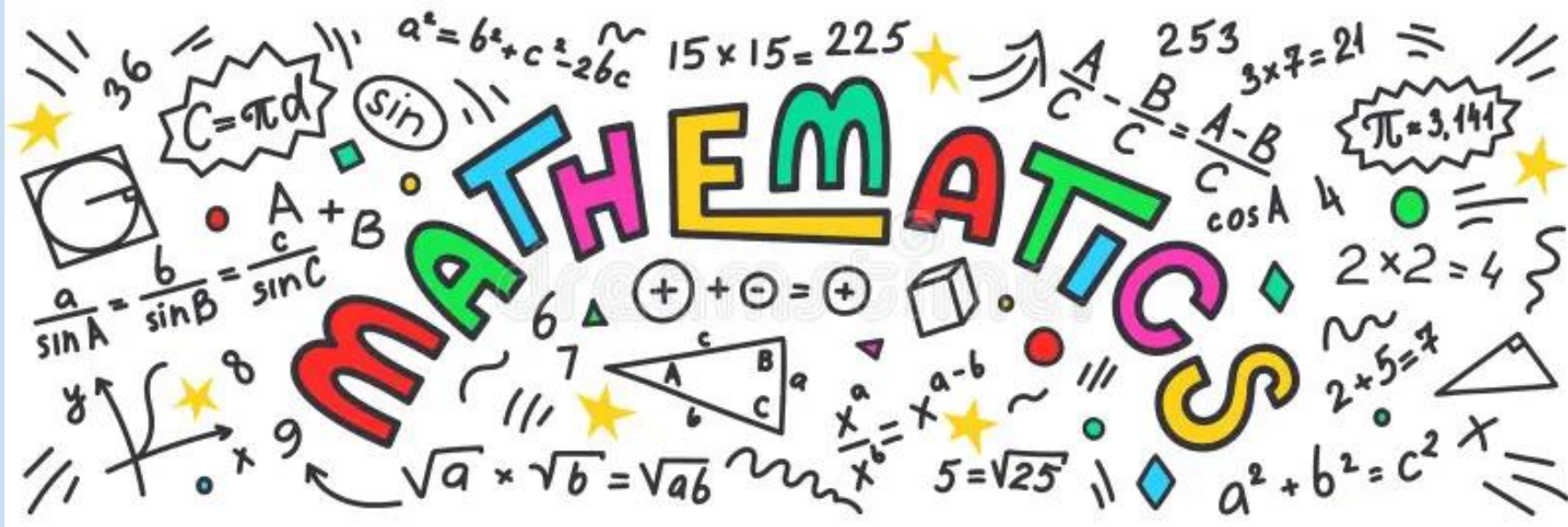


# Parent Workshop



While you are waiting, have a go at the **24 Game**

Use all four digits once each to make 24.

You can use +, -, x and ÷

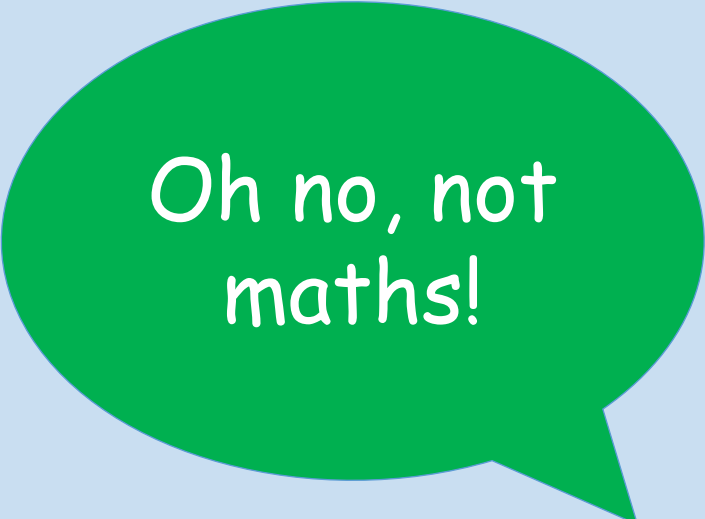
Can you do it in more than one way?

2 5 6 8

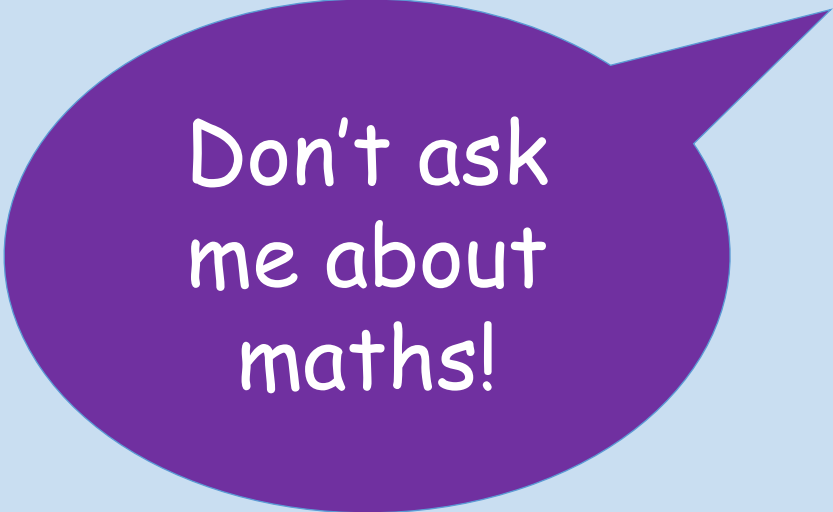
# Aims for this session:

- To explore some of the things your children learn in maths
- To consider why fluency in number is so important
- To look at some of the strategies we use in school
- To think about ways you can support your children at home
- To enjoy some maths
- To ask any questions.

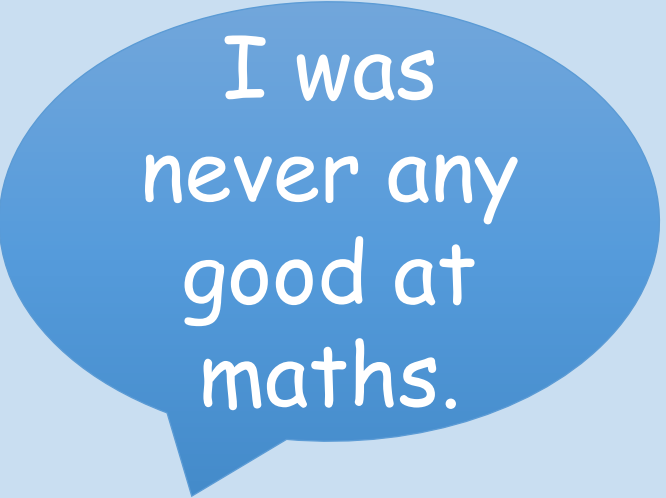
Research suggests that many adults are happy to say things like...



Oh no, not maths!



Don't ask me about maths!



I was never any good at maths.

Research also suggests that adults would not openly admit to being poor at reading.

Please, please, please be enthusiastic about maths with your children.



# Maths Lessons at Caversham Primary

EYFS (Reception)

Whole Class Session,  
Adult-guided independent task  
Continuous provision

Key Stage 1: Years 1 & 2

Main Lesson  
Fluency Session

Key Stage 2: Years 3 - 6

Interventions

Maths is not always about one right answer and the one way of working it out.

We want to equip the children with the knowledge, understanding, confidence and enthusiasm to be efficient mathematicians.

Talking  
Reasoning  
Investigating  
Explaining  
Justifying  
Proving

Which is the odd one out **and why?**

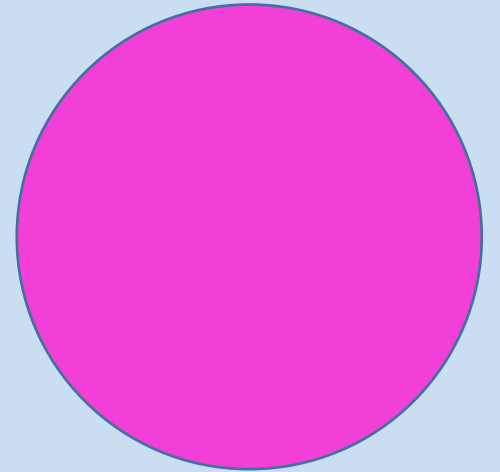
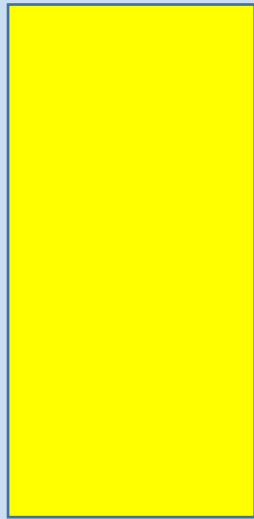
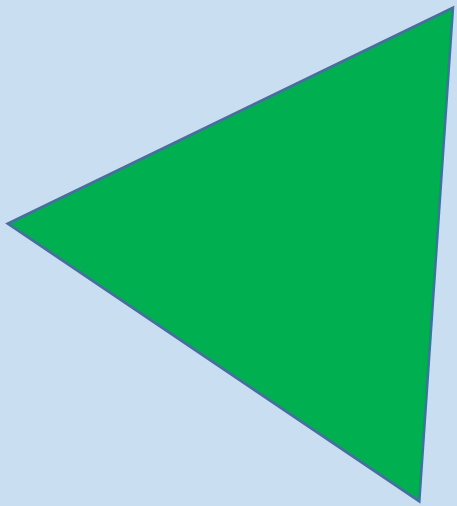
3

8

13

15

Which is the odd one out **and why?**



# EYFS

Developing a **strong grounding in number** is essential so that all children develop the necessary building blocks to excel mathematically.

Children should be able to **count confidently**, develop a **deep understanding of the numbers to 10**, the relationships between them and the patterns within those numbers.

By providing frequent and varied opportunities to build and apply this understanding - such as **using manipulatives**, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built.

In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including **shape, space and measures**.

**It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and should not be afraid to make mistakes.**

# Early Learning Goals

## Number

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

# Early Learning Goals

## Numerical Patterns

Children at the expected level of development will:

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

# Number Sense

## Subitising:

Instantly knowing the number of items in small group without counting

## Counting:

Knowing the number names in order, forwards and backwards. Understanding how to count objects, events or actions in ones and also in twos, fives and tens.

## Composition:

Understanding how each number can be made up in different ways by adding and subtracting

Knowing how our number system uses groups of tens and ones

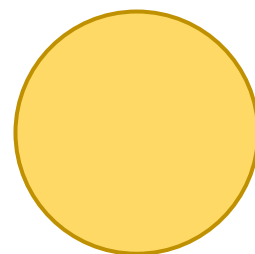
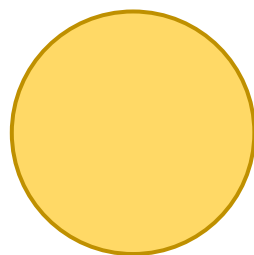
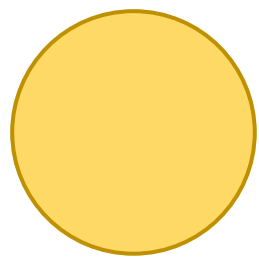
## Comparing:

Having a feel for the relative sizes of numbers

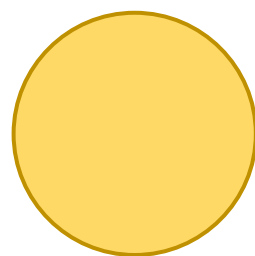
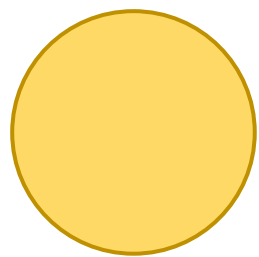
Putting numbers in order

Estimating

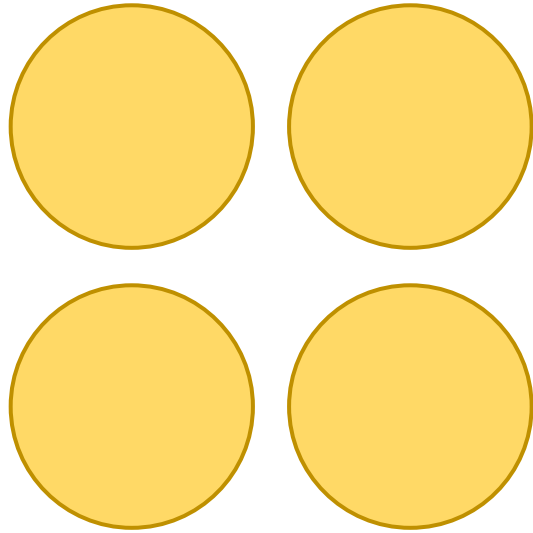
Let's have a go at subitising...



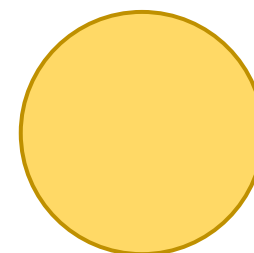
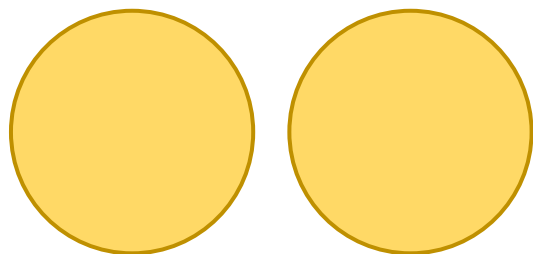
show dots



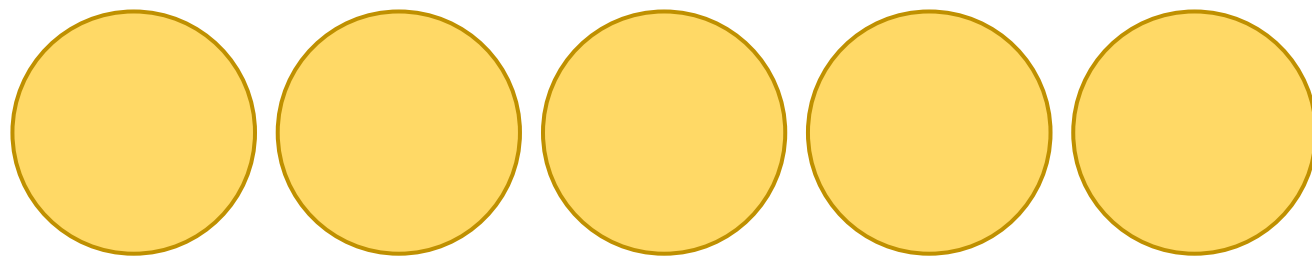
show dots



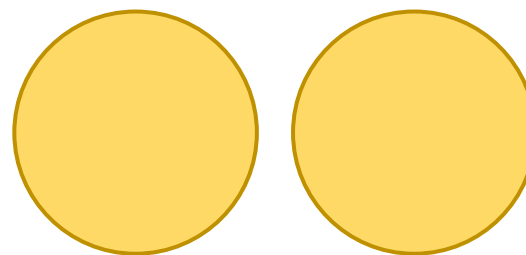
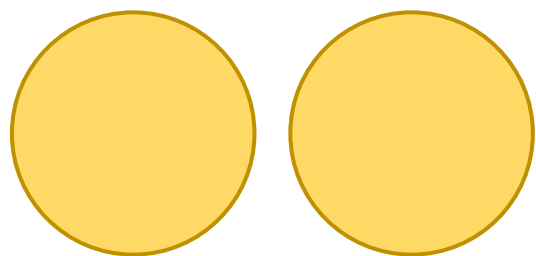
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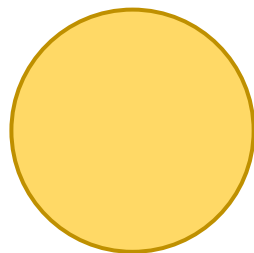
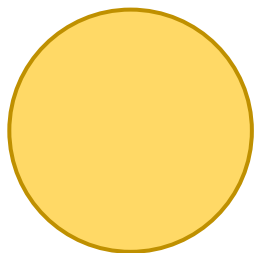
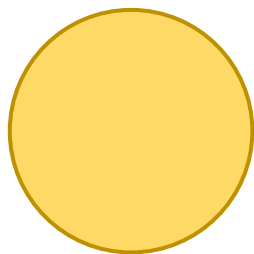
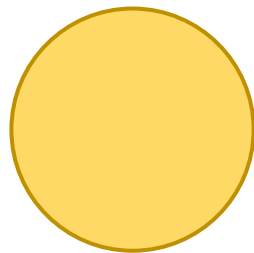
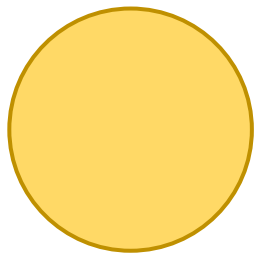
show dots



show dots



show dots



show dots

# Ten Frames









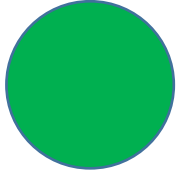






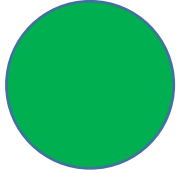







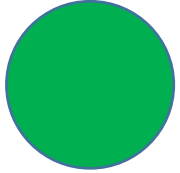







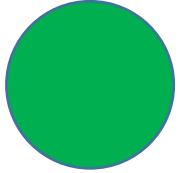







How many?

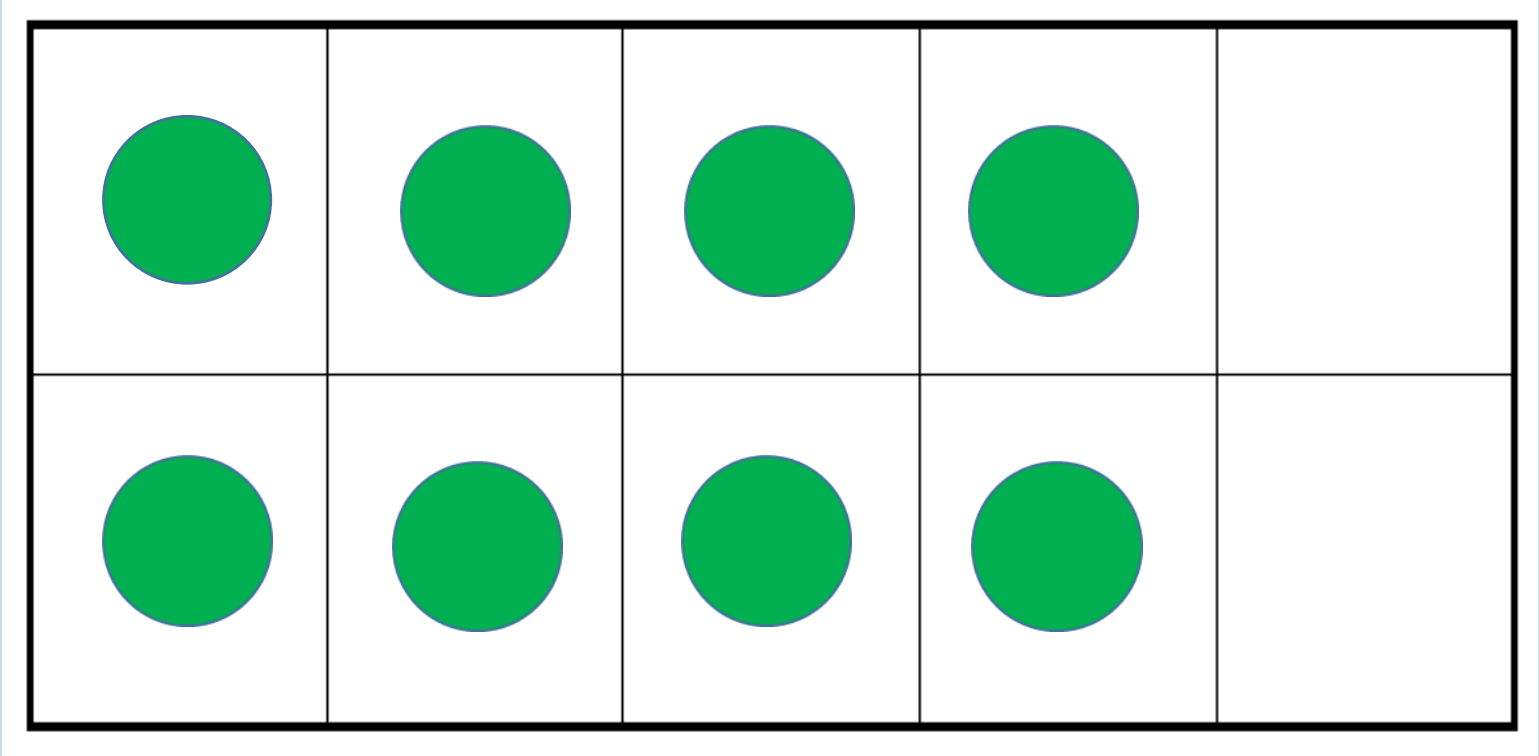
				



What can you do to help your child to develop secure number sense at home?

# Practise subitising at home

Opportunities all around you.



Play games involving dice



1 minute maths app  
from White Rose



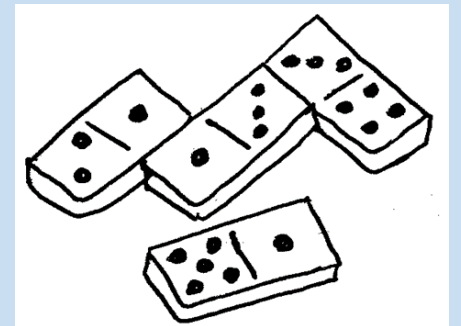
# Practise counting

- Forwards
- Backwards including to zero
- Start from any number
- Don't always stop in the same place
- Match the counting to objects and actions
- Make it real
- Count anything and everything!



Talk about maths in real life contexts:

- Look at house numbers, bus numbers, road signs, number plates. What numbers can you see? What's the number before/after?
- Cut food in half/into shapes/share it out.
- Play games using dice/money/dominoes
- Sing songs about numbers
- Talk about the shapes around you – road signs are very useful!



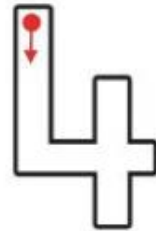
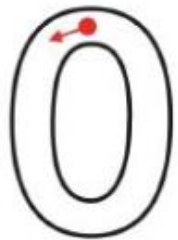
Use the language of comparing and ordering whenever you can.

- Which one is heavier?
- Who came first?
- Who has more?
- Which plate has fewer?
- Which animal is smaller/taller?

# Practise forming the numbers correctly

## Number Formation

Can you trace the numbers?



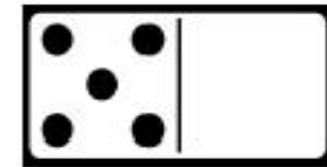
# The story of 5



$3 + 2$   
to take away!

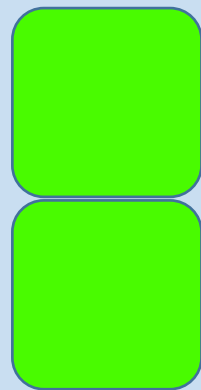
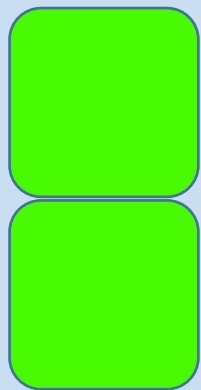


Five little ducks  
went swimming one  
day over the hills and  
far away

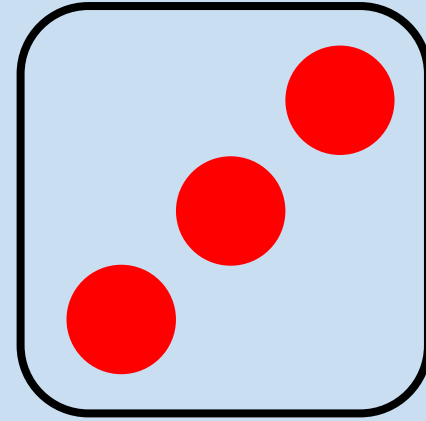
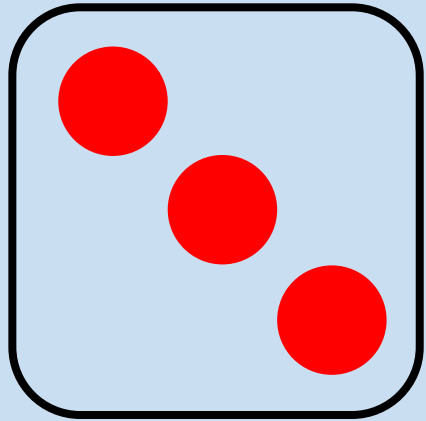




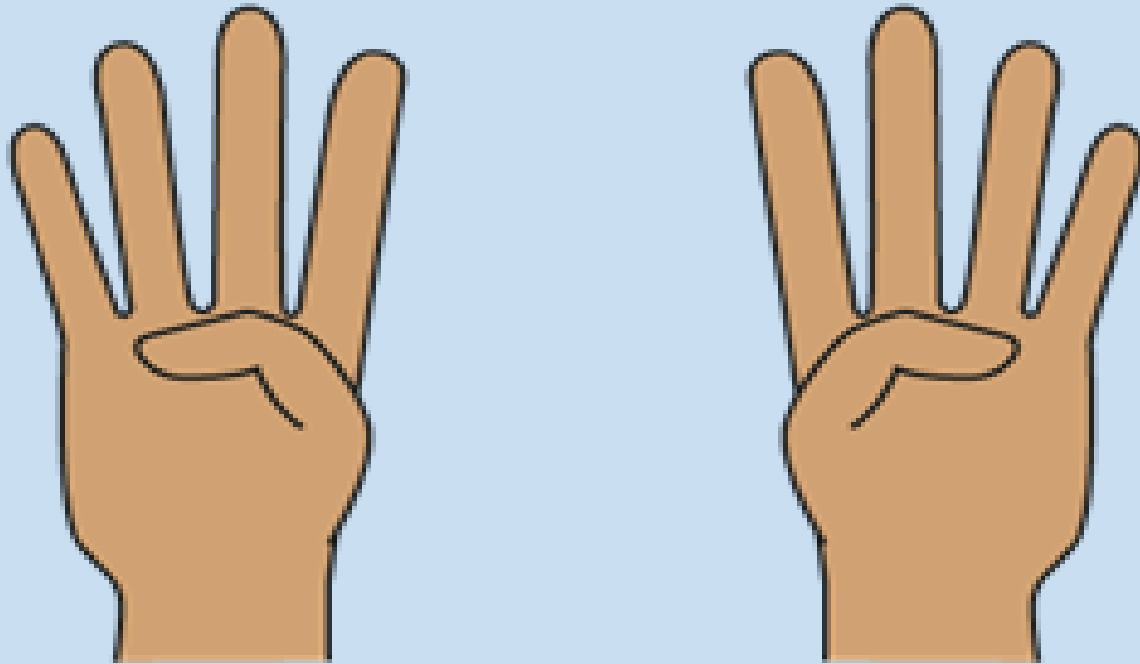
Stem Sentences...



\_\_\_\_\_ is made of \_\_\_\_\_ and \_\_\_\_\_;  
\_\_\_\_\_ and \_\_\_\_\_ make \_\_\_\_\_.



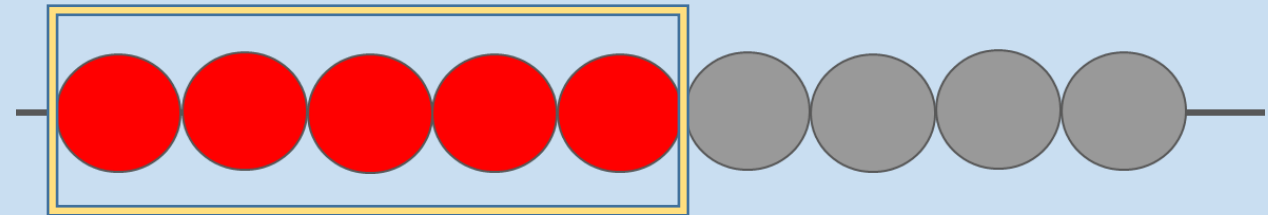
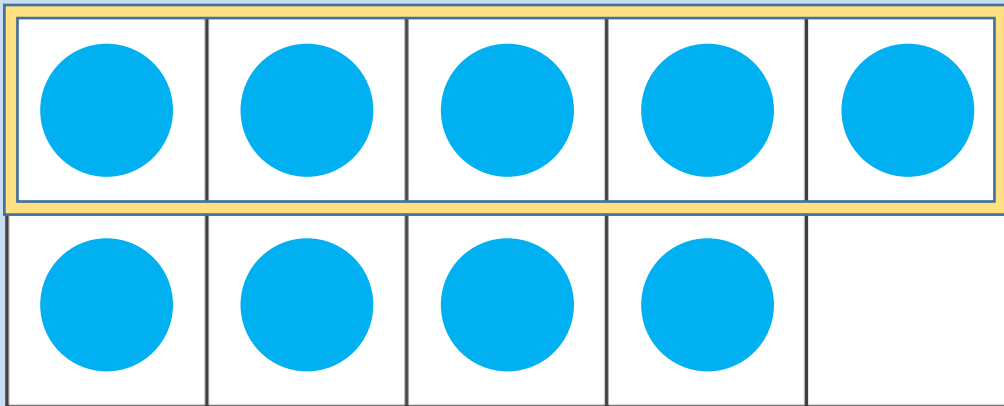
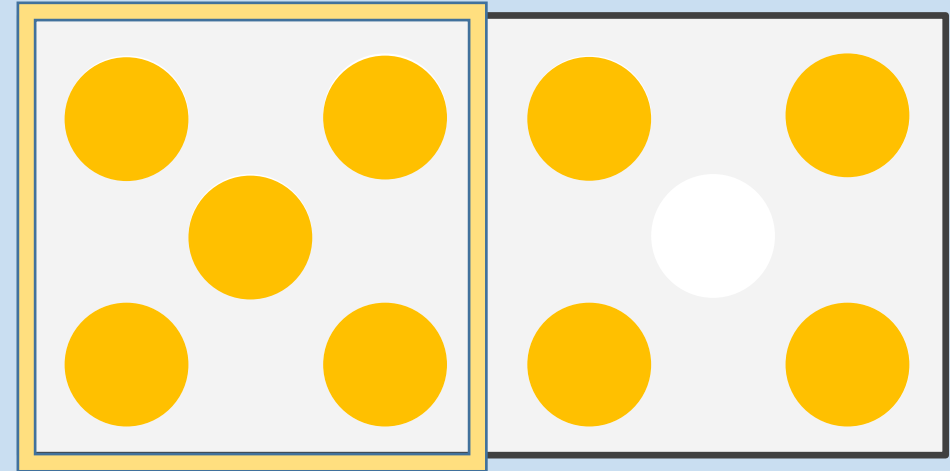
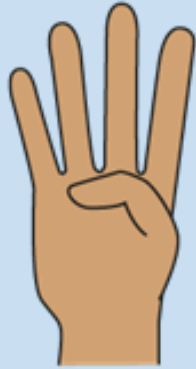
\_\_\_\_\_ is made of \_\_\_\_\_ and \_\_\_\_\_;  
\_\_\_\_\_ and \_\_\_\_\_ make \_\_\_\_\_.



\_\_\_\_\_ is made of \_\_\_\_\_ and \_\_\_\_\_;  
\_\_\_\_\_ and \_\_\_\_\_ make \_\_\_\_\_.

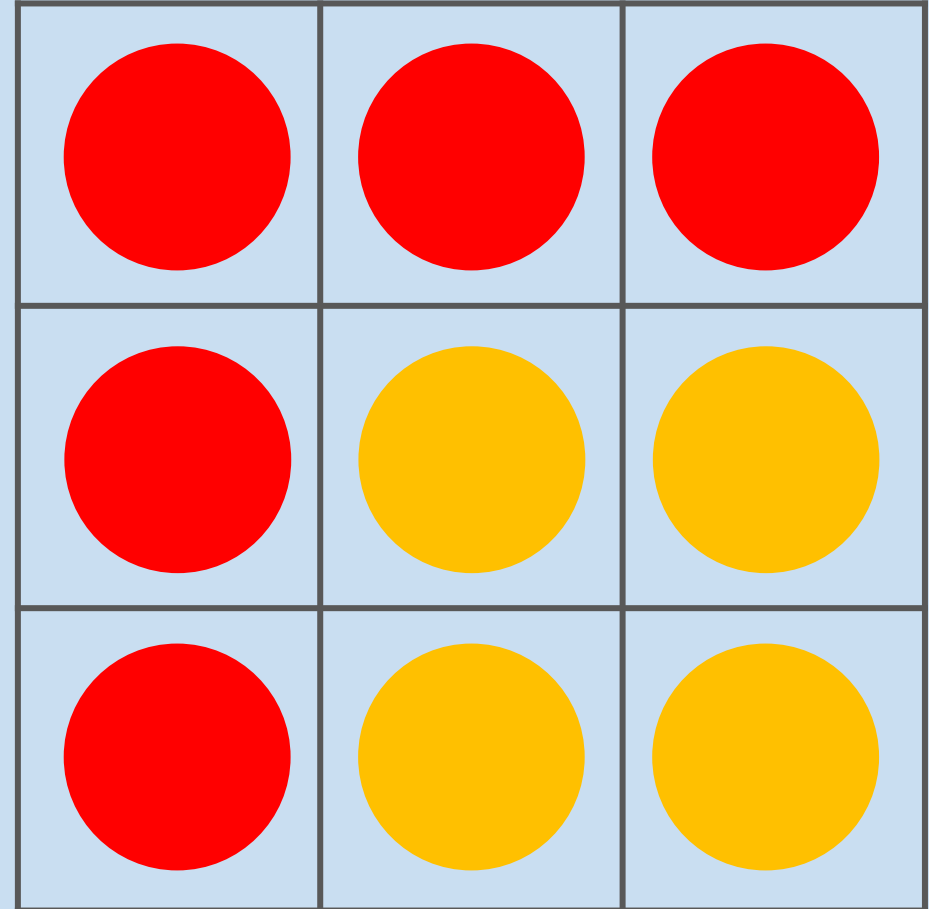
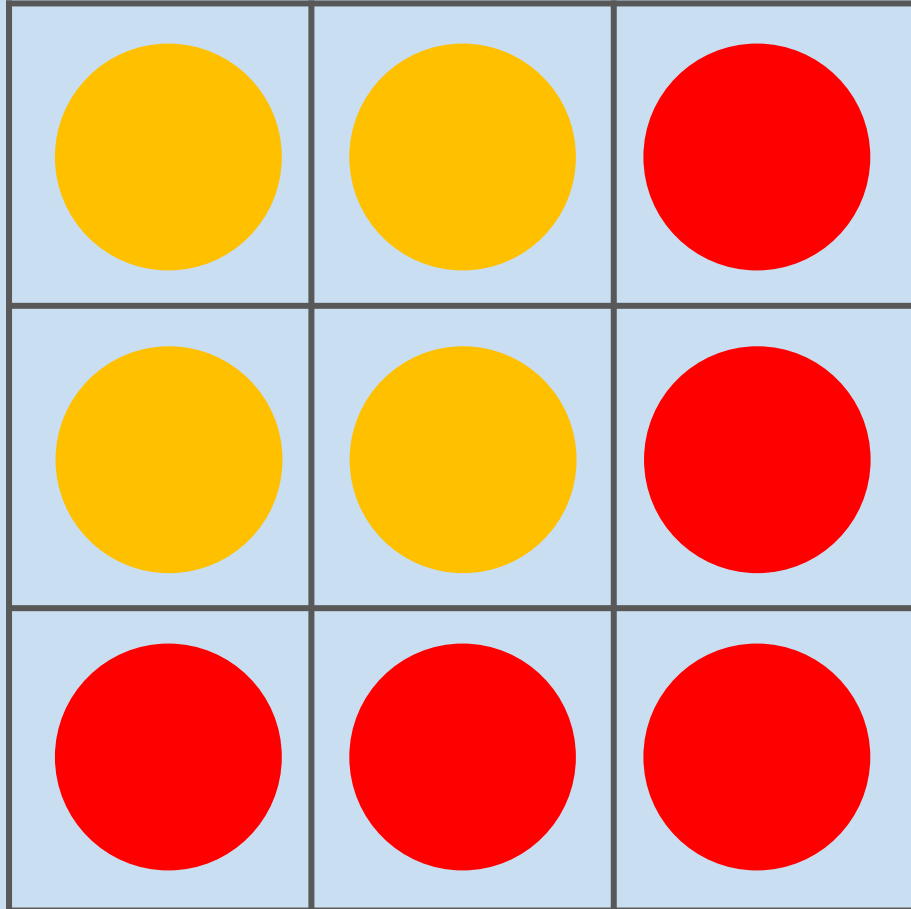
Year 1

Find the 5 in 9



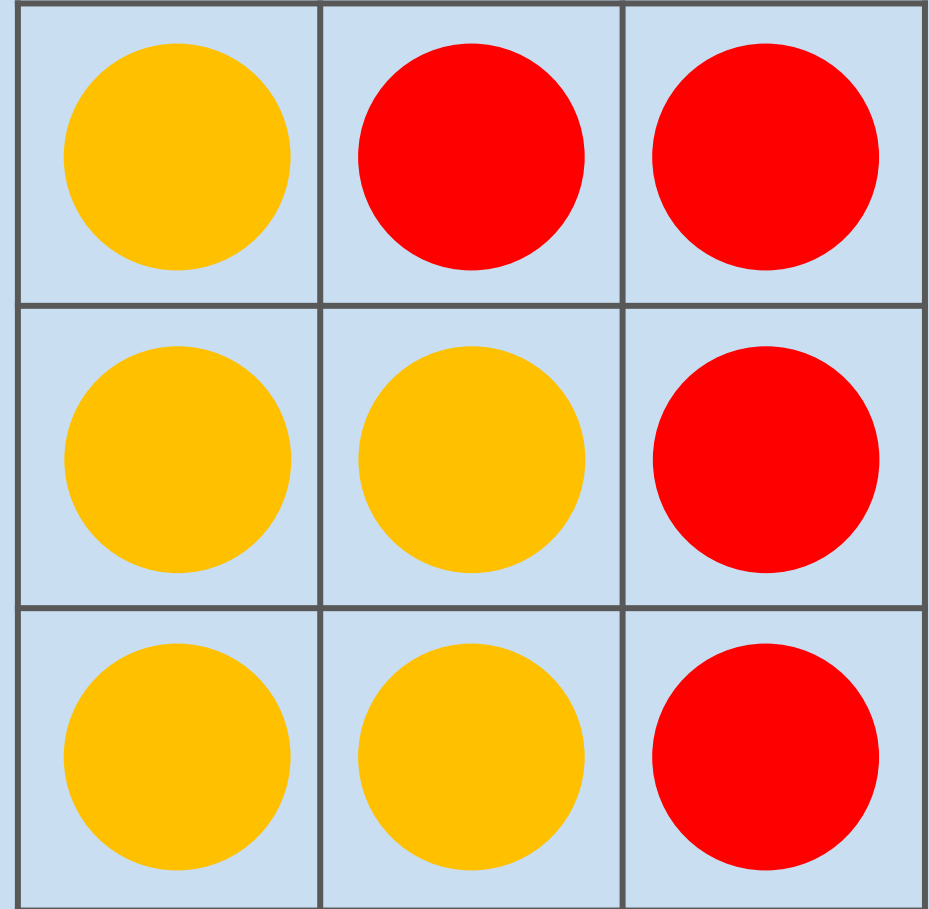
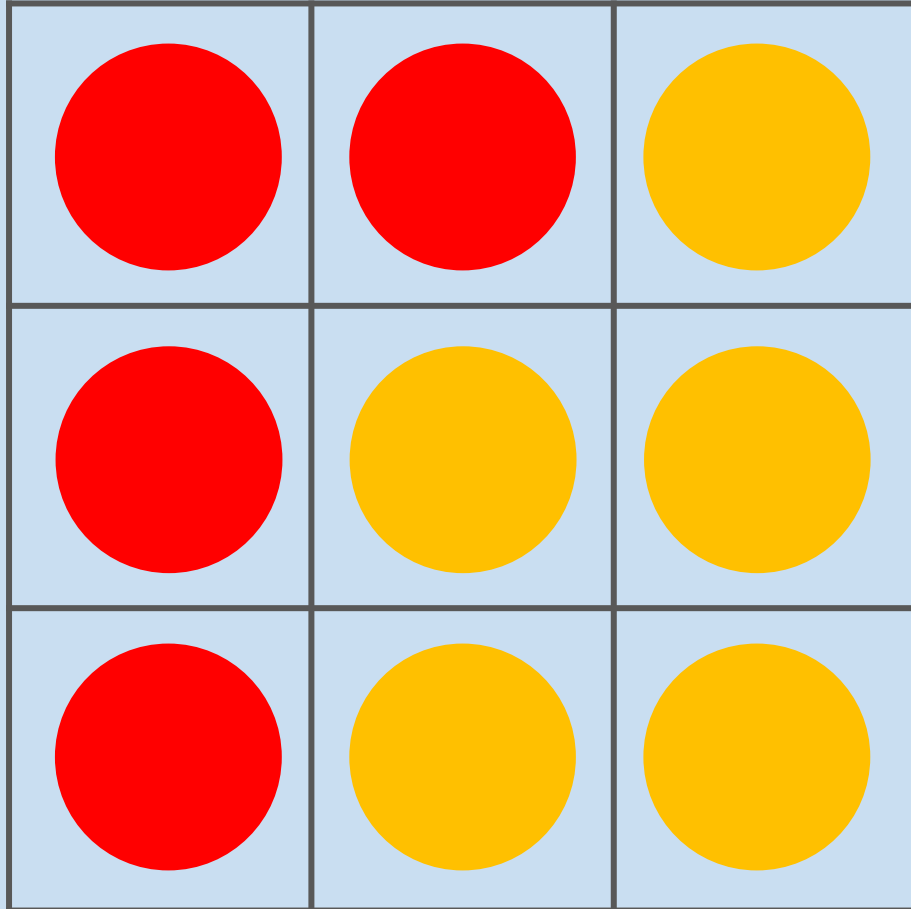
9 is made of 5 and \_\_\_\_;  
5 and \_\_\_\_ make 9.

What's the same? What's different?



9 is made of \_\_\_\_ and \_\_\_\_;  
\_\_\_\_ and \_\_\_\_ make 9.

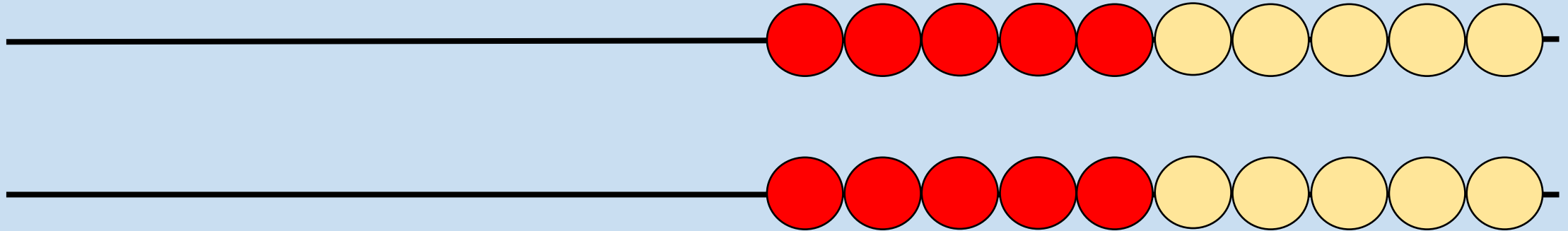
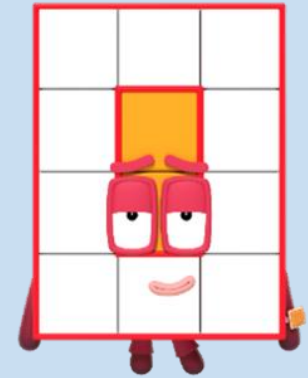
What's the same? What's different?



9 is made of \_\_\_\_ and \_\_\_\_;  
\_\_\_\_ and \_\_\_\_ make 9.

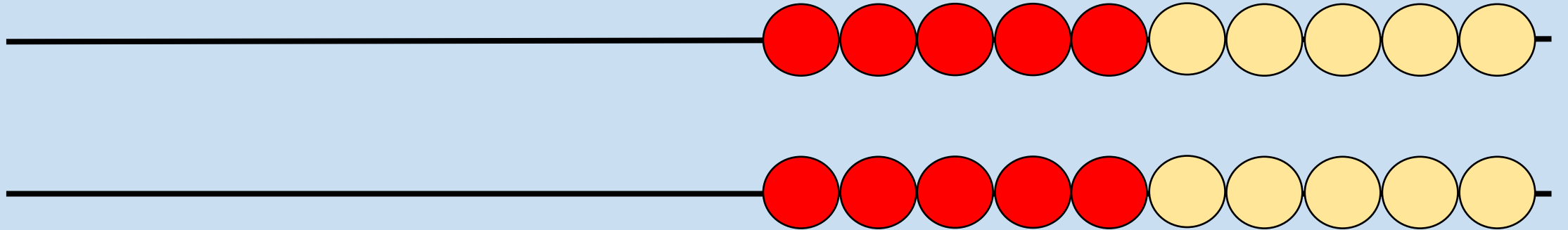
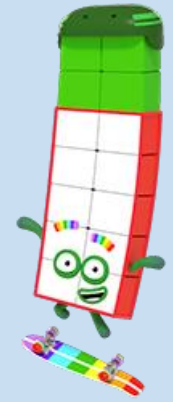
Year 2

12



10 needs \_\_\_\_ to make \_\_\_\_ ;  
\_\_\_\_ is made of 10 and \_\_\_\_ .

14



10 needs \_\_\_\_ to make \_\_\_\_ ;  
\_\_\_\_ is made of 10 and \_\_\_\_ .

# The National Curriculum

- Fluency
- Reasoning
- Problem solving

*automaticity*



When you add two even numbers it makes an odd number.

**Half an even number is a whole number**

**Always, sometimes or never?**

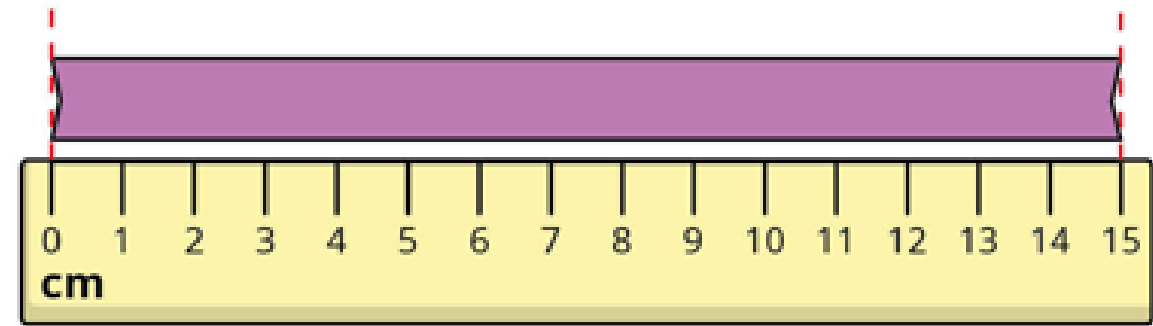
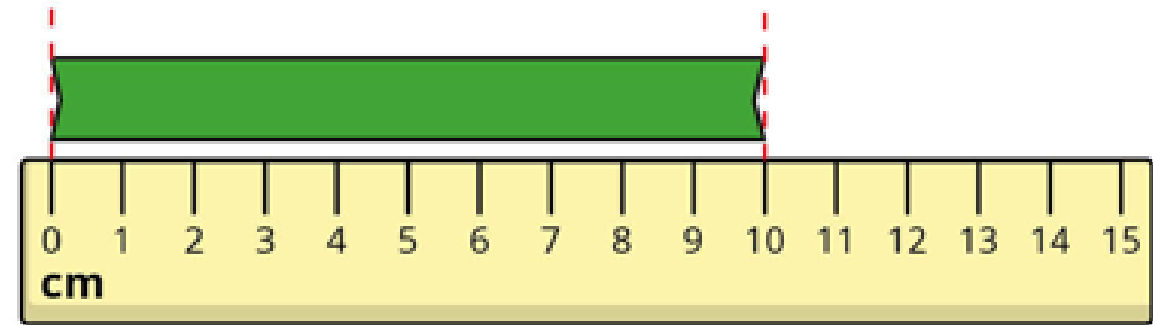
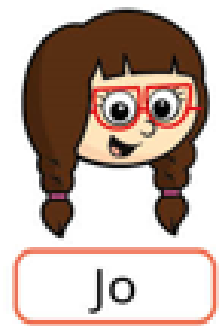
If you add three odd numbers, you will make a prime number.

**Always, sometimes or never?**

An acute angle add an acute angle equals an obtuse angle.

**The square of any prime bigger than 3 is 1 more than a multiple of 24**

Jo, Max and Sam are comparing the lengths of some ribbons.



My ribbon is shorter than Max's, but longer than Jo's.

How long could Sam's ribbon be?

## Different ways

$$10 > \square + 6$$

$$10 > \square + 6$$

$$10 > \square + 6$$

How many different ways are there?

$$100 - 5n > 60$$

$n$  is a whole number

What is the largest number  $n$  can be?

How many possible answers are there?

What if  $n$  didn't have to be a whole number?

- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions, decimals & percentages (& ratio and proportion in Year 6)
- Measurement
- Geometry
- Statistics (from Year 2)
- Algebra (in Year 6)

# Year 1

- Read and write numerals to at least 100 in numerals and in words
- Find one more or less than any number
- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=)
- Recognise, find, name and write simple fractions of a length, shape, set of objects or quantity
- Measure and record the length, height, weight or volume of different objects
- Recognise and talk about the value of different denominations of coins and notes
- Tell the time to the hour and half past the hour, drawing the hands on a clock face to show these times
- Order and arrange objects in patterns and sequences
- Recognise and name common 2D and 3D shapes including squares, circles and pyramids
- Describe position, direction and movement

# Year 2

- Compare and order numbers from 0 to 100, using  $<$ ,  $>$  and  $=$  signs
- Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward
- Use place value and number facts to solve problems
- Add and subtract two-digit numbers using mental and written methods
- Recall and use addition and subtraction facts up to 20, and derive related facts up to 100
- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, and recognise odd and even numbers
- Solve addition and subtraction money problems, using symbols for pounds and pence
- Tell and write the time to the nearest five minutes
- Identify, describe, compare and sort 2D and 3D shapes
- Interpret and construct pictograms, tally charts, block diagrams and simple tables

# Year 3 and 4

- Using and understanding numbers up to 1000 and then beyond 1000
- Counting up in multiples of 10, 25, 50 100 and 1000
- Using negative, as well as positive, numbers
- Adding, subtracting, multiplying and dividing mentally and using formal written calculation methods
- Remembering times tables up to 12 x 12
- Exploring fractions and decimals
- Analysing and comparing a range of 2D and 3D shapes and their properties
- Telling the time accurately, including using Roman numerals, and calculating with time
- Calculating with measurements, including calculating perimeter and area
- Converting measurements (e.g. from centimetres to metres)
- Interpreting and presenting data using pictograms, tables and bar graphs.

# Year 5 and 6

- Reading, writing, ordering and comparing numbers up to 10,000,000 and determining the value of each digit
- Rounding whole numbers and beginning to use negative numbers
- Reading Roman numerals to 1000 and recognising years written in Roman numerals
- Adding and subtracting numbers with more than 4 digits, using formal written methods
- Multiplying and dividing numbers with up to 4 digits by two-digit whole numbers, using long multiplication and division
- Identifying common factors, common multiples and prime numbers
- Using the order of operations and solving multi-step problems
- Comparing, ordering and simplifying fractions
- Calculating with fractions and associating fractions with decimals and percentages
- Solving problems involving ratio and proportion
- Using simple formulae and expressing simple problems algebraically
- Converting between units of measure and calculating with measurements, including time, area and volume
- Drawing 2D shapes and recognising, describing and building simple 3D shapes
- Drawing, identifying and measuring angles
- Using tables, pie charts and line graphs
- Calculating and interpreting the mean as an average

# Our Curriculum

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CPSA ▾

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School Clubs

School Lunches

Evaluation and Results

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Organisations

Supporting Your Child

Donations to School



Caversham  
Primary  
Curriculum



National  
Curriculum  
for Parents  
2014



Internet  
Safety for  
Parents



Our Curriculum  
Handwriting  
Presentation  
KS1



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Presentation  
KS1



Mathematics  
Presentation  
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Mathematics  
Presentation  
KS1



Homework  
Timetable



Caversham  
Primary  
School  
Cursive Script



Whole School  
Mathematics  
Curriculum



## Year 2 Key Objectives- Mathematics

### Number and place value

- count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and 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
- read and write numbers to at least 100 in words
- use place value and number facts to solve problems.

### Calculation

- 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
- derive and use related facts up to 100
- add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a 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 solve missing number problems.

- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

### Statistics

- interpret and construct simple pictograms, tally charts, block diagrams and simple tables
- ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
- ask and answer questions about totalling and comparing categorical data.

### Fractions and Decimals

- recognise, find, name and write fractions  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{2}{4}$  and  $\frac{3}{4}$  of a length, shape, set of objects or quantity
- write simple fractions for example,  $\frac{1}{2}$  of 6 = 3
- recognise the equivalence of  $\frac{2}{4}$  and  $\frac{1}{2}$ .

### Measures

- choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- compare and order lengths, mass, volume/capacity and record the results using >, < and =
- recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
- find different combinations of coins that equal the same amounts of money
- solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
- compare and sequence intervals of time
- tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
- know the number of minutes in an hour and the number of hours in a day.

### Geometry

- identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
- identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
- identify 2-D shapes on the surface of 3-D shapes (for example, a circle on a cylinder and a triangle on a pyramid)
- compare and sort common 2-D and 3-D shapes and everyday objects.
- order and arrange combinations of mathematical objects in patterns and sequences
- use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)

## Year 6 Key Objectives - Mathematics

### Number, place value & algebra

- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- use negative numbers in context, and calculate intervals across zero
- solve number and practical problems that involve all of the above.
- use simple formulae
- generate and describe linear number sequences
- express missing number problems algebraically
- find pairs of numbers that satisfy an equation with two unknowns
- enumerate possibilities of combinations of two variables.

### Calculation (including Ratio/Proportion)

- multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
- divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
- perform mental calculations, including with mixed operations and large numbers
- identify common factors, common multiples and prime numbers
- use their knowledge of the order of operations to carry out calculations involving the four operations
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

- solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
- solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
- solve problems involving similar shapes where the scale factor is known or can be found
- solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

### Fractions, Decimals & Percentages

- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including fractions  $> 1$
- add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- multiply simple pairs of proper fractions, writing the answer in its simplest form for example,  $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$
- divide proper fractions by whole numbers [for example,  $\frac{1}{3} \div 2 = \frac{1}{6}$ ]
- associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example,  $\frac{3}{8}$ ]
- identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
- multiply one-digit numbers with up to two decimal places by whole numbers
- use written division methods in cases where the answer has up to two decimal places
- solve problems which require answers to be rounded to specified degrees of accuracy
- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

### Measures

- solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to three decimal places
- convert between miles and kilometres
- recognise that shapes with the same areas can have different perimeters and vice versa
- recognise when it is possible to use formulae for area and volume of shapes
- calculate the area of parallelograms and triangles
- calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units [for example, mm<sup>3</sup> and km<sup>3</sup>].

### Geometry

- draw 2-D shapes using given dimensions and angles
- recognise, describe and build simple 3-D shapes, including making nets
- compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
- illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
- recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
- describe positions on the full coordinate grid (all four quadrants)
- draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

### Statistics

- interpret and construct pie charts and line graphs and use these to solve problems
- Calculate and interpret the mean as an average.

How can you help to build your child's  
number sense and fluency?

One of the most important things you can do to help your child is to help them to learn their number facts:

➤ Addition and subtraction

Addition and subtraction facts

Composition of numbers

Number bonds

Best Friends

Practise the 'best friends'  
or number bonds to 10

$0 + 10$

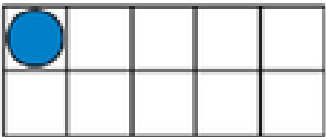
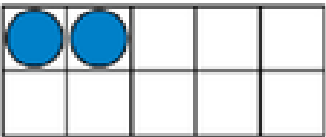
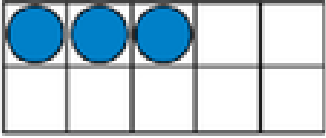
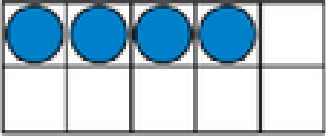
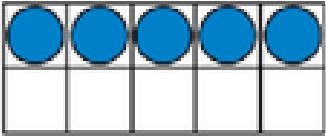
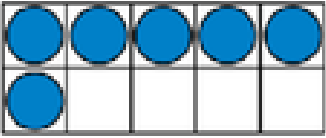
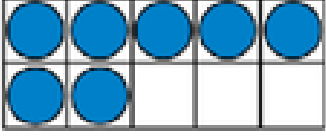
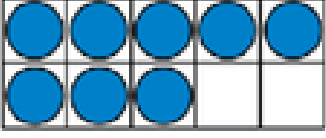
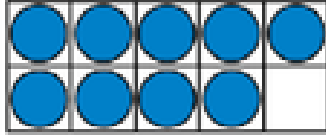
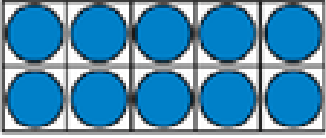
$1 + 9$

$2 + 8$

$3 + 7$

$4 + 6$

$5 + 5$

 $1 + \underline{\quad} = 10$	 $2 + \underline{\quad} = 10$
 $3 + \underline{\quad} = 10$	 $4 + \underline{\quad} = 10$
 $5 + \underline{\quad} = 10$	 $6 + \underline{\quad} = 10$
 $7 + \underline{\quad} = 10$	 $8 + \underline{\quad} = 10$
 $9 + \underline{\quad} = 10$	 $10 + \underline{\quad} = 10$

This then means you can easily count up to the next 10 which is an extremely helpful strategy for mental calculations.

$$36 + \underline{\quad} = 40$$

$$62 + \underline{\quad} = 70$$

6 + 8 + 4 is suddenly much easier if you spot the number bonds to 10

These then lead to the number bonds to 100,  
1000, 1 etc.

0 + 100	0 + 1000	
10 + 90	100 + 900	0 + 1.0
20 + 80	200 + 800	0.1 + 0.9
30 + 70	300 + 700	0.2 + 0.8
40 + 60	400 + 600	0.3 + 0.7
50 + 50	500 + 500	0.4 + 0.6
		0.5 + 0.5

Play games showing numbers of fingers...

Hold up some fingers for your partner.



See how quickly they can tell you how many you are holding up.

How quickly can they tell you how many are down (using number bonds to 10)?

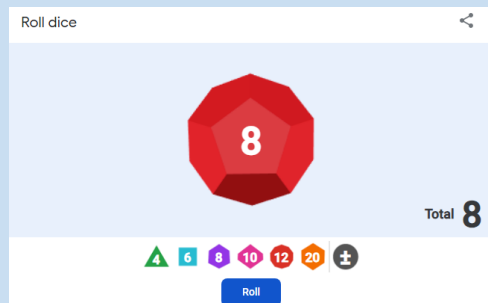
Verbal games – lots of repetition

Ping pong your best friends to 10

Sing, chant, march, jump, clap

# Play games with dice:

- Roll the dice and give the best friend to 10
- Roll a dice and double the number
- Add ten to the number
- Throw two dice and race to add or subtract the numbers
- Play a game using one dice and double the number if it's odd and halve the number if it's even.



# Card Games



- Remove picture cards (you can add them back in later to make things more challenging!)
- Decide on a rule e.g. Double/partner to 10...
- Turn over top card
- First person to say the correct answer wins the card

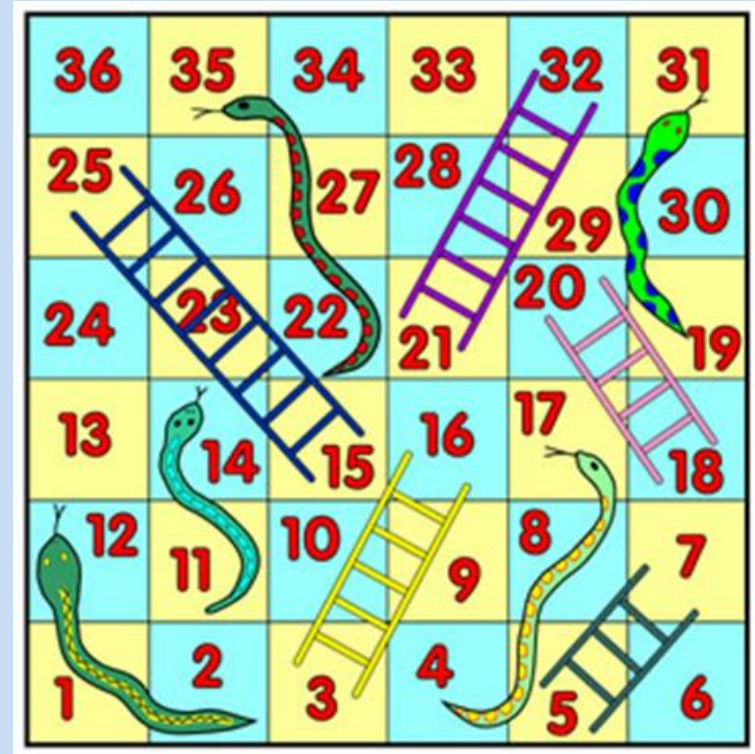
# Card Games

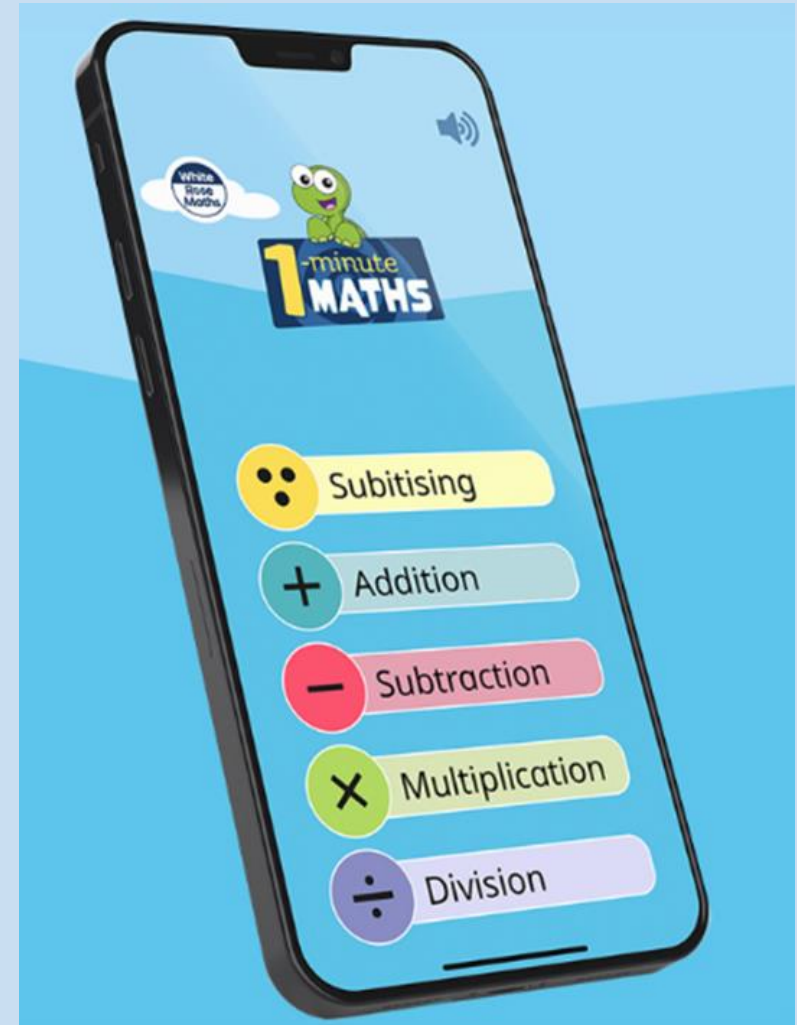


- Remove picture cards
- Split deck in half – one pile each face down
- Both turn over top card
- First person to say sum/difference wins the pair
- Turn over two cards, make it a 2-digit number and give the fact to 100 or make it a decimal number and give the fact to 10

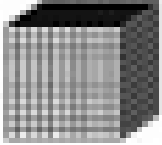
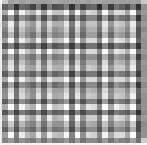
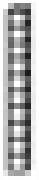

# Play board games or make your own games using a 100 square.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



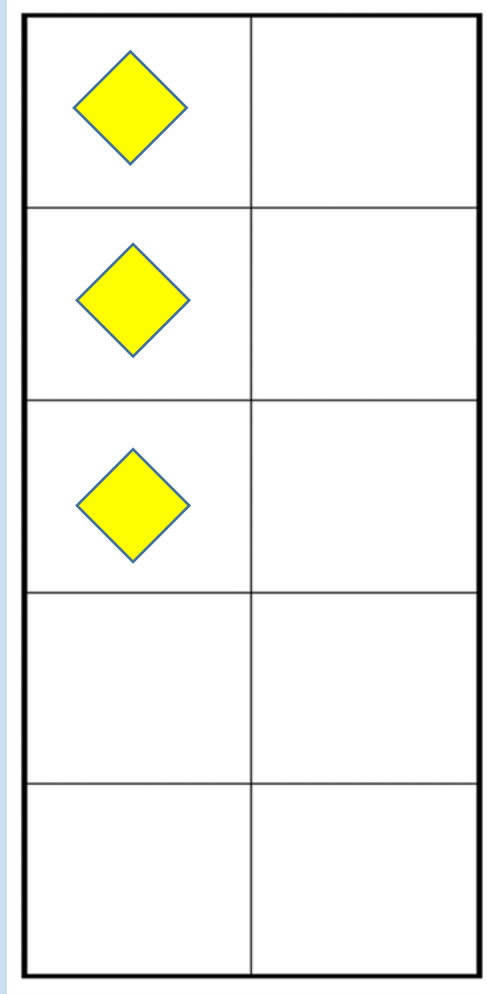
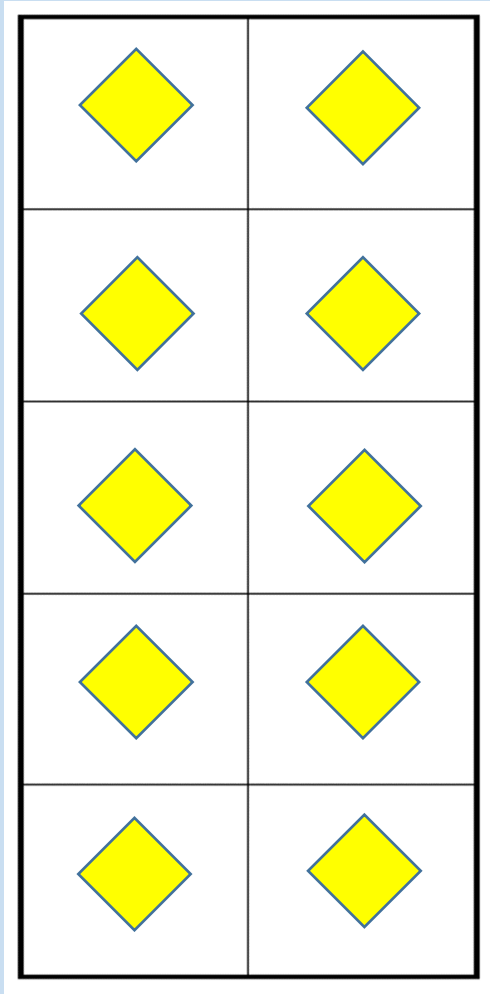


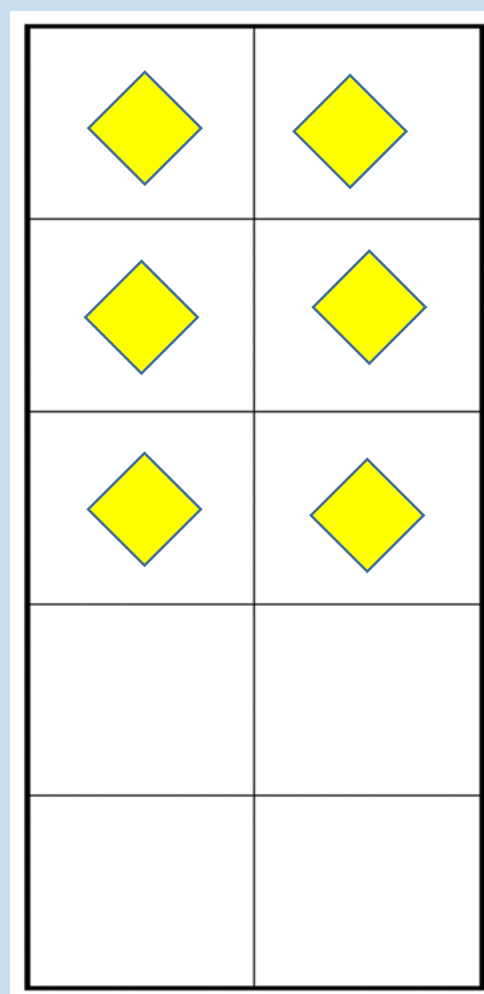
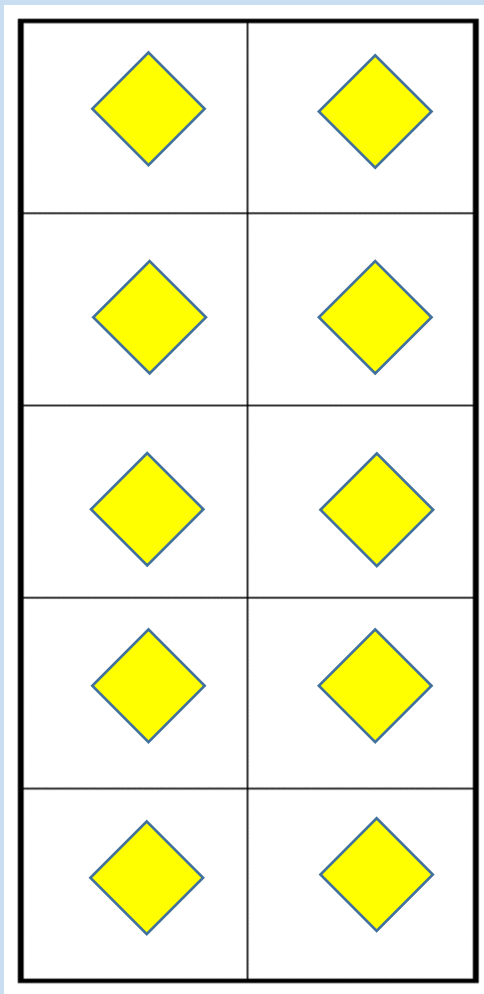
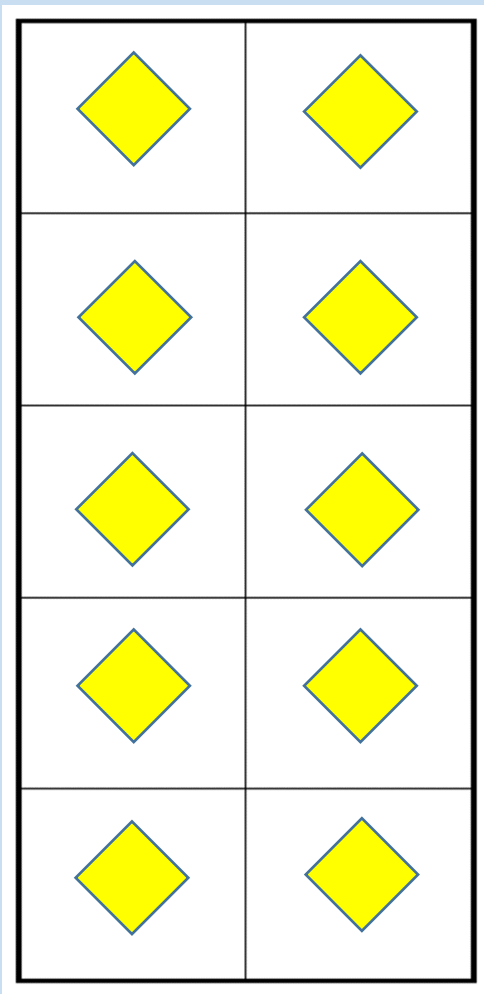
# A sense of 10 and Place Value

Thousands 	Hundreds 	Tens 	Ones 

# Understanding place value and the size of numbers

Decimal Place Value Chart													
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	•	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths	Millionths
M	Hth	TTh	Th	H	T	O	•	t	h	th	tth	hth	m
							•						



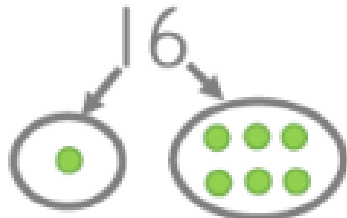


Is it sixteen? ✓ x


Is it sixteen?

61

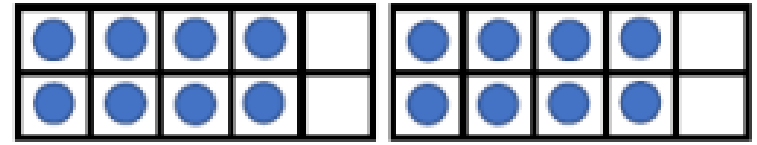
Is it sixteen?



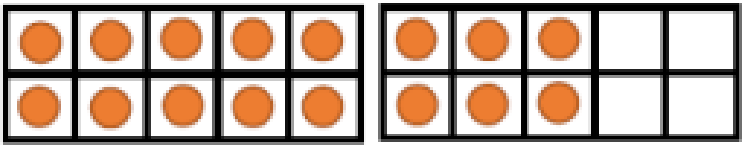
Is it sixteen?



Is it sixteen?

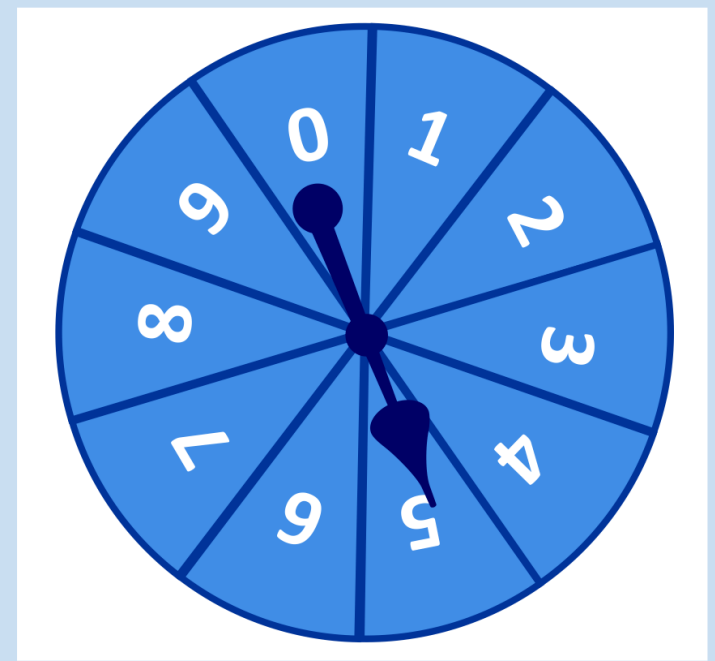


Is it sixteen?



With an understanding of place value, children can partition numbers to help with calculations.



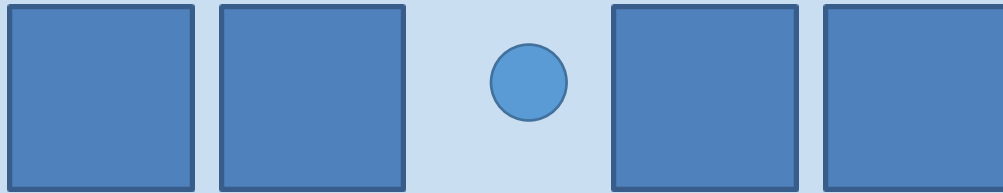


Let's play!

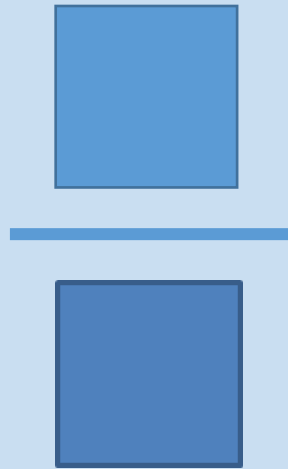
# Understanding place value and the size of numbers.



Biggest number  
wins!



Number closest to  
50 wins



Biggest number  
wins!

$$\frac{\square}{\square} > \frac{\square}{\square}$$

Score a point if  
you can make  
this true?

## True or false?

Three thousand and  
two-thousand

2 ten-thousands  
and 120 hundreds

**32 000**

```
graph TD; A[32 000] --> B[Three thousand and two-thousand]; A --> C[2 ten-thousands and 120 hundreds]; A --> D[32 hundreds]; A --> E[3 200 tens];
```

32 hundreds

3 200 tens

---

## True or false?

Three thousand and two-thousand

F

2 ten-thousands and 120 hundreds

T

**32 000**

F

32 hundreds

T

3 200 tens

One of the most important things you can do to help your child is to help them to learn their number facts:

- Multiplication and division (times tables)

Year 1: Count in multiples of 2, 5, 10

Recall and use doubles and halves to 10.

Year 2: Recall and use multiplication and division facts for the 2, 5 and 10 times tables.

Year 3: Recall and use multiplication and division facts for the 3, 4 and 8 times tables.

Year 4: Recall and use multiplication and division facts for all the times tables up to  $12 \times 12$ .

End of Year 4: Government times tables test

Year 5 and 6

Know and use all the times tables up to  $12 \times 12$  and use them efficiently

If I know that  $4 \times 8 = 32$  I know that ...

$$8 \times 4 = 32$$

$$80 \times 4 = 320$$

$$32 \div 4 = 8$$

$$8 \times 400 = 3200$$

$$32 \div 8 = 4$$

$$0.8 \times 4 = 3.2$$

$$3.2 \div 8 = 0.4$$

$$0.8 \times 0.4 = 0.32$$

$$\frac{1}{4} \text{ of } 32 = 8$$

$$\frac{1}{8} \text{ of } 32 = 4$$

If I know my four times table, I can immediately spot that  $\frac{28}{32} = \frac{7}{8}$

I know the perimeter of an octagon with sides of 4cm is 32cm.

$$\text{area} = 24 \text{ cm}^2$$

What could the perimeter be?

If

$$\text{circle} \times \text{star} = 30$$

$$\text{circle} \times \text{circle} \times \text{star} = 180$$

Find the value of

$$\text{circle} + \text{circle} + \text{circle} = \boxed{\phantom{000}}$$

$$\text{star} \times \text{star} = \boxed{\phantom{000}}$$

# Card Games



- Remove picture cards (you can add them back in later to make things more challenging!)
- Choose a times table to practise
- Turn over top card
- Multiply the card by your chosen number
- First person to say the correct answer wins the card

# Card Games

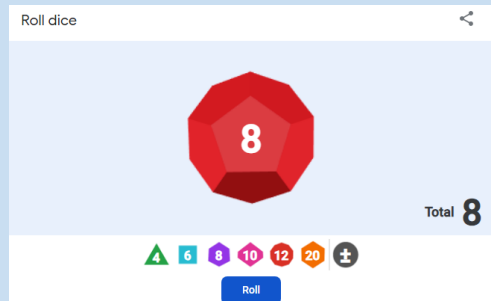


- Remove the picture cards (keep them in for the 11 and 12 times tables)
- Split deck in half – one pile each face down
- Both turn over the top card
- First person to say the product (the two numbers multiplied together) correctly wins the pair

# Play games with dice to practise times tables:

Treat yourselves to some 1-12 dice to make this more effective or use two dice and add the two numbers before multiplying.

- Choose a times table, roll the dice and race to multiply the number on the dice by your chosen times table.
- Roll two dice (or four if using pairs of 1-6 dice) and race to multiply the two numbers together.



- Look for patterns/rules:  
Even/odd/last digit/digit sums...

- Make up a rhyme e.g.



I ate and ate till I was sick on the floor  
8 times 8 is 64!

- Relate it to something real – make a mental picture  
5 tables with 6 children round each one = a class of 30
- Just choose one fact and ask it as often as possible and in different ways all week.



## An Array

A way of organising objects to visualise the multiplication and division facts.

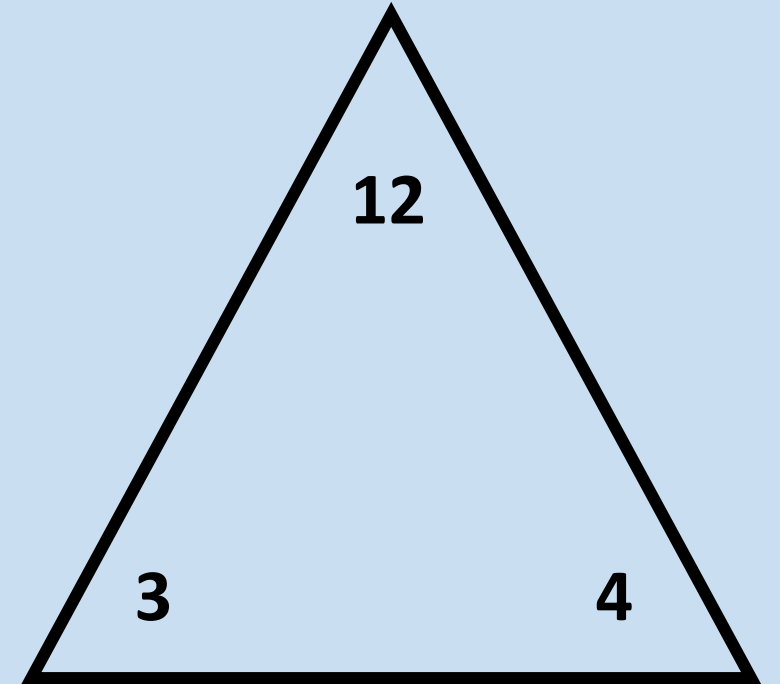


$$3 \times 4 = 12$$

$$4 \times 3 = 12$$

$$12 \div 3 = 4$$

$$12 \div 4 = 3$$



Put it up somewhere at home.

# 9 times table

- The digits add up to 9
- Use your fingers to learn the pattern



# Evens...

- 2, 4, 6, 8, 10, 12... times tables:

**Even** times tables have **even** answers

# Odds...

- 1, 3, 5, 7, 9, 11... times tables:

Odd times tables have alternate answers: odd, even, odd, even...



Times Tables Rock Stars

<https://ttrockstars.com/>

all the children have their own login details

Hit the Button – no account required

<https://www.topmarks.co.uk/maths-games/hit-the-button>

[www.timestables.me.uk](http://www.timestables.me.uk)

Play online or print out written sheets



# 1 minute maths app from White Rose

## Maths Frame

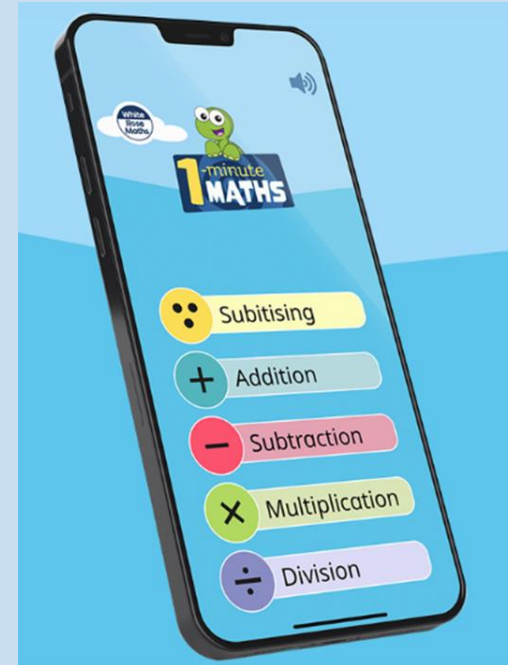
MAIN MENU **Multiplication Tables Check** Time left: 6

5 x 9 =

1	2	3
4	5	6
7	8	9
<input type="text"/>	0	ENTER

Time allowed: 6 seconds  
Tables selected: All

**Question 5 of 25** MATHSFRAME



Website full of hints, tips and videos

[oxfordowl.co.uk](https://www.oxfordowl.co.uk)

<https://www.theschoolrun.com/times-tables-the-best-ways-to-learn>

BBC supermovers times tables songs

<https://www.bbc.co.uk/teach/supermovers/times-table-collection/z4vv6v4>

Don't give up – some children will find them harder than others.

They never need to say 'I don't know that one' - they just need longer to work it out. We just learn them to make things a bit easier and to help us be a bit lazier!

Once you have learnt 2, 5, 10, 11 times tables and square numbers  
Only half the black ones left...

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Once you have learnt 2, 5, 10, 11 times tables and square numbers  
Only half the black ones left...

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

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x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

That's only  
21 facts.

# Assessment

# Early Years Foundation Stage Profile

The EYFS profile is a statutory assessment of children's attainment at the end of the early years foundation stage (end of Reception).

Children are assessed against the Early Learning Goals.

## Key Stage 1 SATs (summer of Year 2)

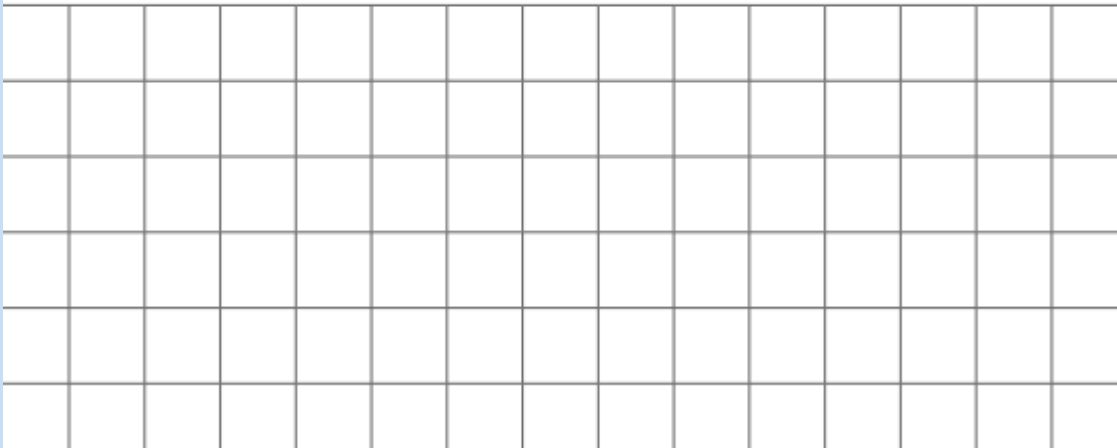
These are no longer statutory but we will probably continue to use them as part of our teacher assessment.

Paper 1: Arithmetic (fluency and calculations)

Paper 2: Reasoning (fluency, calculations, reasoning and problem solving)

$$8 + \boxed{\phantom{000}} + 4 = 17$$

$$45 + 16 = \boxed{\phantom{0000}}$$



There are **43** people on a bus.

**15** people get off.

**8** people get on.



How many people are on the bus **now**?

Look at these number cards.



Choose **three** of the number cards to make this subtraction correct.

$$\square - \square = \square$$

This number sentence equals 18

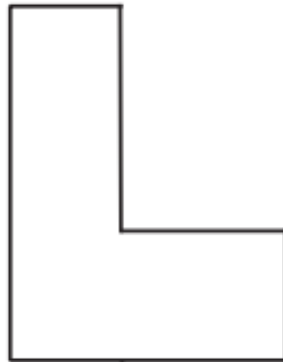
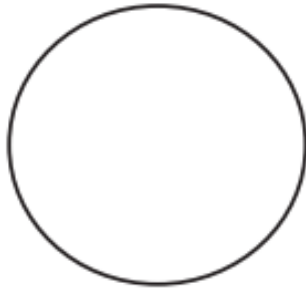
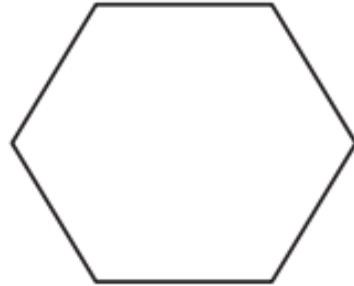
$$\boxed{1} + \boxed{17} = \boxed{18}$$

Now write a **different** number sentence that equals 18

Write **one digit** in each empty box.





$$\square + \boxed{1\square} = \boxed{18}$$

Draw a cross on the shape that does **not** have a line of symmetry.



Draw a line to match each measurement to the correct unit.

One is done for you.

measurement	unit
 the <b>length</b> of a pencil	kg
 the <b>mass</b> of a bag of potatoes	°C
 the <b>capacity</b> of a cup	cm
 the <b>temperature</b> outside	ml

A line is drawn from the 'length' measurement box to the 'cm' unit box.

# Year 4 Multiplication Tables Check (June of Year 4)

25 times tables questions with 6 seconds to answer each one.

# Year 4 Multiplication Tables Check (June of Year 4)

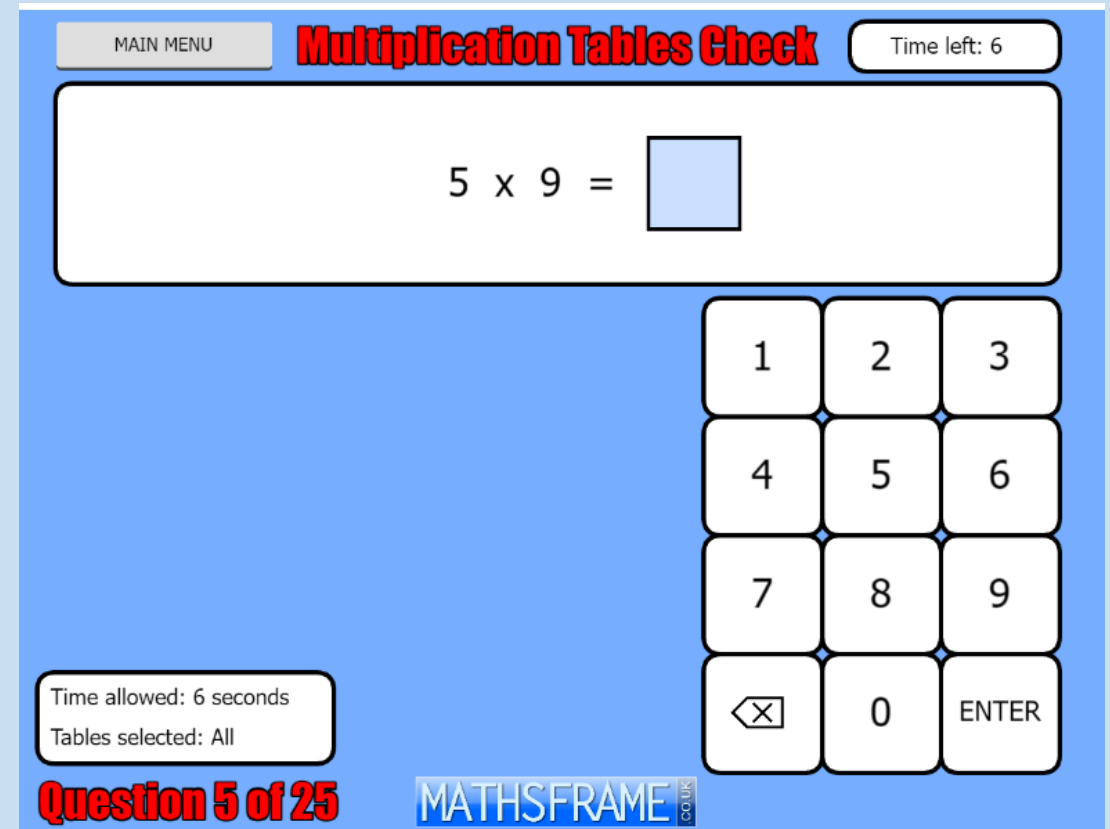
25 times tables questions with 6 seconds to answer each one.

Times Tables Rockstars  
Sound Check



<https://mathsframe.co.uk/en/resources/resource/477/Multiplication-Tables-Check>

## Mathsframe



MAIN MENU **Multiplication Tables Check** Time left: 6

5 x 9 =

1	2	3
4	5	6
7	8	9
<input type="text"/>	0	ENTER

Time allowed: 6 seconds  
Tables selected: All

**Question 5 of 25** MATHSFRAME.CO.UK

## Key Stage 2 SATs (May of Year 6)

Paper 1: Arithmetic (fluency and calculations)

Paper 2: Reasoning (fluency, calculations, reasoning and problem solving)

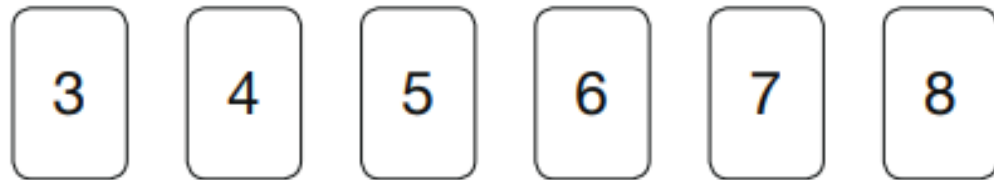
Paper 3: Reasoning (fluency, calculations, reasoning and problem solving)





**2**

Here are six number cards.

Use **all six** cards to complete the three multiplications below.

$$24 = \square \times \square$$

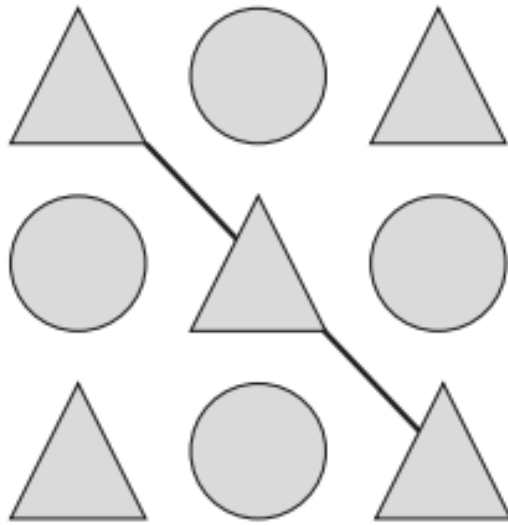
$$28 = \square \times \square$$

$$30 = \square \times \square$$

---

1 mark

21



Each shape stands for a number.

The total of the shapes on the diagonal line is 48

The total of all the shapes is 200

Calculate the value of each shape.

$$\triangle = \boxed{\phantom{000}}$$

1 mark

$$\circ = \boxed{\phantom{000}}$$

1 mark



19

Jack says,

When you square a prime number, the answer has only two factors.

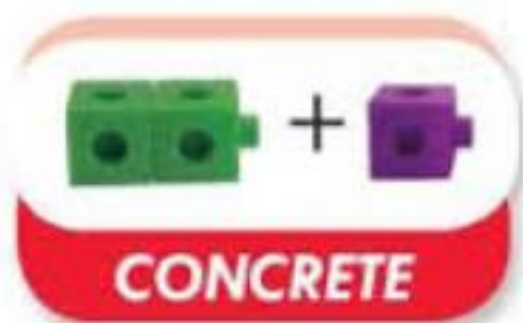


Explain why Jack is **not** correct.

A large, empty, cloud-shaped box with a scalloped border, intended for the student to write their explanation.

1 mark

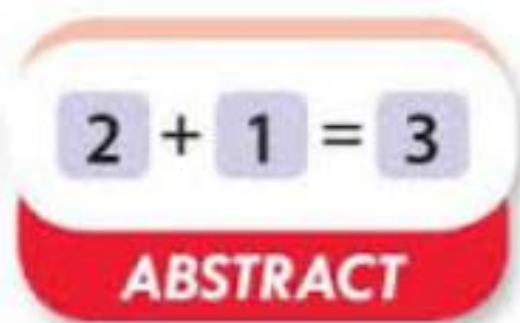
concrete



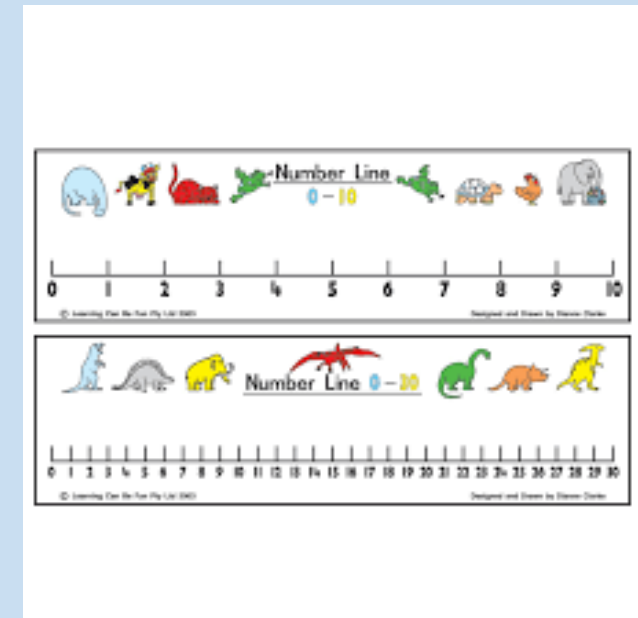
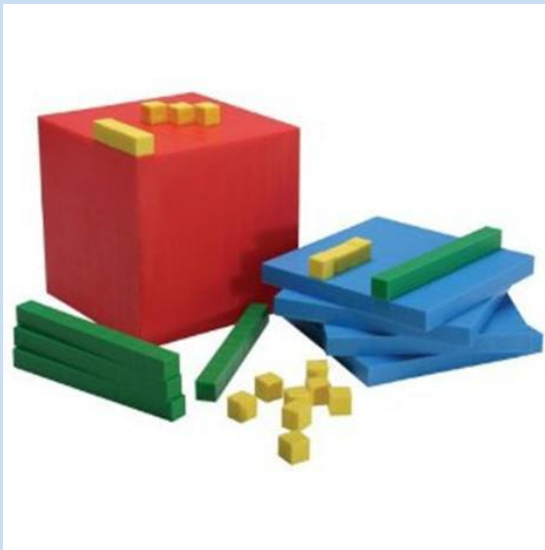
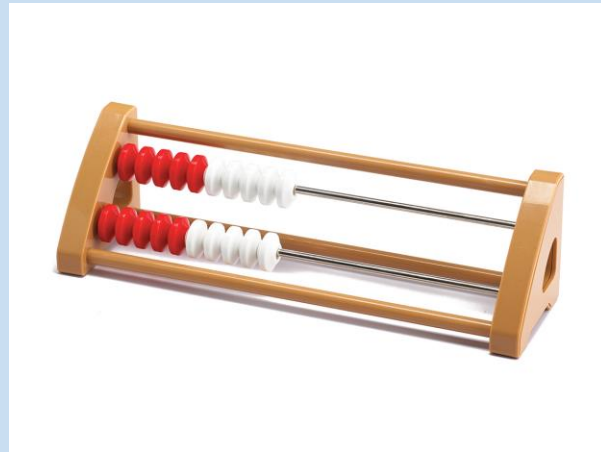
pictorial

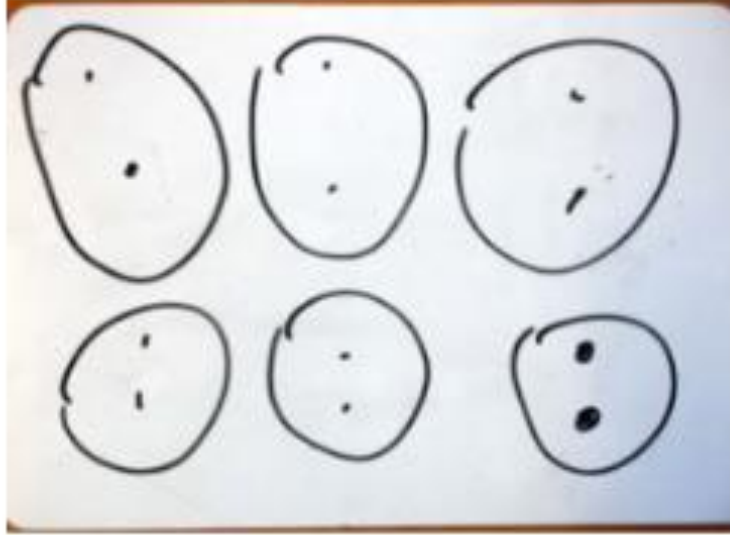


abstract



# Concrete Resources





$$12 \div 6 = 2$$

Formal column method with place value counters.

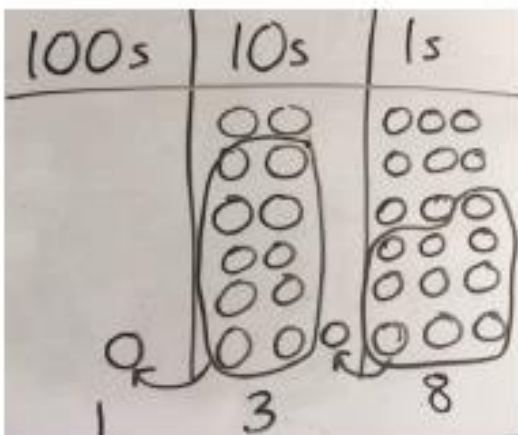
$6 \times 23$

100s	10s	1s



100s	10s	1s

Children to represent the counters/base 10, pictorially e.g. the image below.

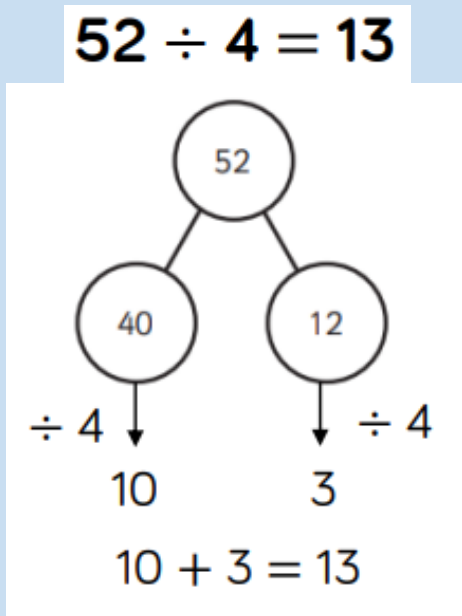
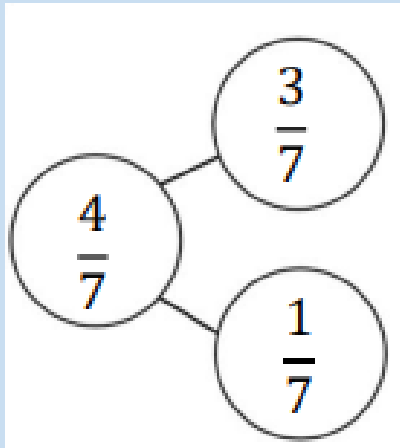
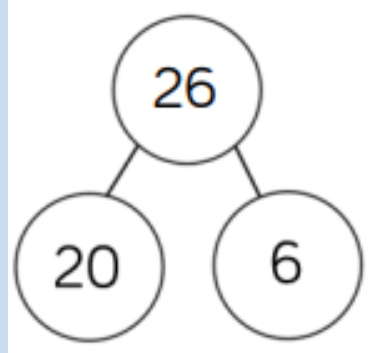
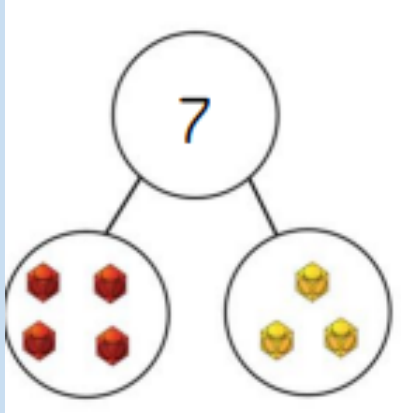


Formal written method

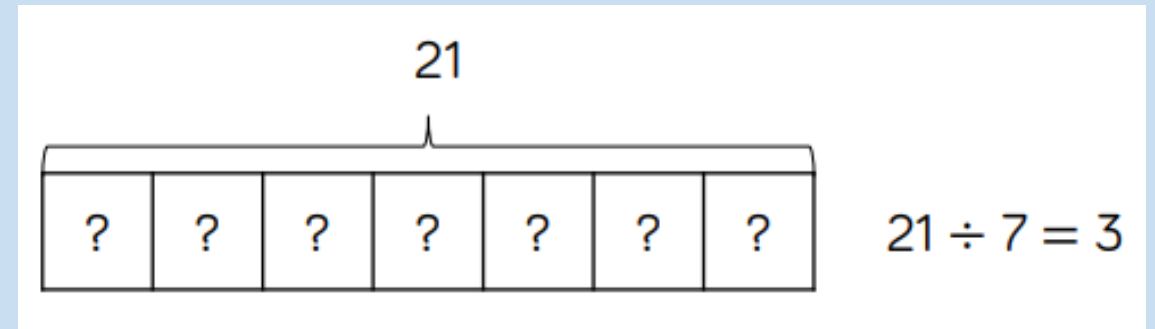
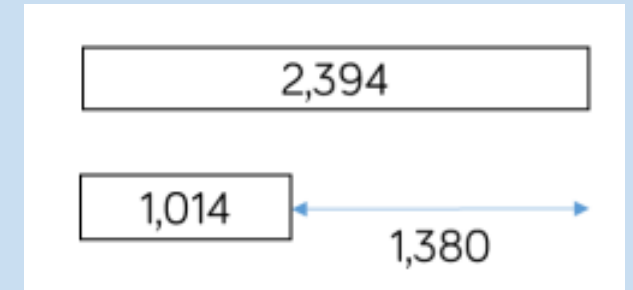
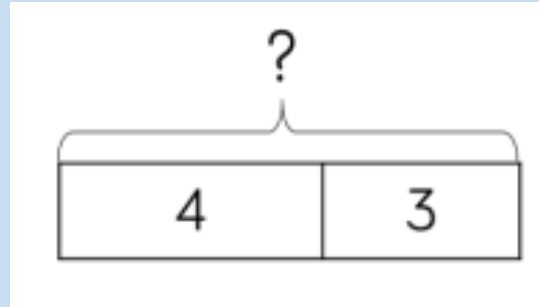
$6 \times 23 =$

$$\begin{array}{r} 23 \\ \times 6 \\ \hline 138 \\ \hline 11 \end{array}$$

# Part-Whole Model



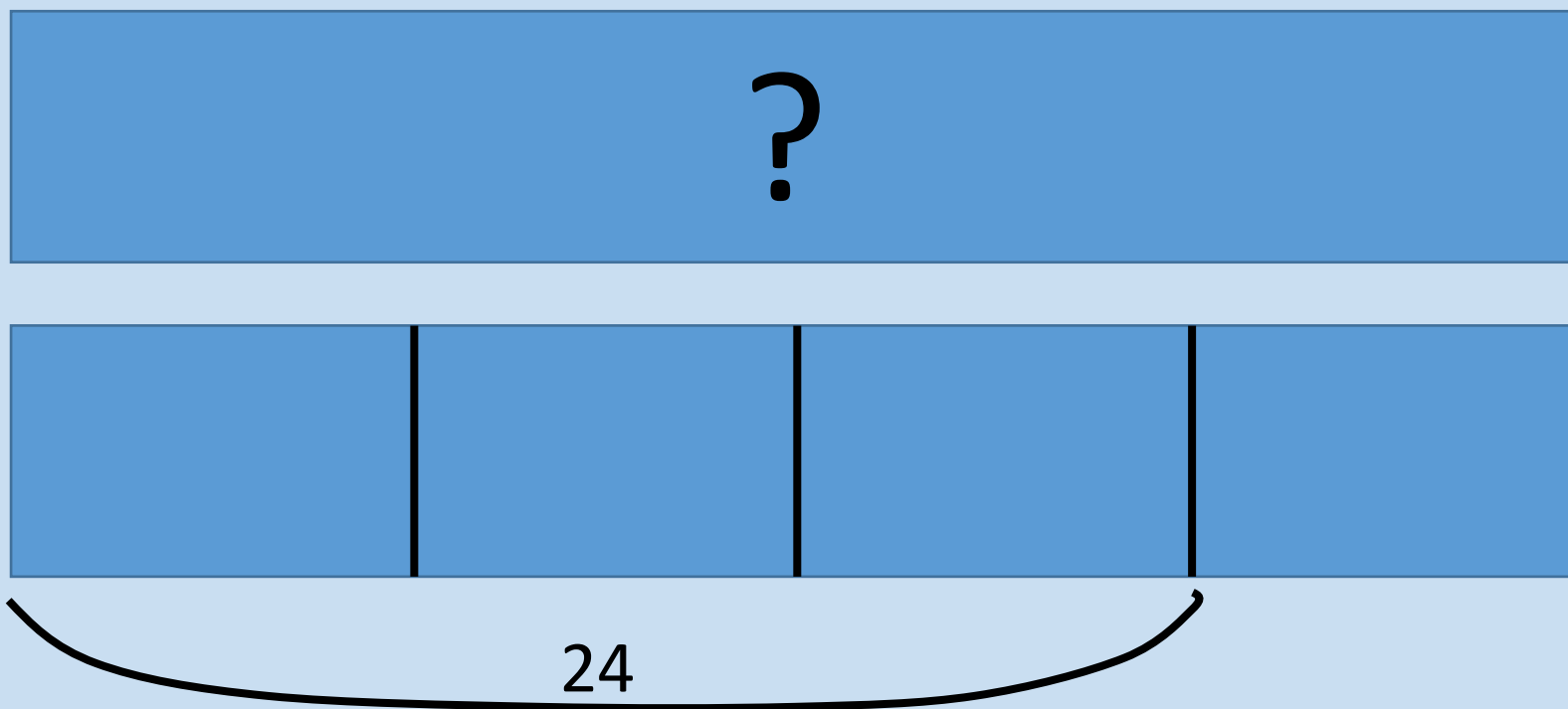
# Bar Model



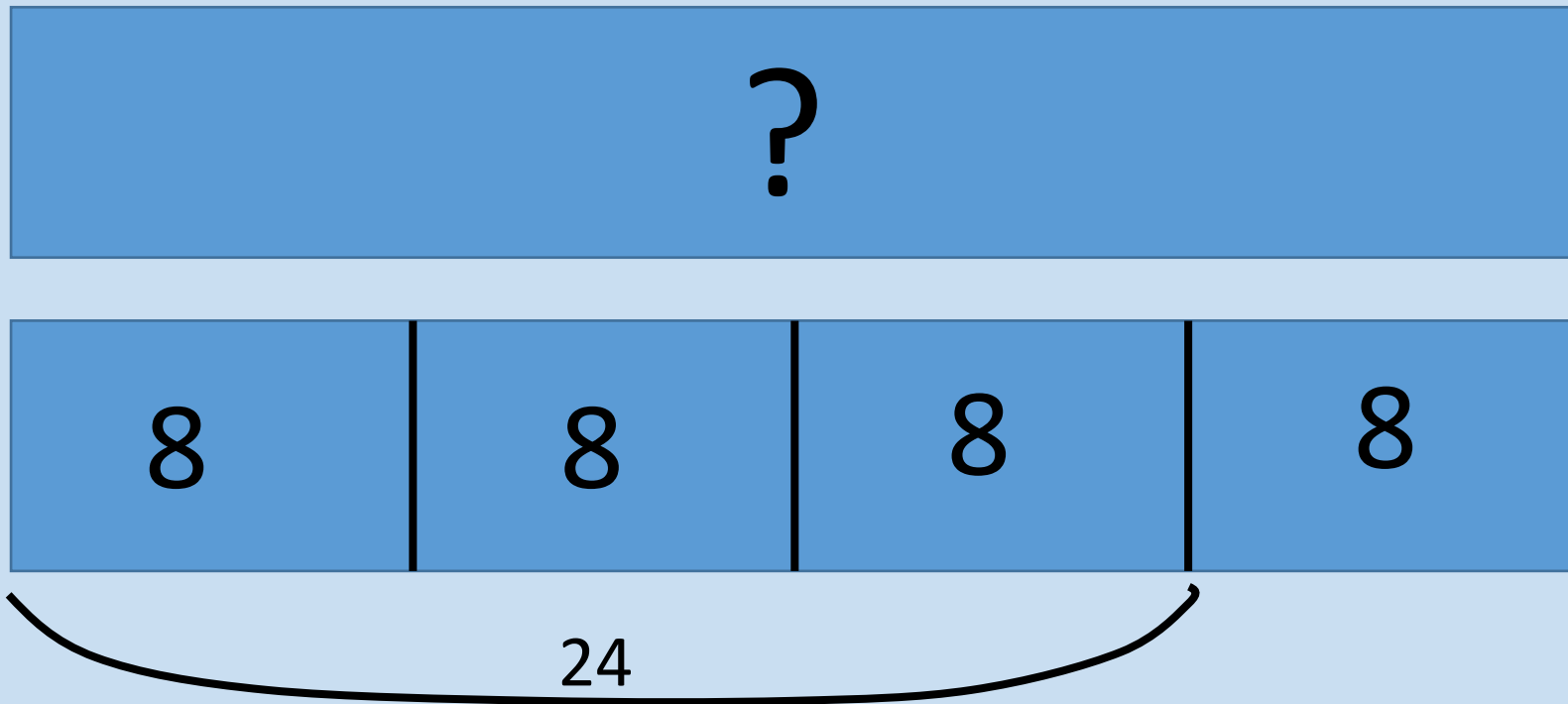
$\frac{3}{4}$  of a number is 24. What is the number?

?

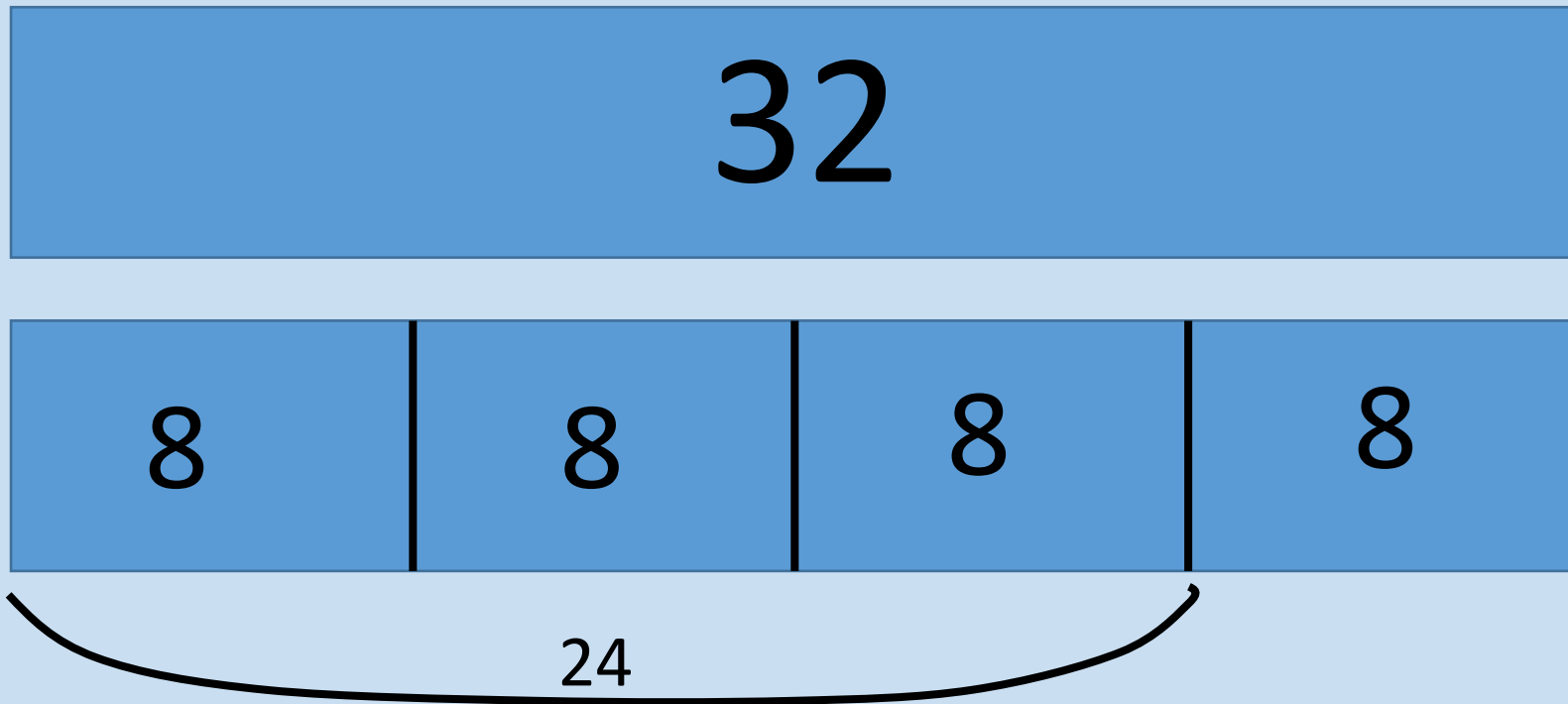
$\frac{3}{4}$  of a number is 24. What is the number?



$\frac{3}{4}$  of a number is 24. What is the number?



$\frac{3}{4}$  of a number is 24. What is the number?



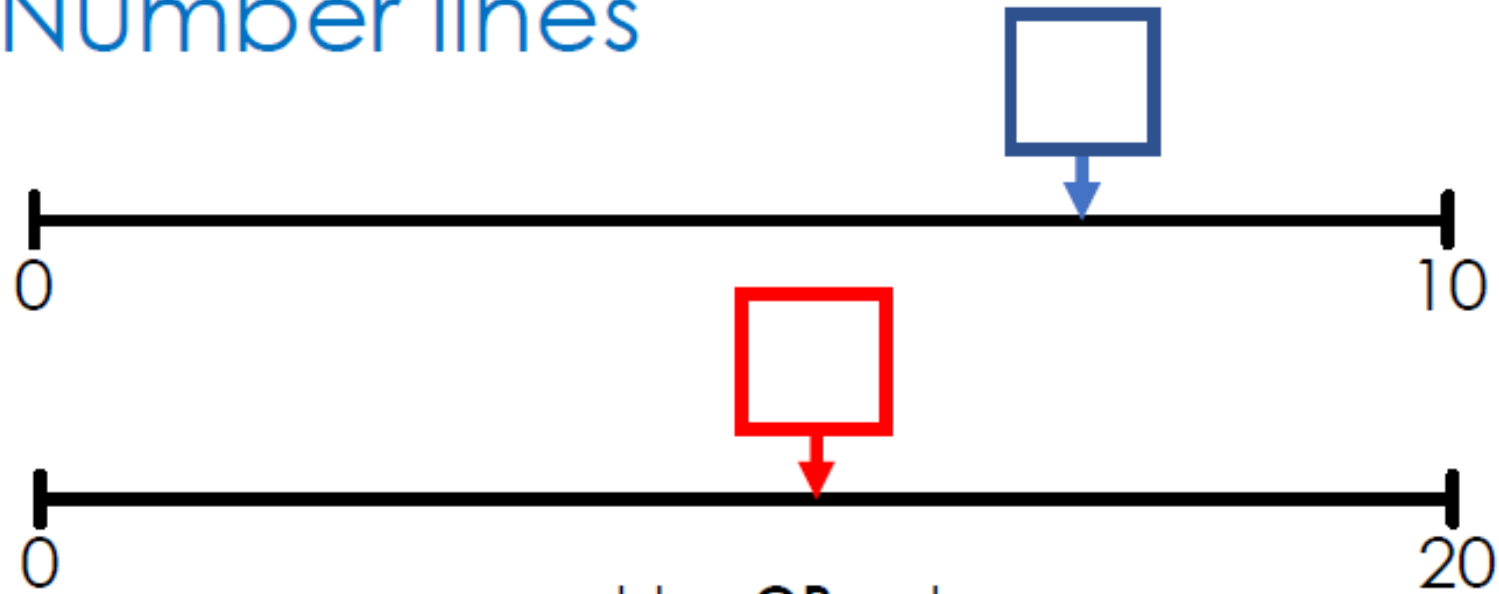
Which answer?

4 is here

4 is here



# Number lines



blue OR red

*The number in the  box is larger.*

Explain how you know.

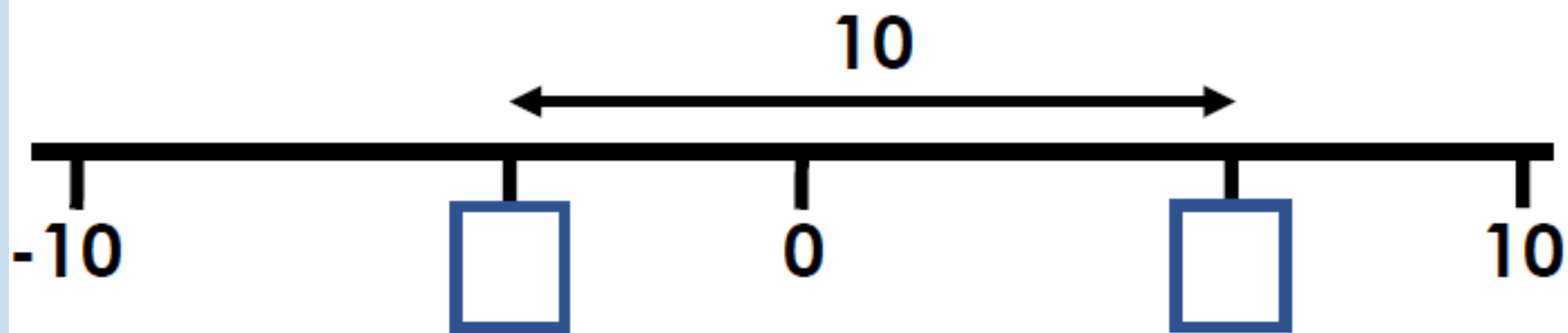
Show **4** on each number line.



Show the position of **328** on each number line.



Estimate the value of the hidden numbers.



Draw something to prove to that:

5 is an odd number

$\frac{1}{3}$  is equivalent to  $\frac{2}{6}$

# Investigate

Use these digits:

3

8

1

Make a 2-digit number  
and a 1-digit number.

Make the difference between the numbers as small as you can.

Now make the difference as big as possible.

How many different ways are there of arranging the numbers?

# Investigate



Using the digits 0, 1, 2, 3 and 4 make a 3-digit number and a 2-digit number.



***Make the difference between the two numbers as small as possible.***



*You can use each digit only once.*



## Make 20p

2 coins

--	--

3 coins

--	--	--

4 coins

--	--	--	--

5 coins

--	--	--	--	--

How many ways?

Make 60p

Use 5 coins

--	--	--	--	--

**Complete in 3 different ways:**

$$\frac{1}{2} \text{ of } \square = \frac{1}{10} \text{ of } \square \quad \textit{What do you notice?}$$

# Telling the time

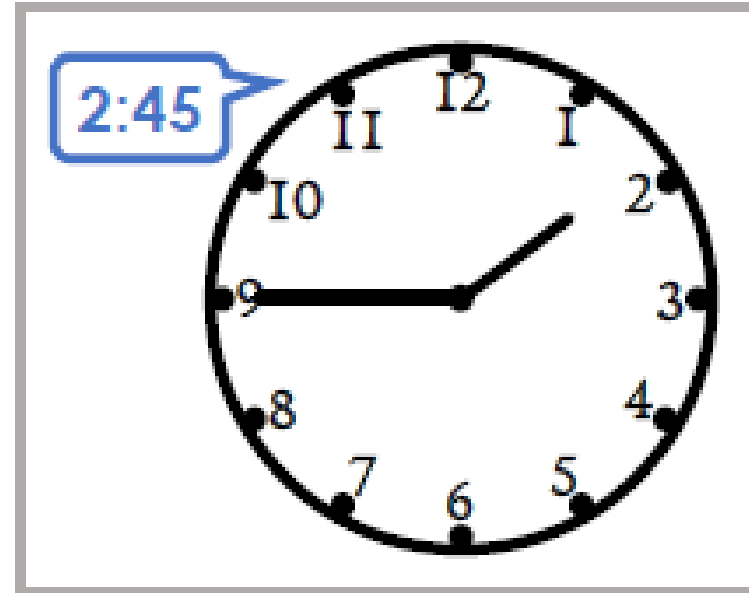
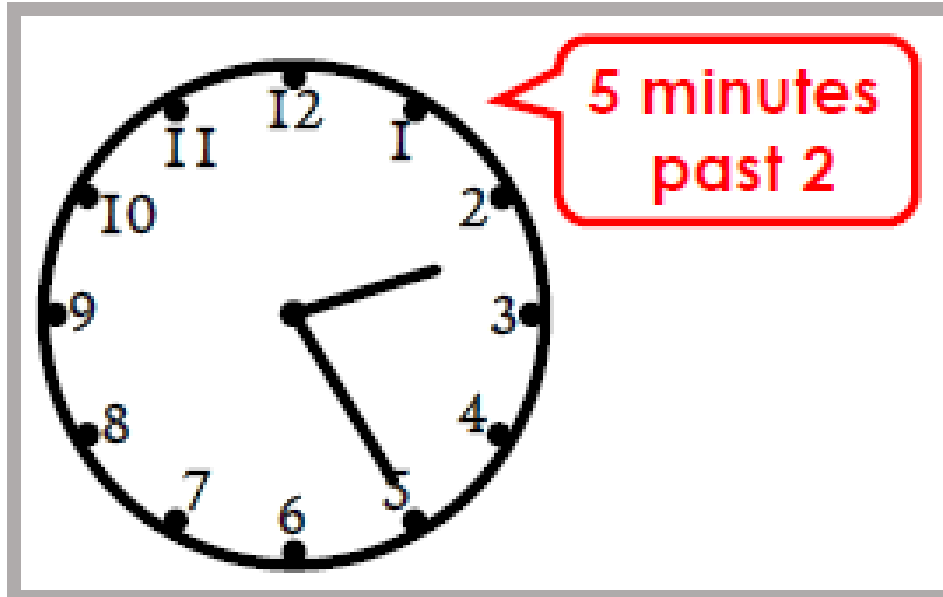
How much time we have to get ready?

How long until tea is ready?

What time is it?



# Explain the mistakes



Fill the gaps



$$\frac{1}{2}$$



$$\frac{1}{3}$$



$$\frac{1}{4}$$

*What do you notice?*

## Rank by difficulty

$$\frac{3}{9} + \frac{7}{9}$$

$$\frac{3}{6} + \frac{5}{10}$$

$$\frac{1}{5} + \frac{3}{10}$$

$$\frac{4}{7} + \frac{2}{7}$$

$$\frac{1}{3} + \frac{2}{5}$$

# Talking about maths – make it real

- Numbers
- Time
- Measurements – length, height, weight, capacity, distance...
- Estimating
- Fractions
- Shape
- Directions

**Be enthusiastic – have fun!**

Please see the separate recording for information about some of the calculation methods your child will be taught at school.



Any questions?

Please feel free to email the school or catch me in the playground before or after school if you have any questions.  
Mrs Alexander

Thank you!