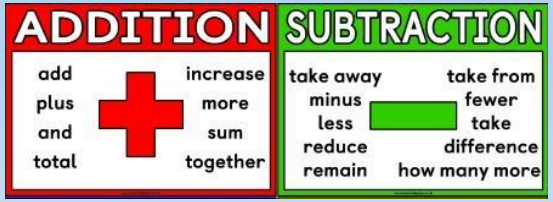
- Solve problems with addition and subtraction:
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
  - applying their increasing knowledge of mental and written methods
- Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
  - two-digit number and ones
  - two-digit number and tens
  - two two-digit numbers
  - adding three one-digit numbers



- Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems

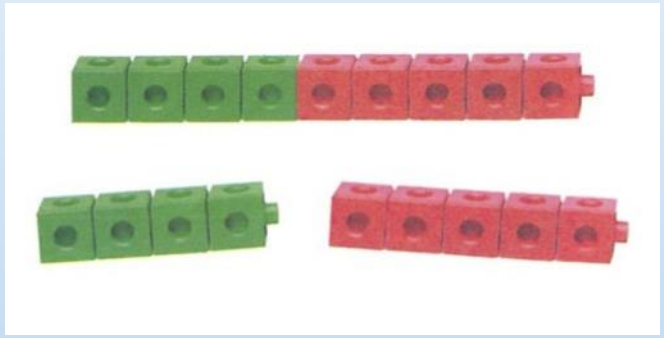
Year 3 Addition and Subtraction

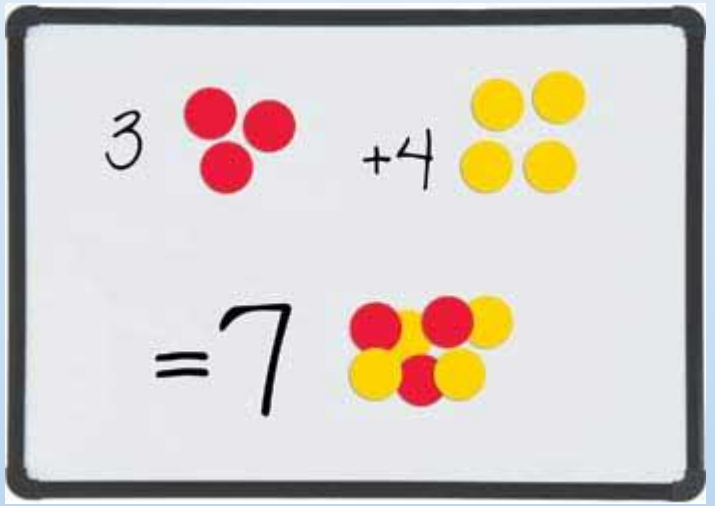
- Add and subtract numbers mentally, including:
  - three-digit number and ones
  - three-digit number and tens
  - three-digit number and hundreds
- Add and subtract numbers with up to three digits, using formal written methods of column addition and subtraction
- Estimate the answer to a calculation and use inverse operations to check answers
- Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

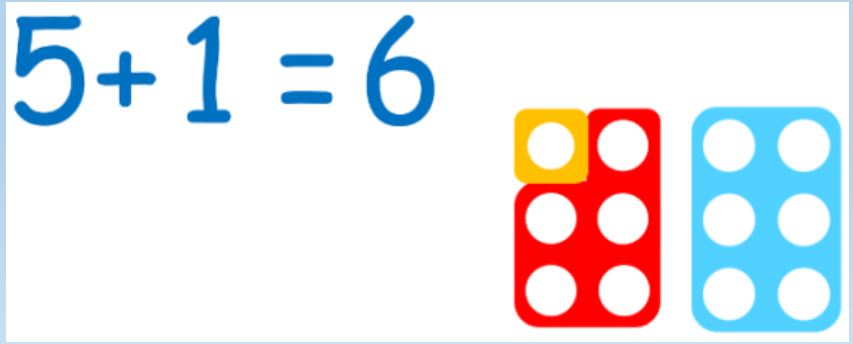


Addition and Subtraction

using concrete to support (abstract to show link)





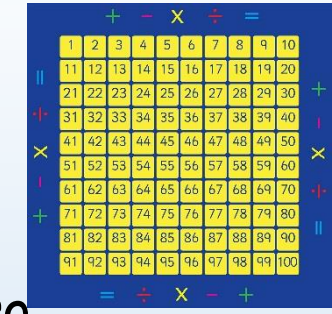


Addition and Subtraction

using pictorial examples to support (abstract to show link)

- Six eggs + four eggs
- Squares
- Crosses

Abstract

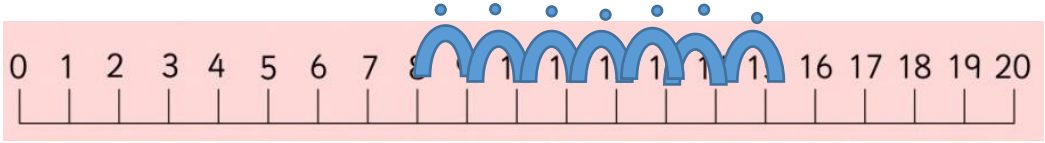


Year 1 - Add and subtract one-digit and two-digit numbers to 20, including zero

Addition

Write the calculation 7 + 8 =

Using a number line. Identify the biggest number, count on in ones using frog jumps to show your addition.



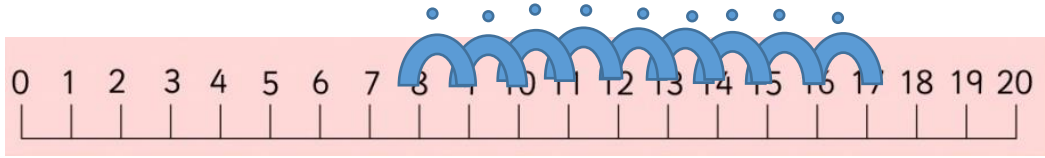
Check you have counted on the correct amount by writing numbers/ dots above

Write your answer 7 + 8 = 15

Subtraction

Write the calculation 17 – 9 =

Using a number line, find the biggest number, count back in ones using frog jumps to show your subtraction



Check you have counted back the correct amount by writing numbers/ dots above

Write your answer 17- 9 = 8

Abstract

- Year 2 – use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (two digit and two digit)

Addition

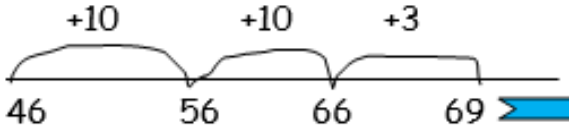
Write the calculation: e.g. 46 + 23 =

Partition the smallest number: 23 = 20 + 3

Draw a number line with a ruler! Put the biggest number on the number line first:

46

Add on the tens, then add on the ones of the smaller partitioned number



The number you reach is your answer! 46 + 23 = 69

Check your answer with the inverse operation, so 69 – 46 = 23

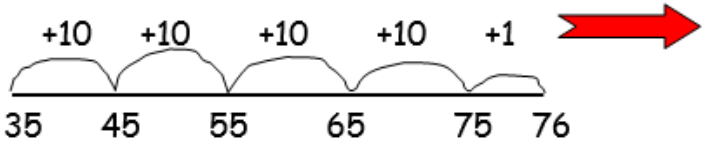
Subtraction

Write the calculation: e.g. 76 - 35 = (Remember big number first!)

Draw a number line with a ruler! Put the smallest number on the number line first, then put the bigger number at the other end:

35 76

Make sensible jumps, starting with tens, then ones, until you reach the bigger number, to find the difference



Add up these jumps. This is your answer.
76 – 35 = 41

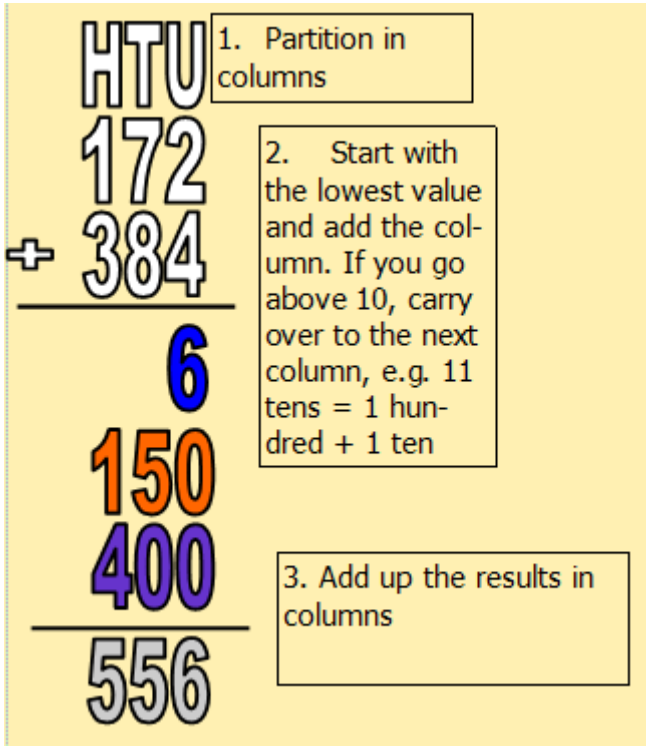
Check your answer with the inverse operation, so: 35 + 41 = 76

** Year 2 cannot use resources in the SATS, they must be able to use a blank number line**

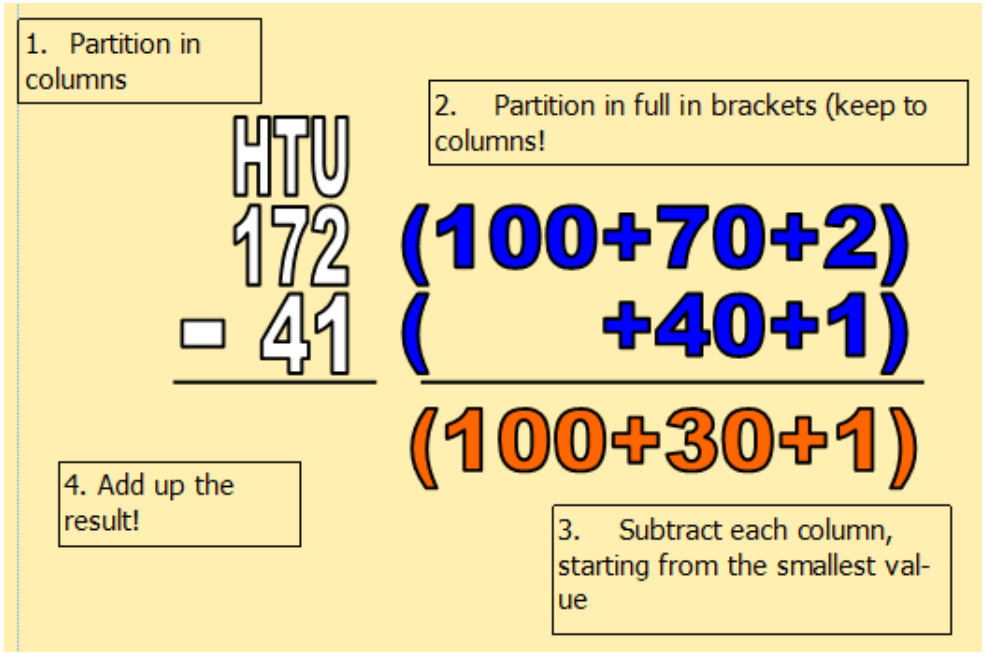
Abstract

Year 3 - Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction (three digits and three digits)

Addition



Subtraction



Problem solving method

Children to become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

Children to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

Children can solve problems by applying their mathematics to a variety of routine and non- routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Broader and deeper

8 A game costs £25

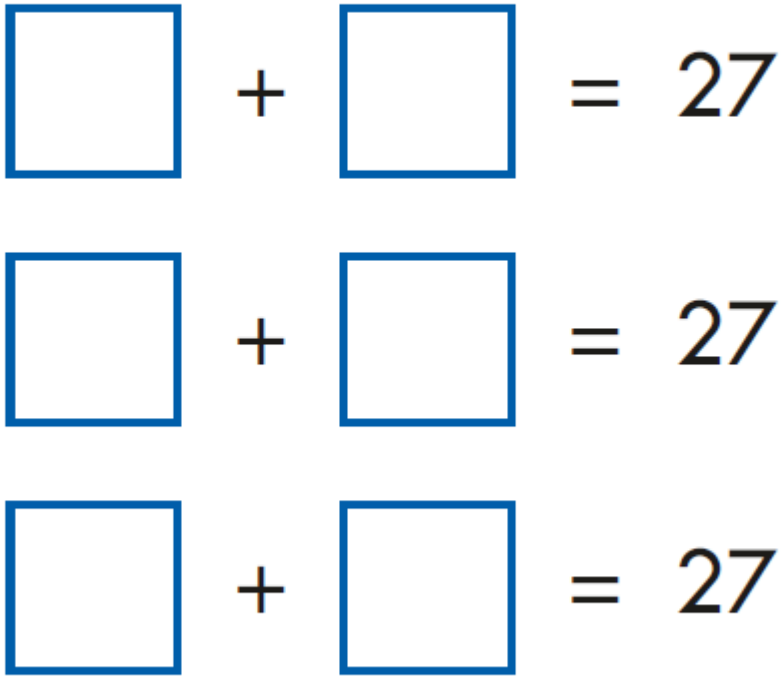
Ben has £19

How much **more** money does Ben need to buy the game?

£

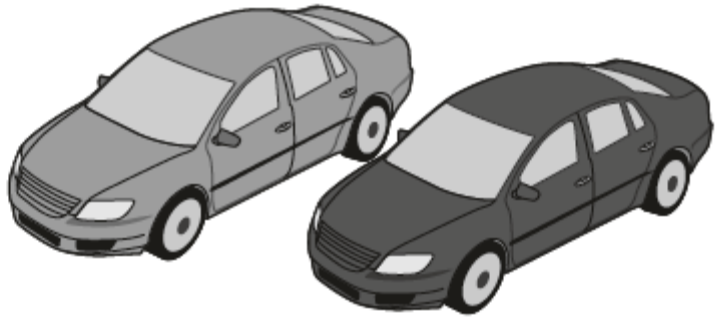
Broader and deeper

18 Write six **different** numbers to make these sums correct.



Broader and deeper

19 Ben and Sita count cars.



Ben counts **38** red cars.

Sita counts **23** blue cars.

How many cars do they count **altogether**?

cars

Broader and deeper

23 Write the missing number to make this number sentence correct.

$$9 + 7 - \square = 12$$

Broader and deeper

- Always sometimes never