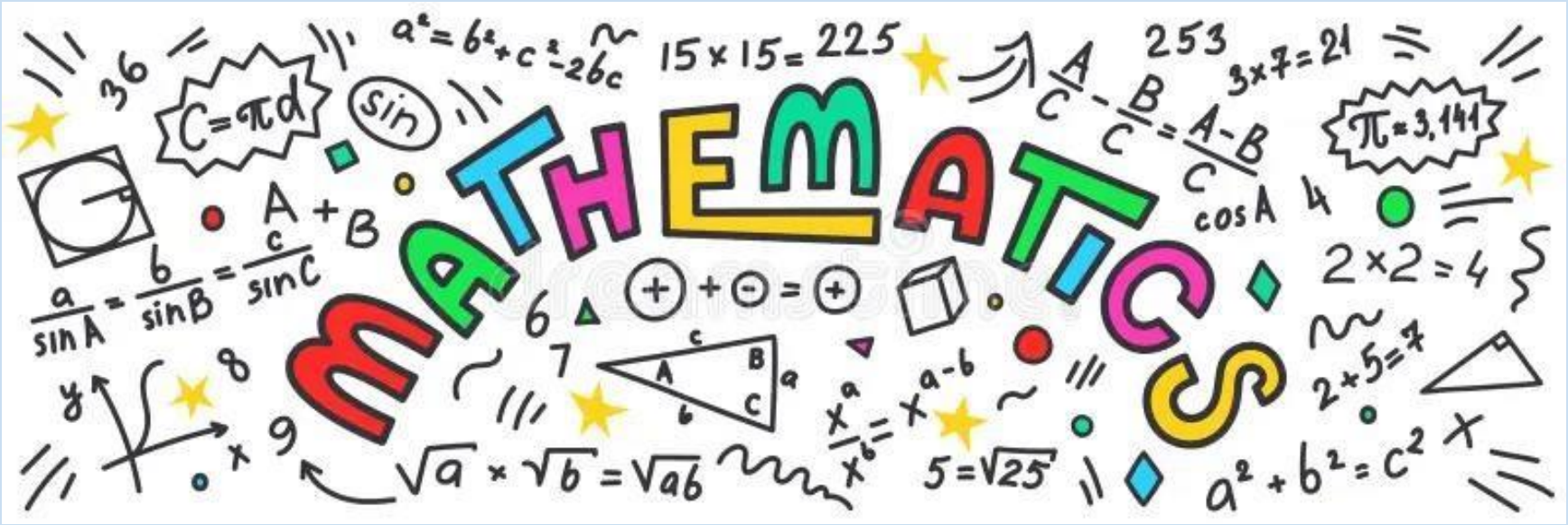
Parent Workshop



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 ÷

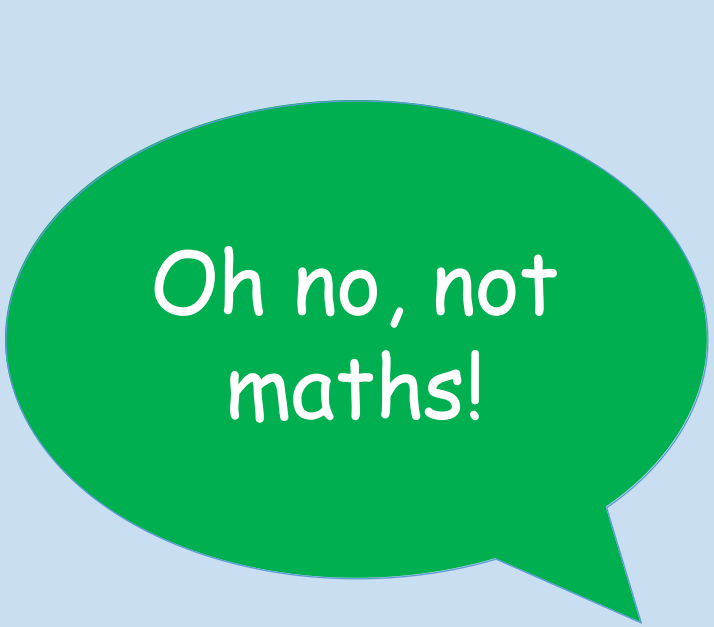
Can you do it in more than one way?

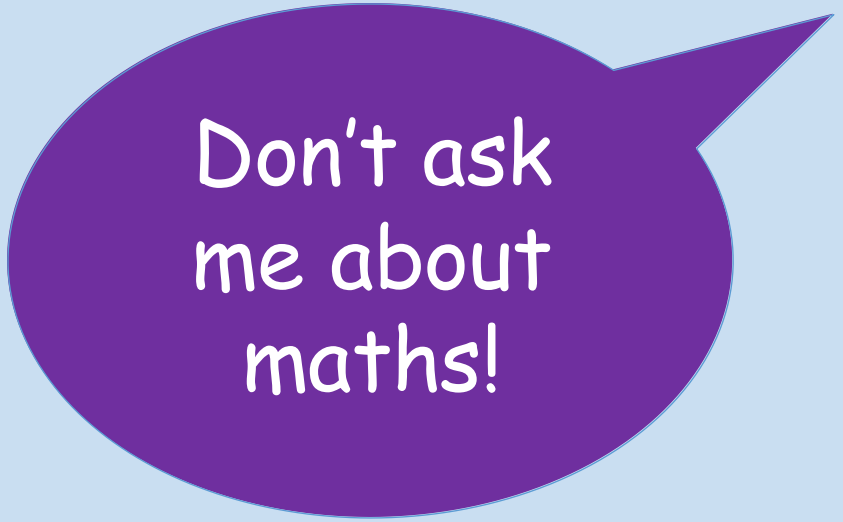
2 5 6 8

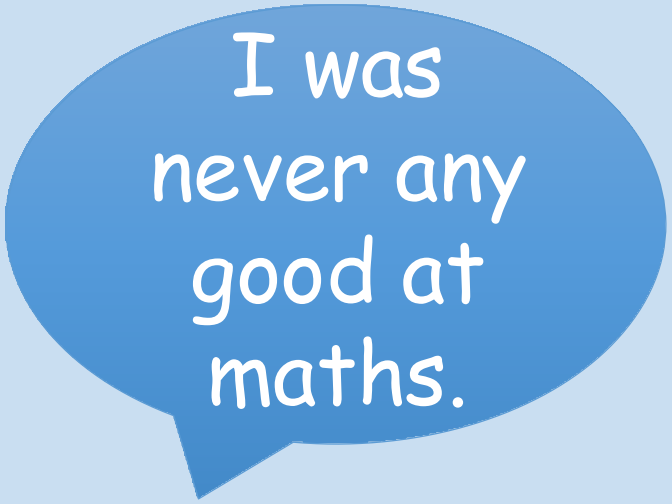
Aims for this session:

- 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 ask any questions.

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

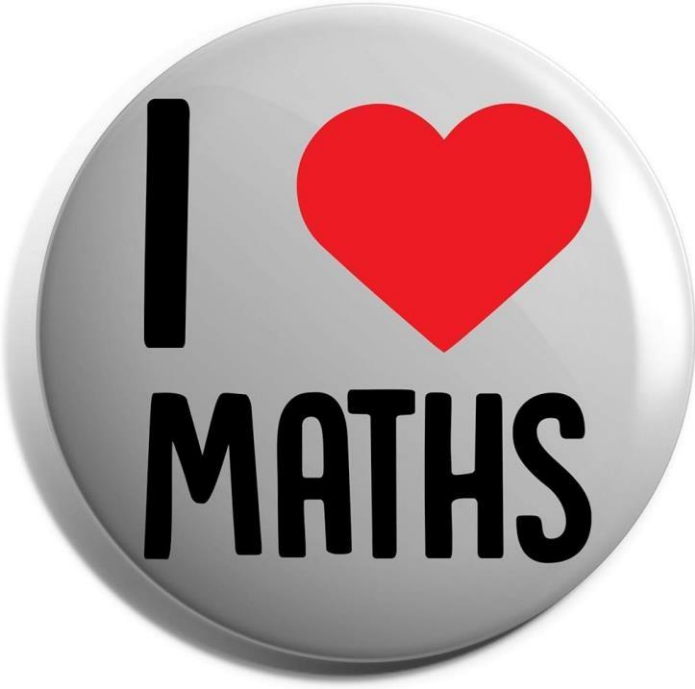






Research also suggests that adults would not openly admit to being poor at reading.

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



Maths Lessons at The Stoke Poges School

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.

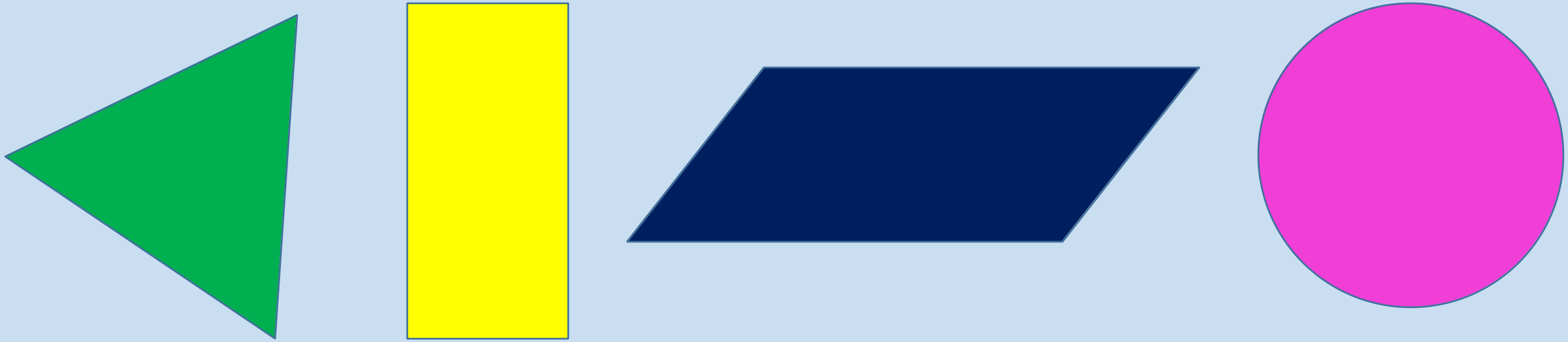
We want to equip the children with the knowledge, understanding, confidence and enthusiasm to be efficient mathematicians.

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**?



Reception

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 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

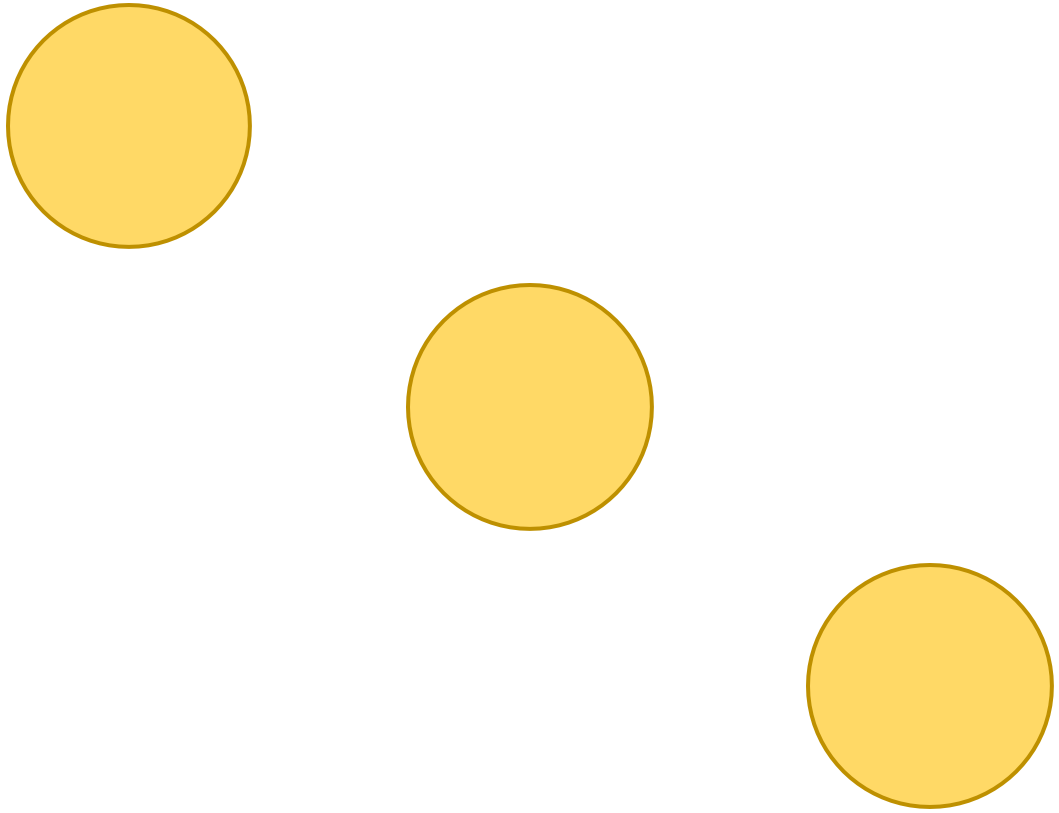
Subitising:
Instantly knowing the number of items in small group without counting

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…



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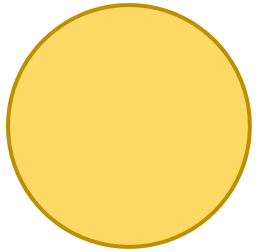

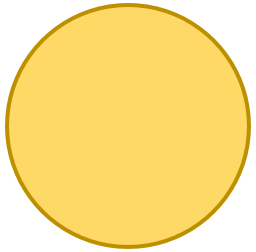

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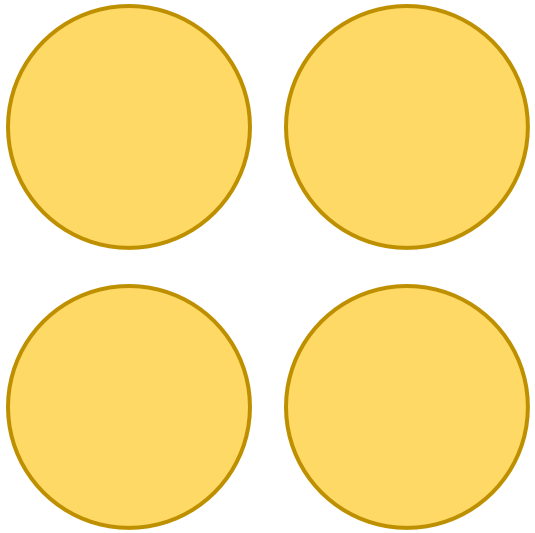

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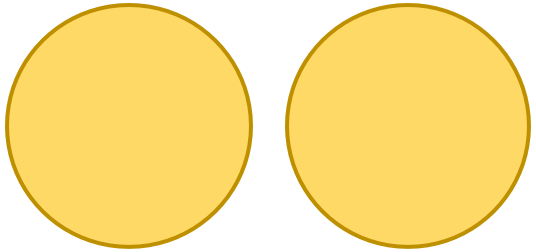

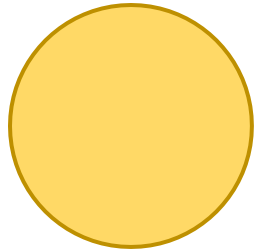

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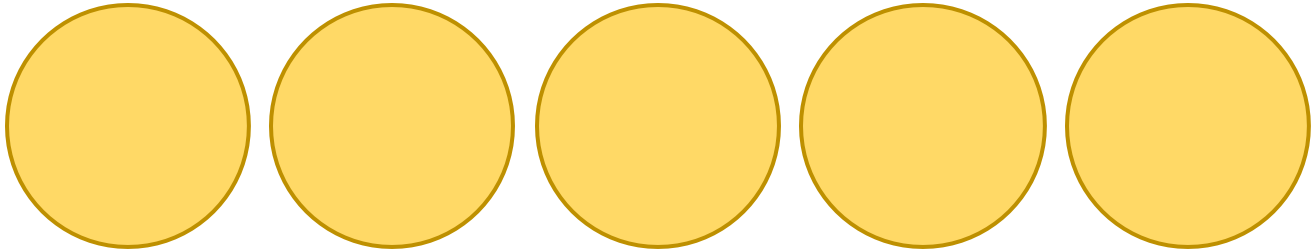

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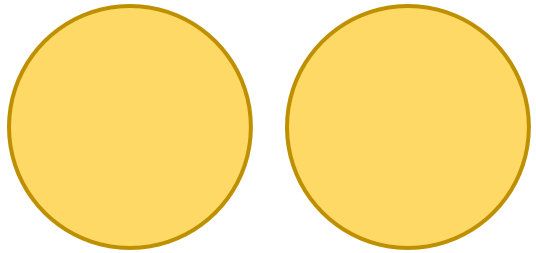

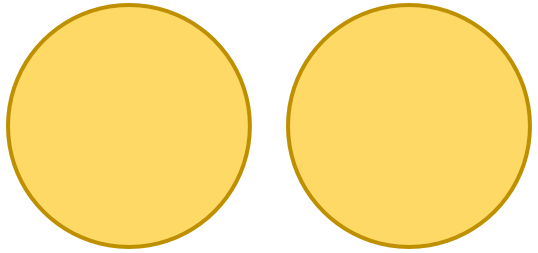

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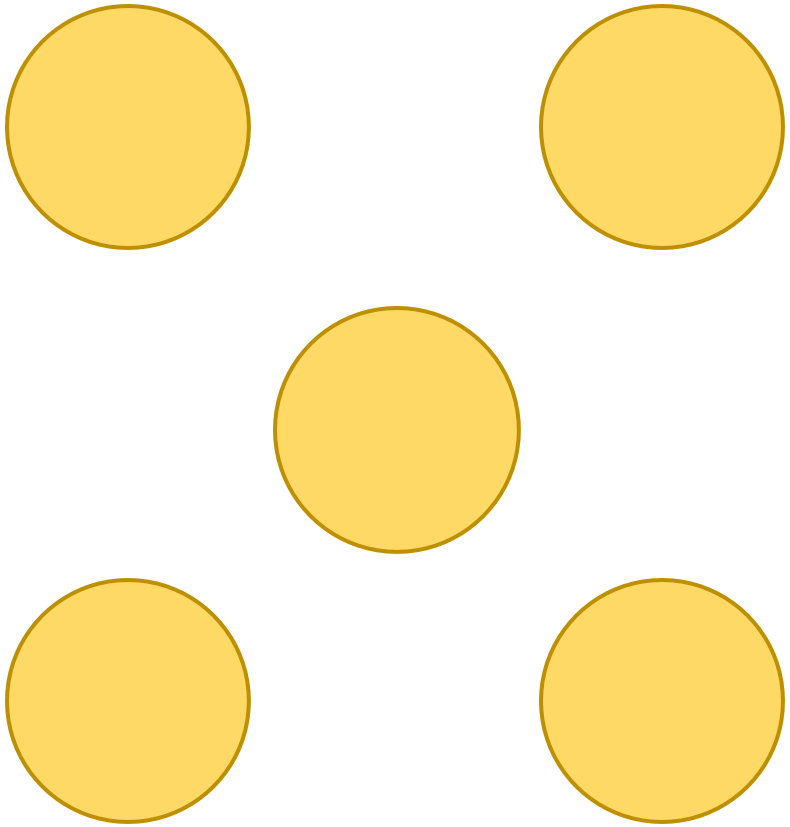

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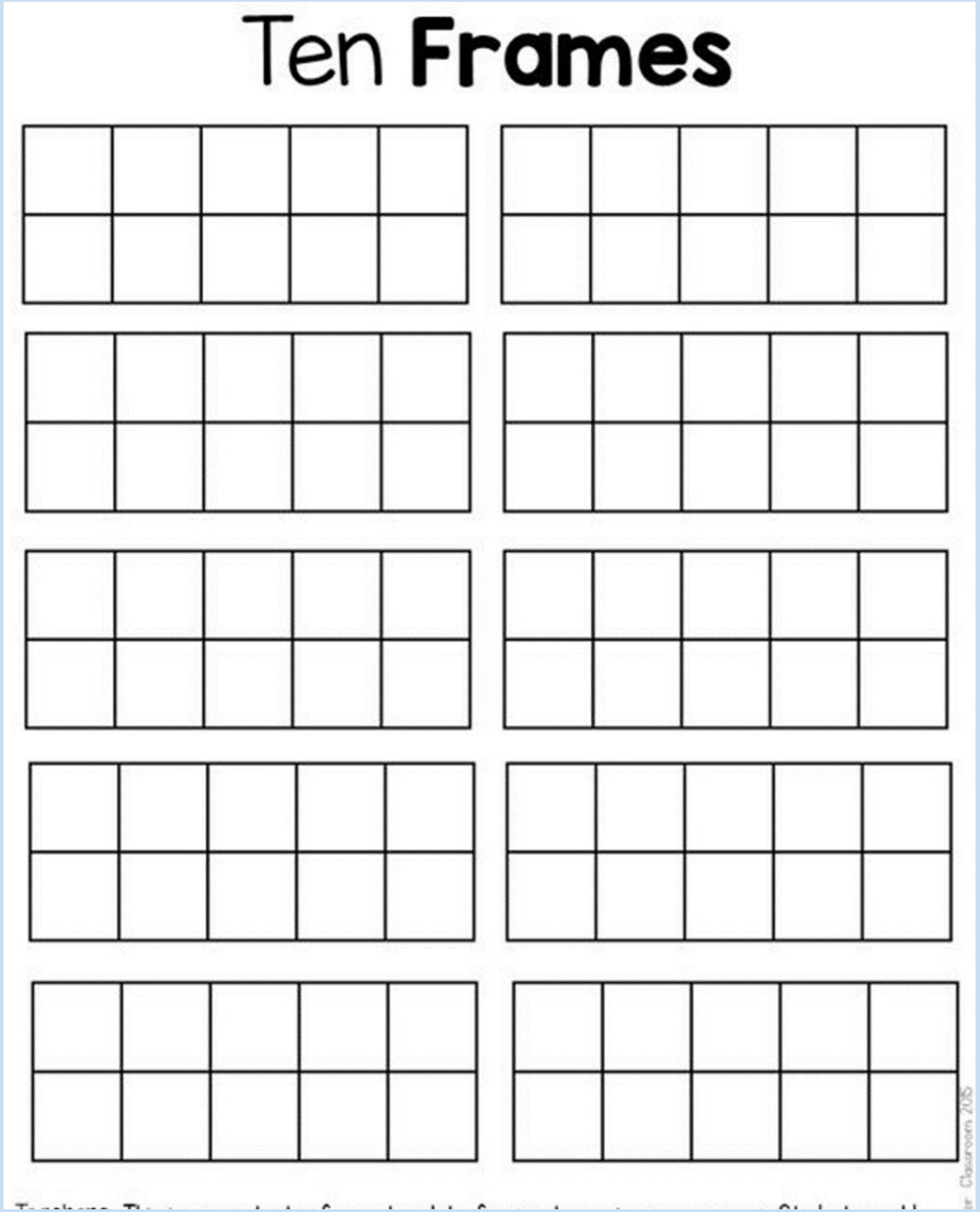
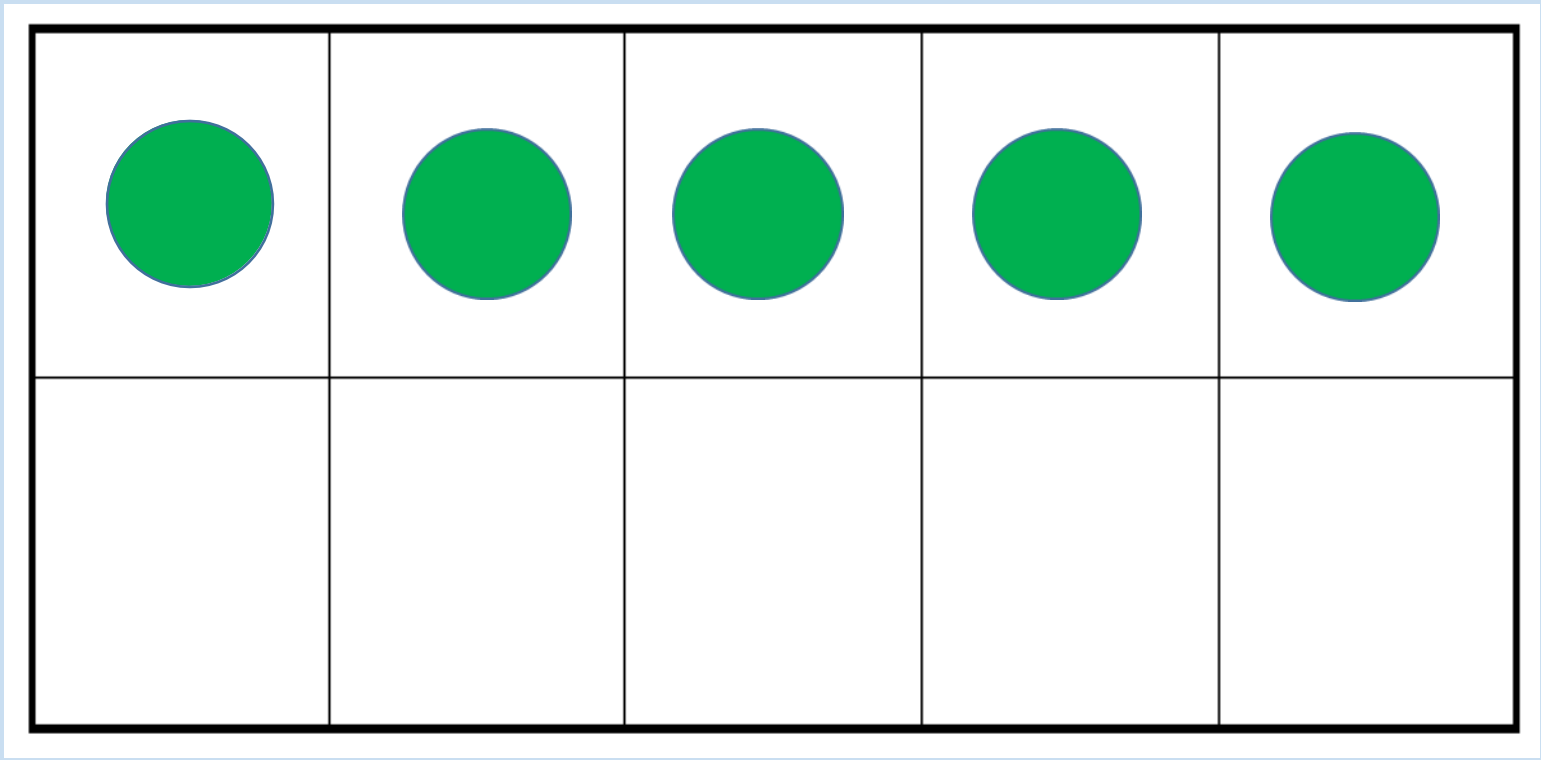
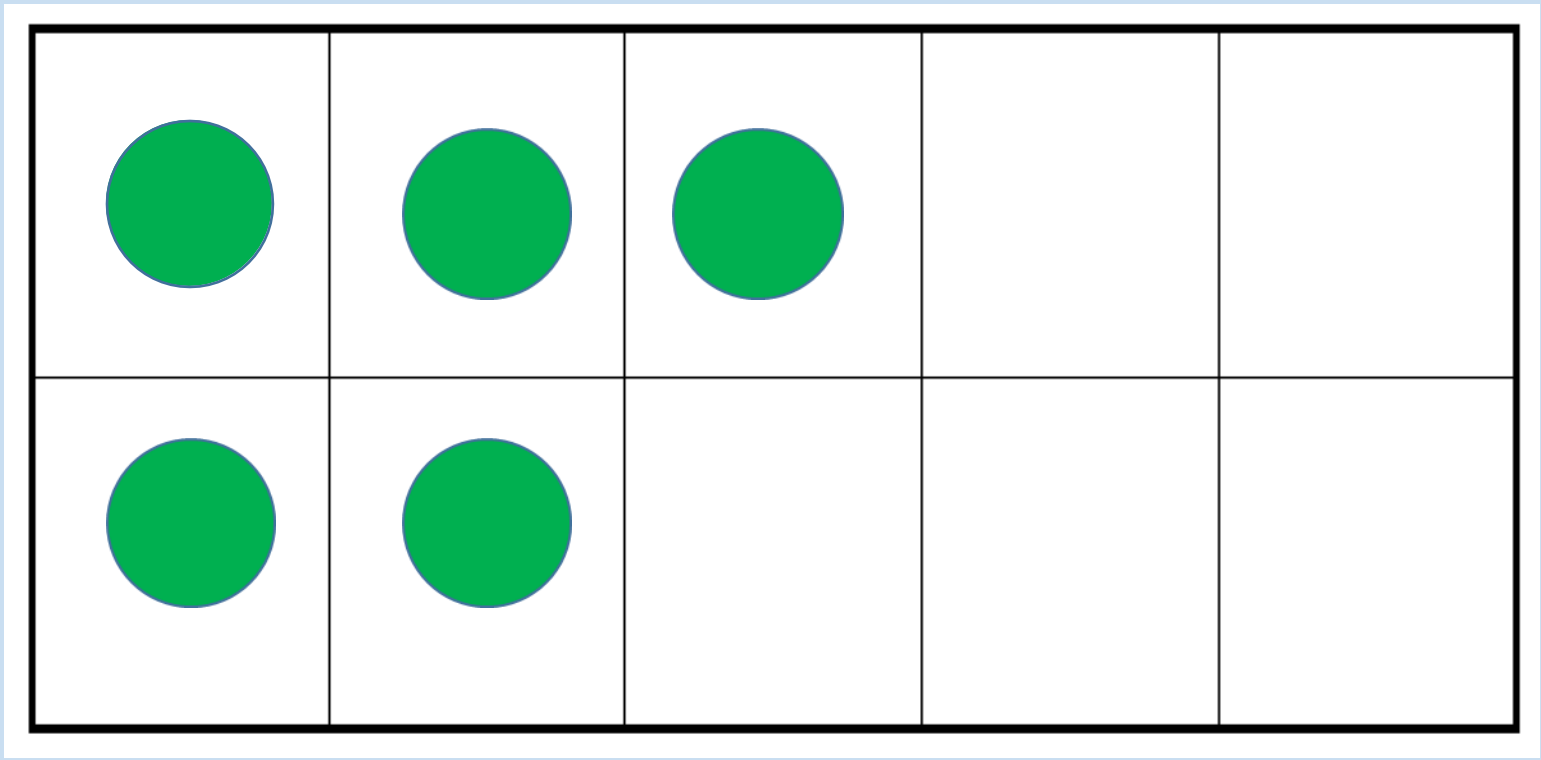
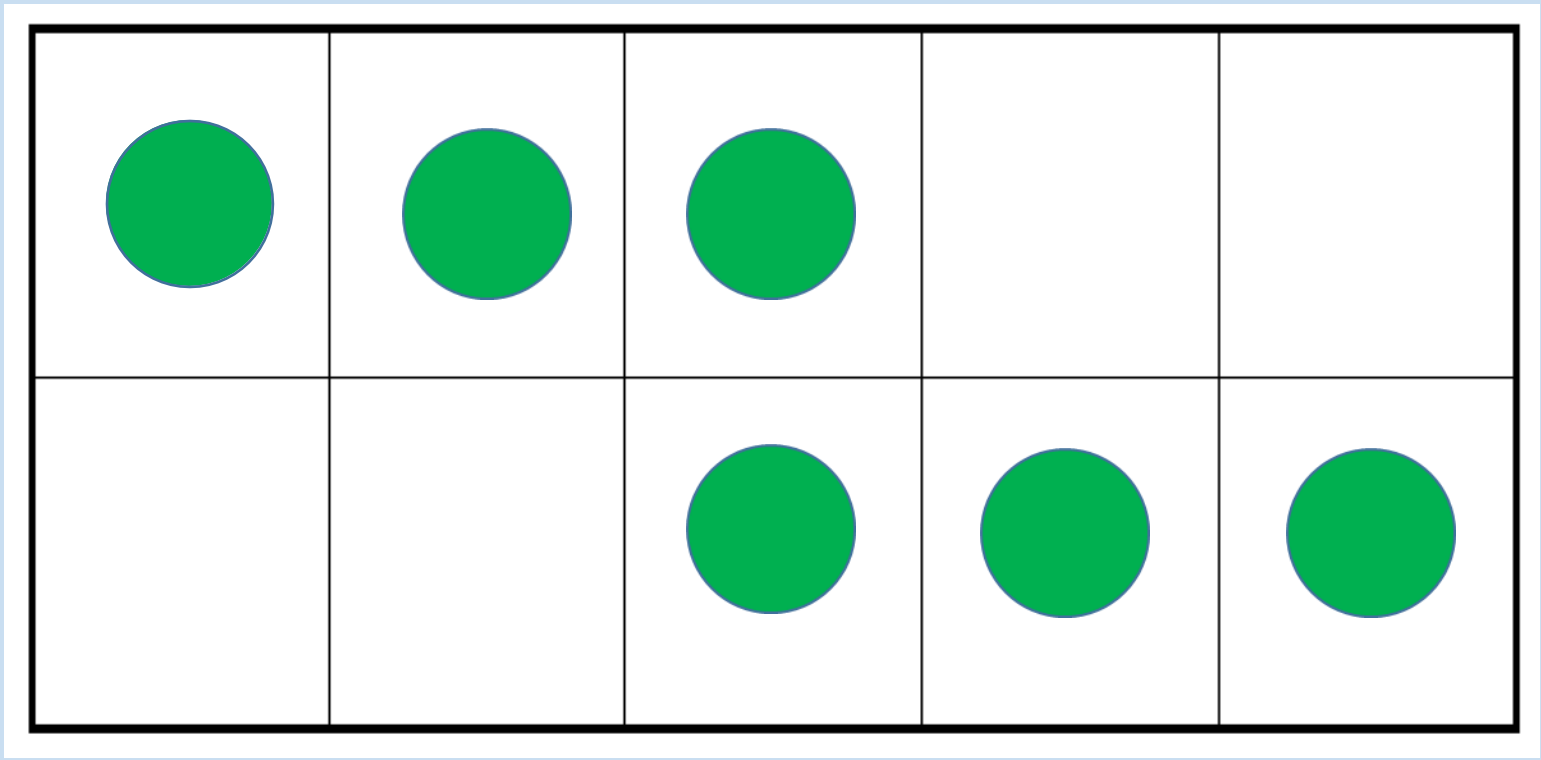
Ten **Frames**

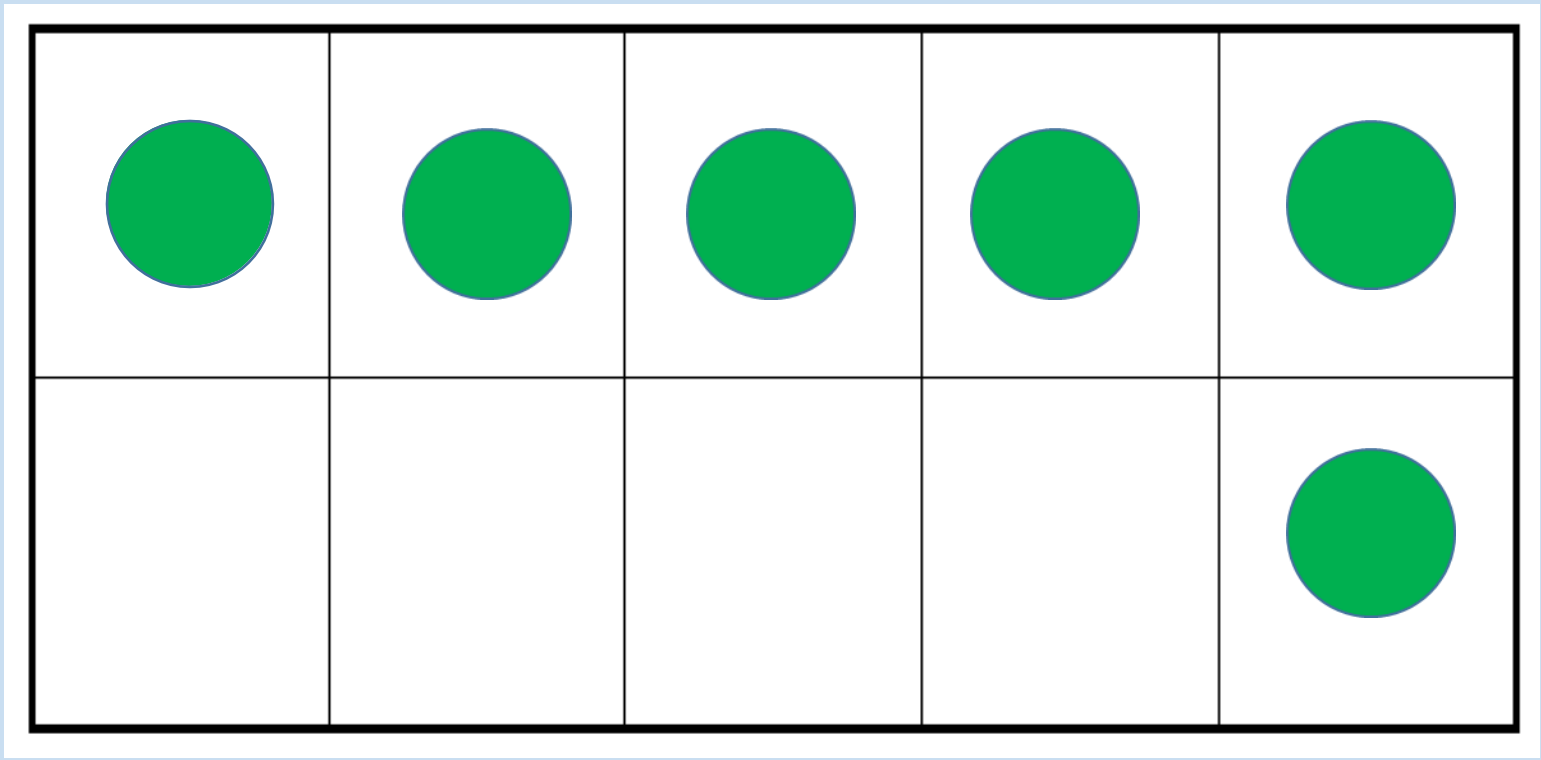


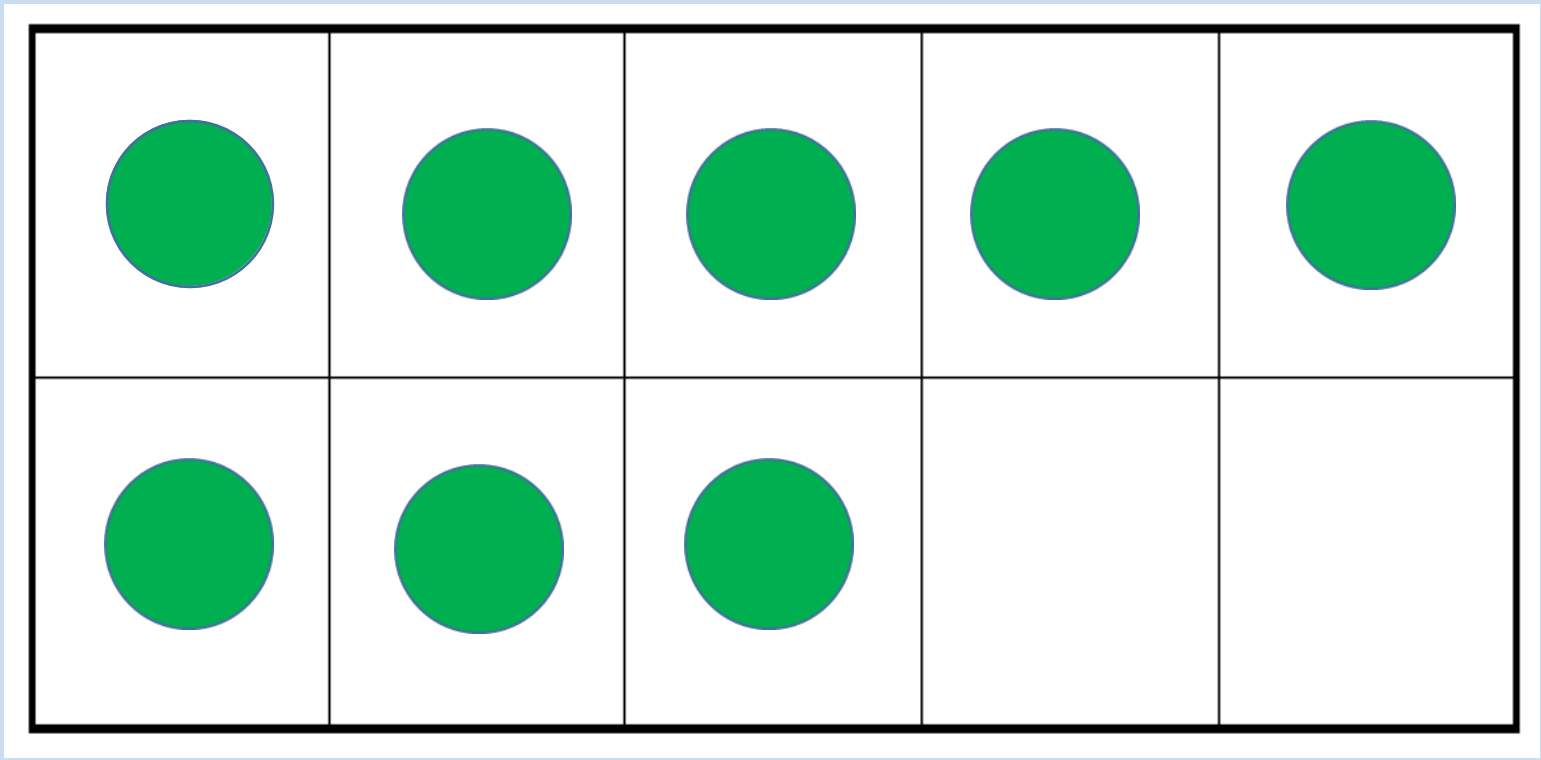
How many?

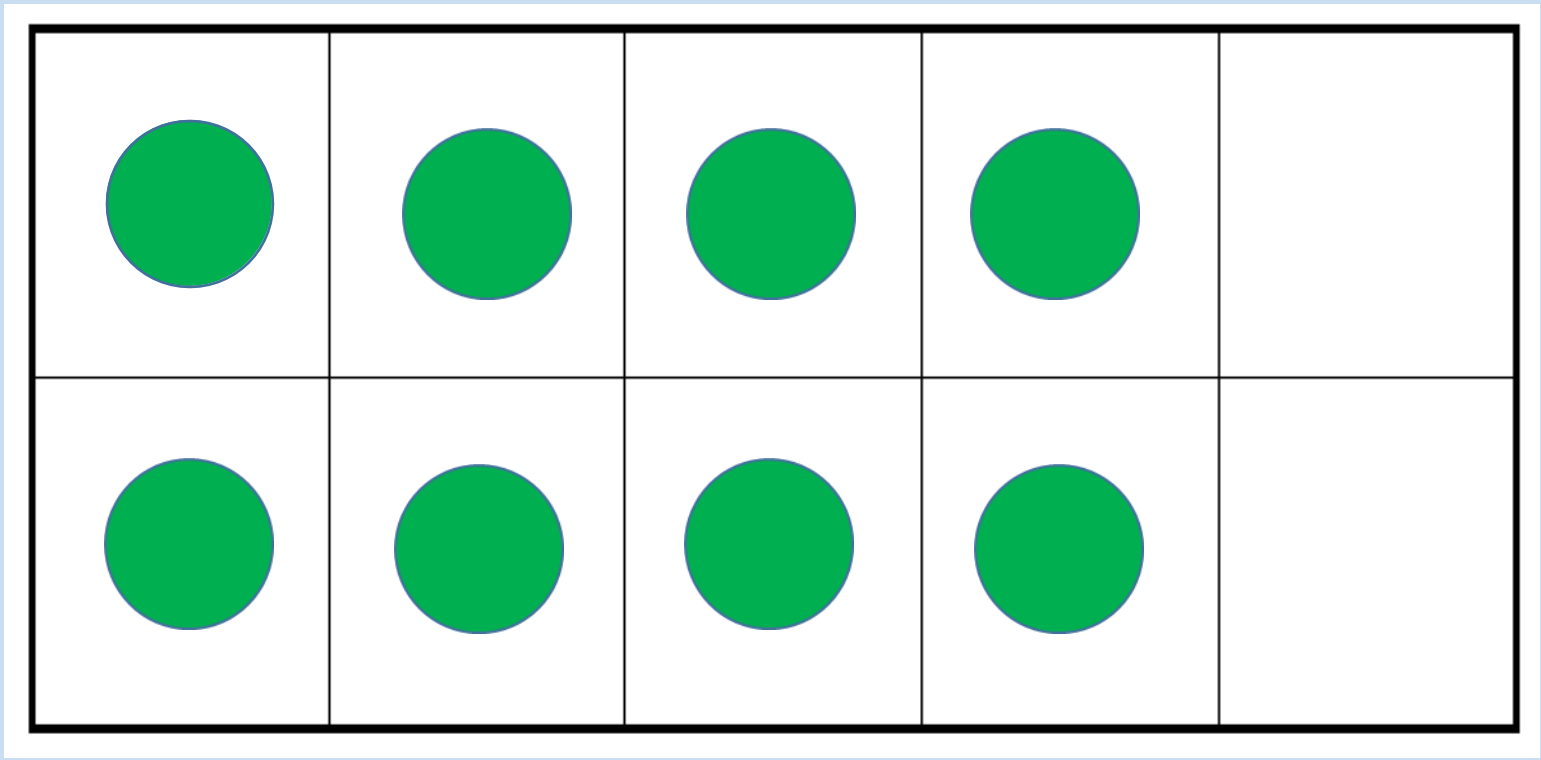












What can you do to help your child to develop secure number sense at home?

Practise subitising at home

Opportunities all around you.

Play games involving dice

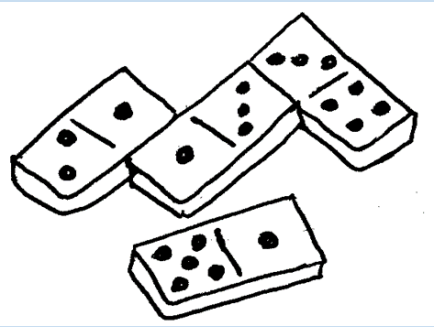
1 minute maths app from White Rose

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:

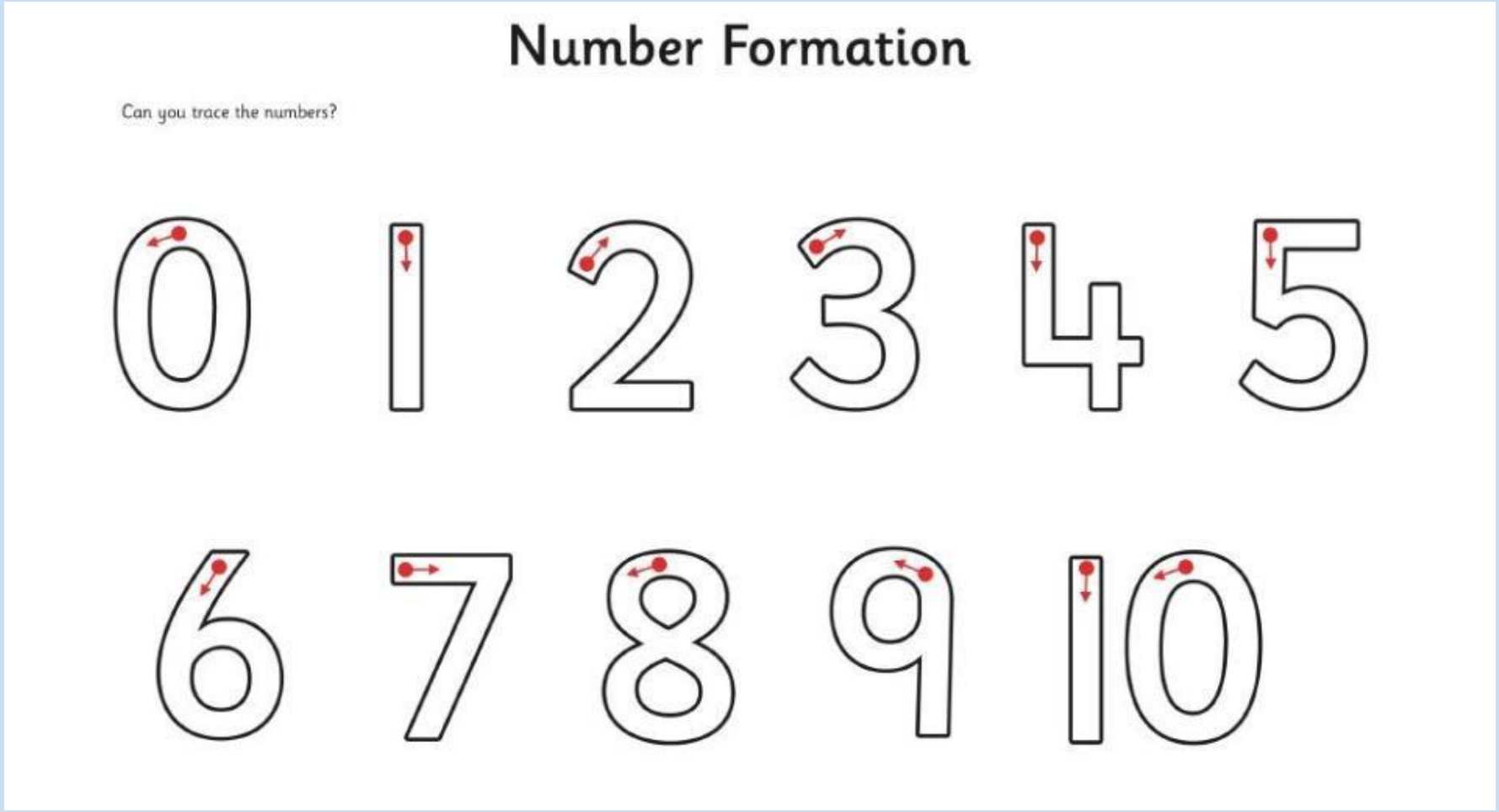
- Look at house numbers, bus numbers, road signs, number plates. What numbers can you see? What's the number before/after?
- Cut food in half/into shapes/share it out.
- Play games using dice/money/dominoes
- Sing songs about numbers
- Talk about the shapes around you – road signs are very useful!



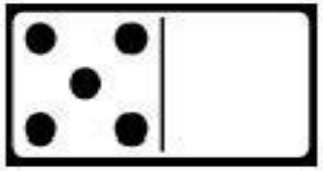
Use the language of comparing and ordering whenever you can.

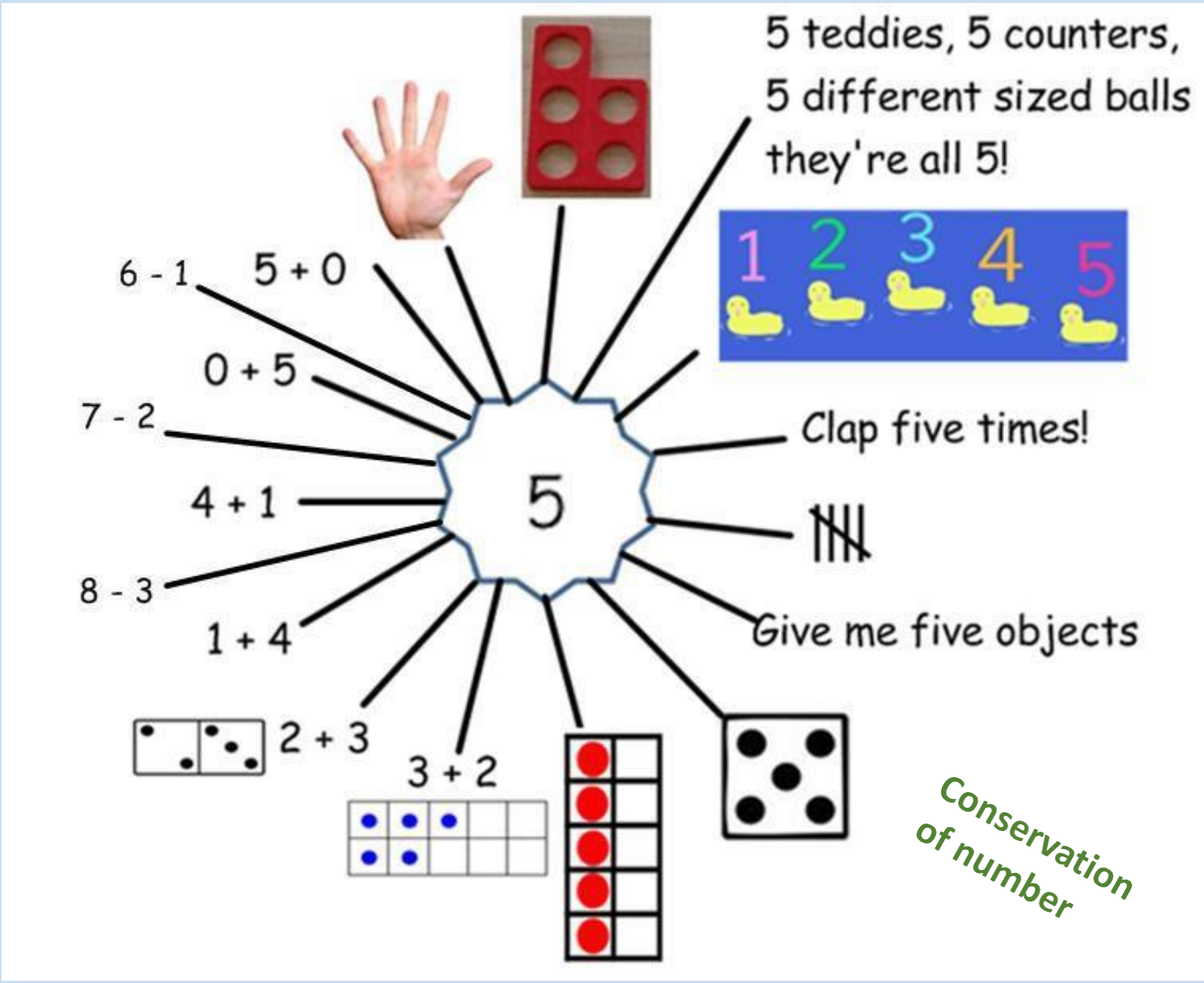
- Which one is heavier?
- Who came first?
- Who has more?
- Which plate has fewer?
- Which animal is smaller/taller?

Practise forming the numbers correctly

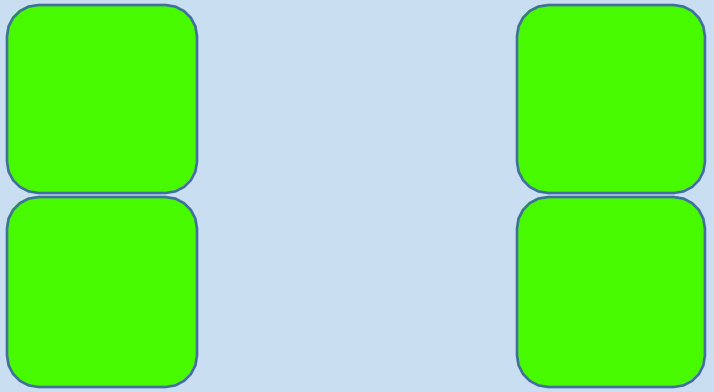


The story of 5



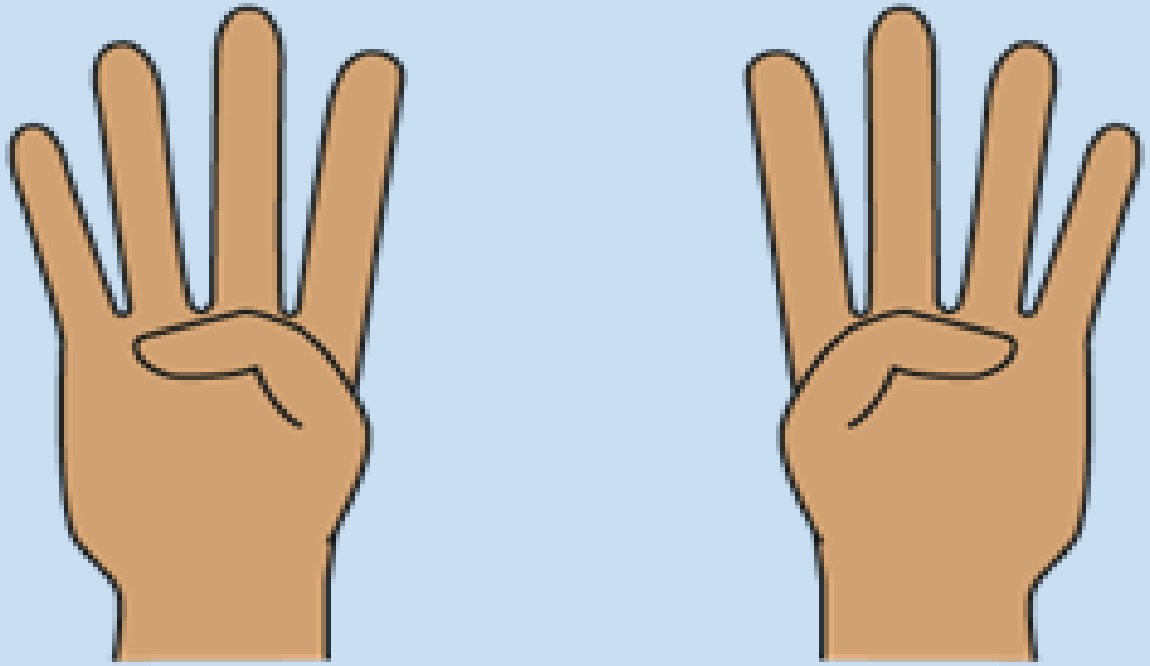

5 teddies, 5 counters,
5 different sized balls
they're all 5!
1 2 3 4 5
Clap five times!
Give me five objects
5
6 - 1
5 + 0
0 + 5
7 - 2
4 + 1
8 - 3
1 + 4
2 + 3
3 + 2
Conservation of number

Stem Sentences…



_____ is made of _____ and _____;
_____ and _____ make _____.

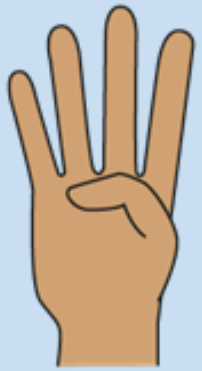
_____ is made of _____ and _____;
_____ and _____ make _____.

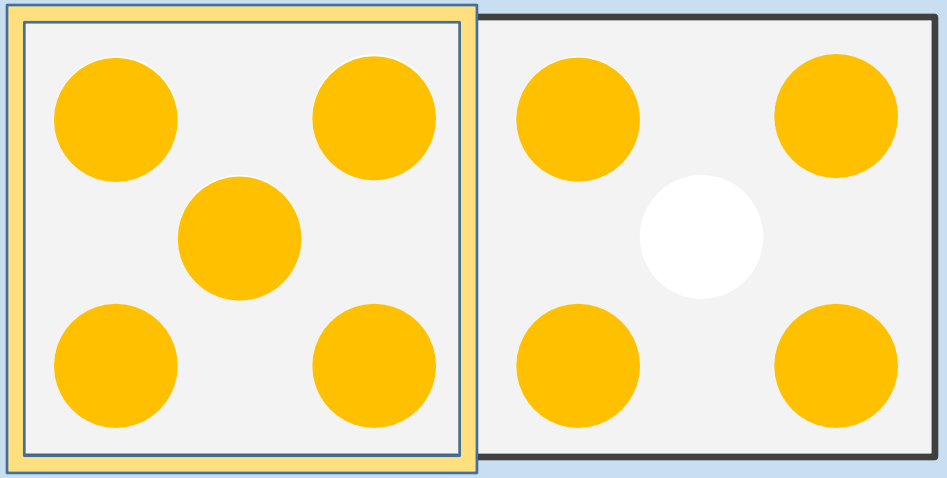


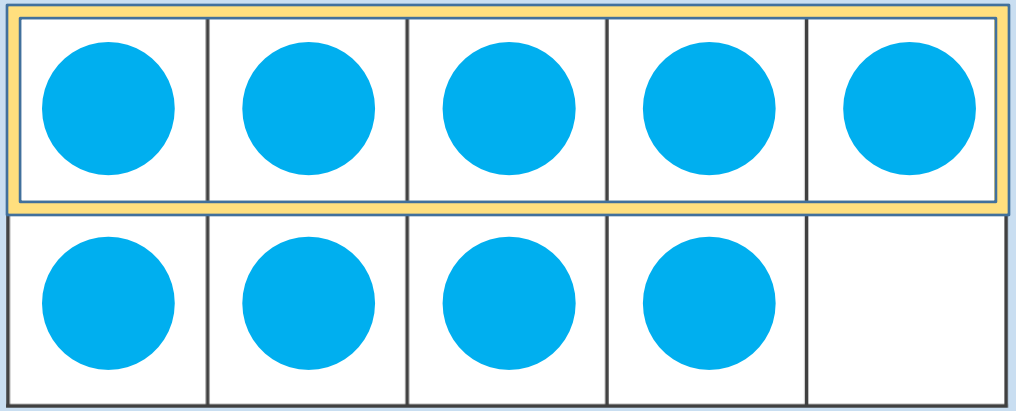
_____ is made of _____ and _____;
_____ and _____ make _____.

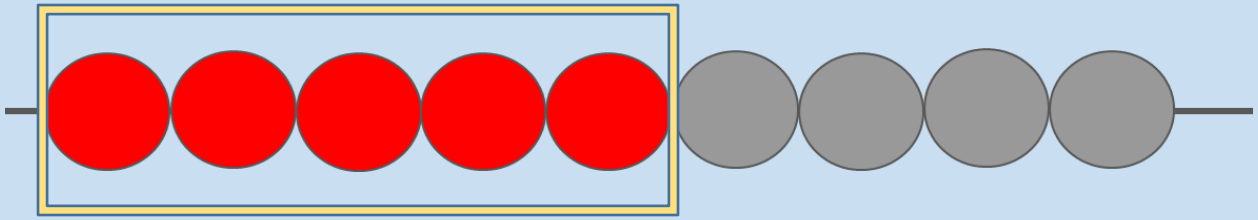
Year 1

Find the 5 in 9



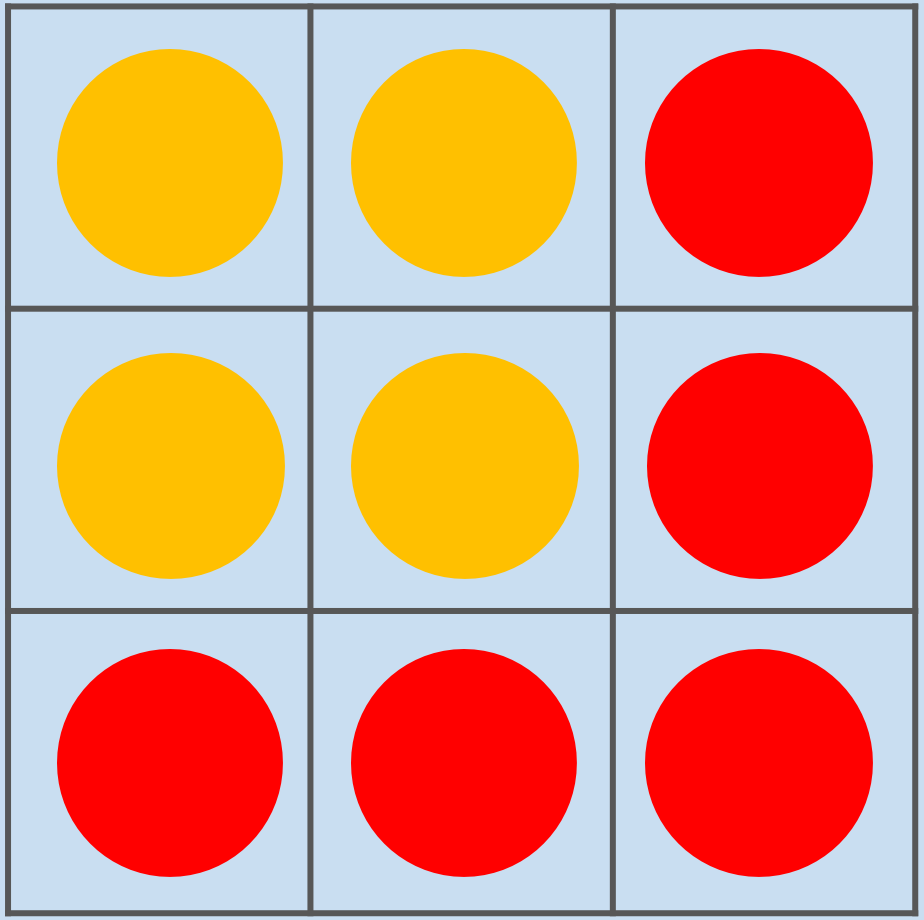


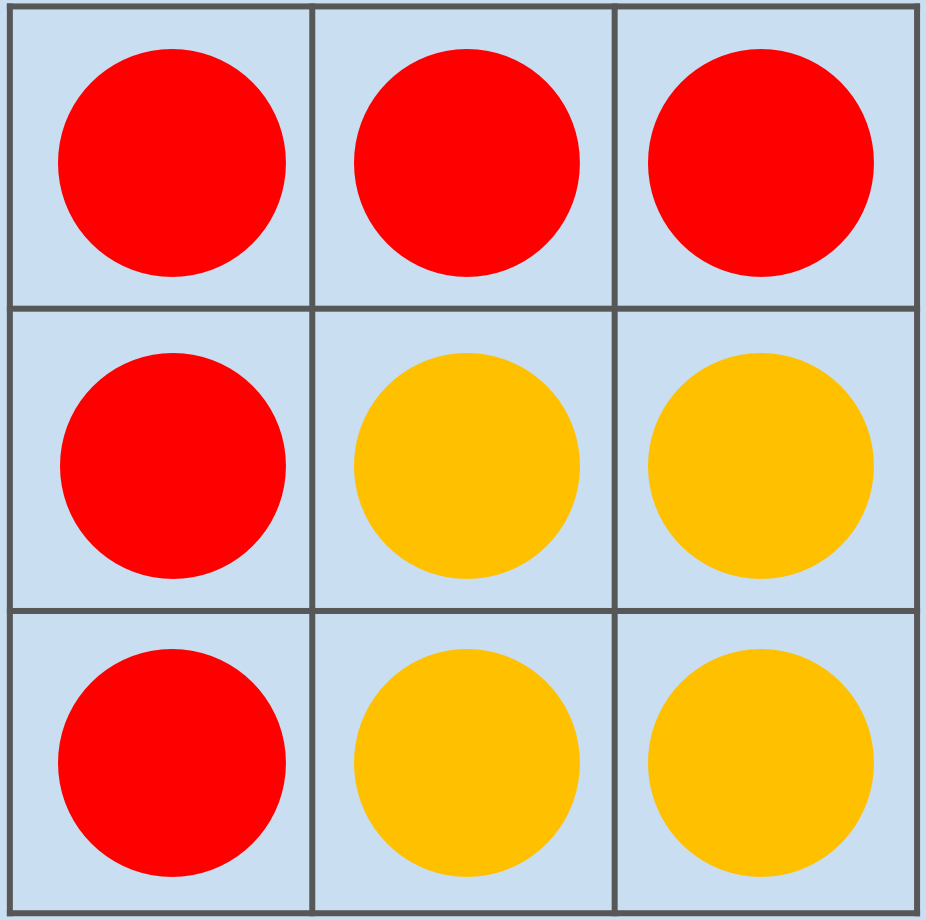




9 is made of 5 and _____;
5 and _____make 9.

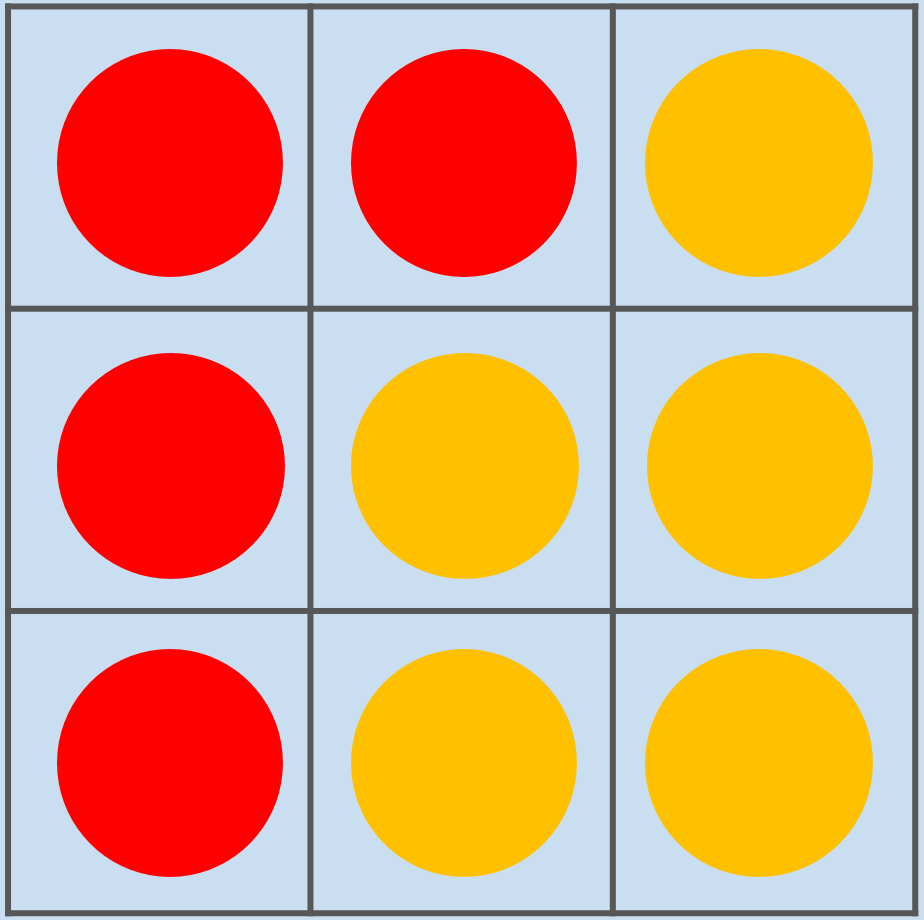
What's the same? What's different?

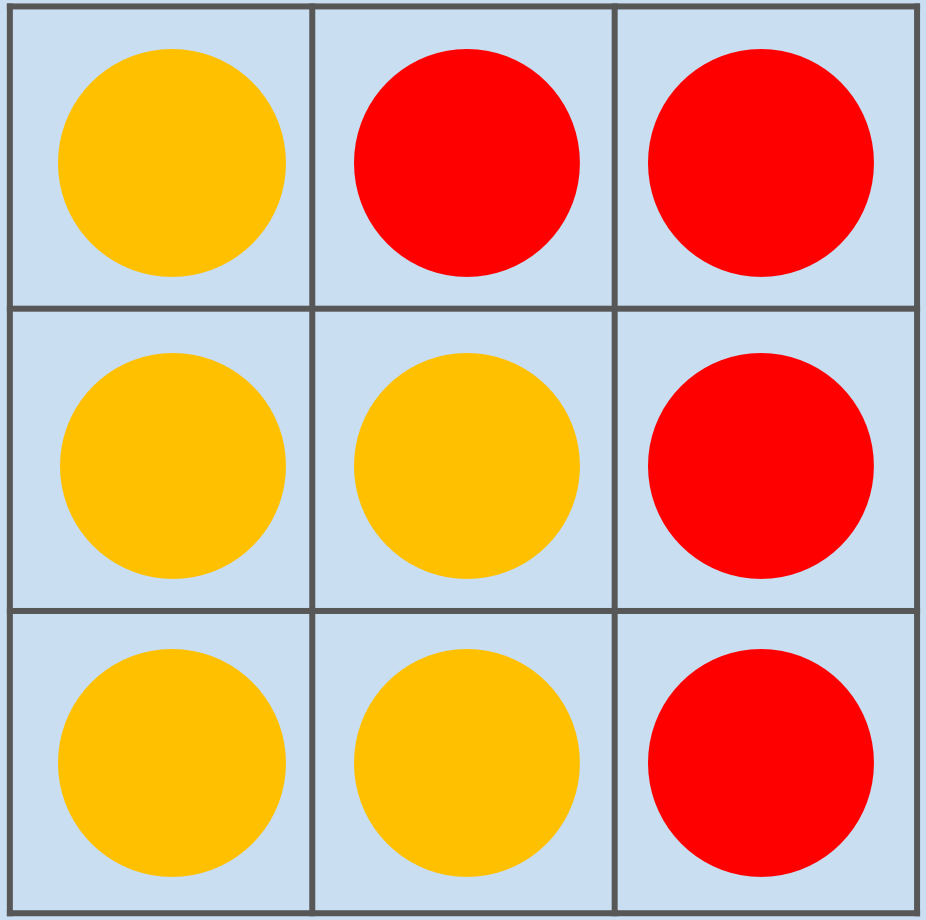




9 is made of _____ and _____;
_____ and _____ make 9.

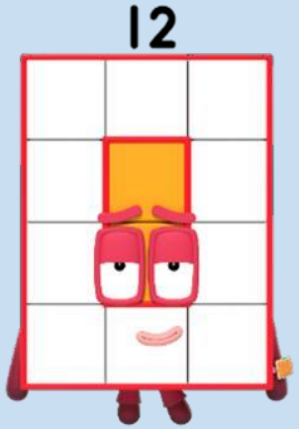
What's the same? What's different?

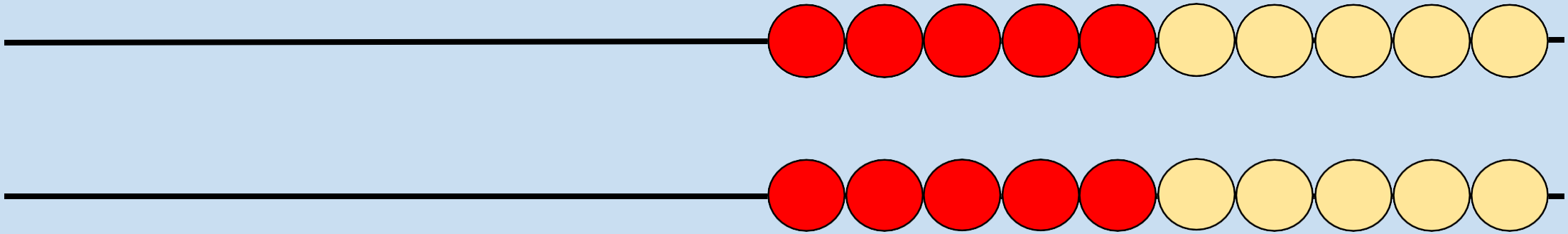




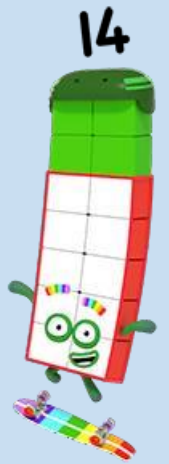
9 is made of _____ and _____;
_____ and _____ make 9.

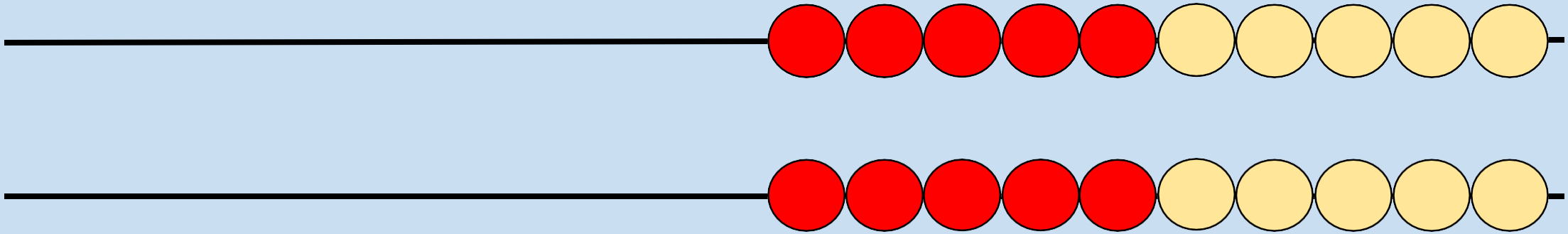
Year 2





10 needs _____to make _____;
_____is made of 10 and _____.





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.

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.

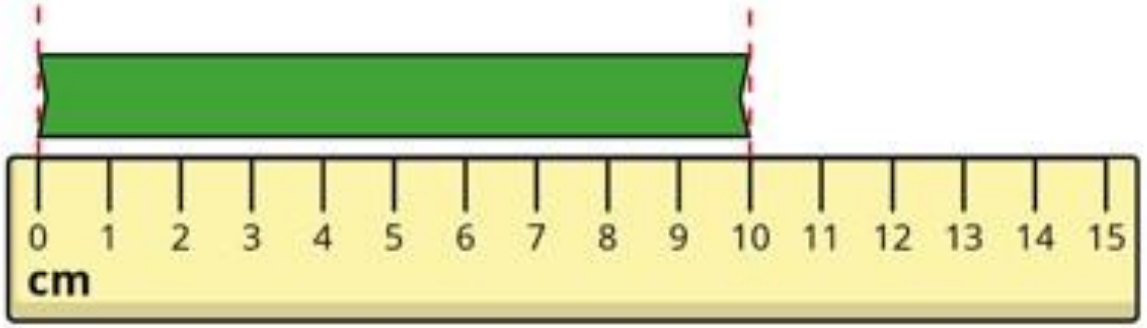
Half an even number is a whole number

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

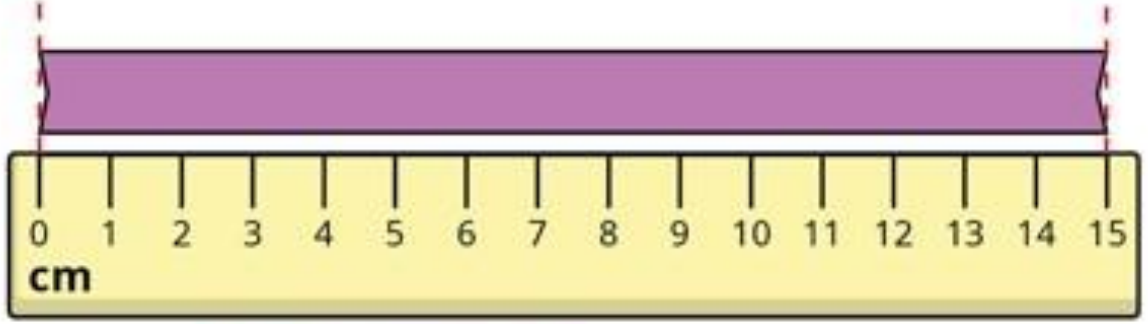
Y1

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

Jo



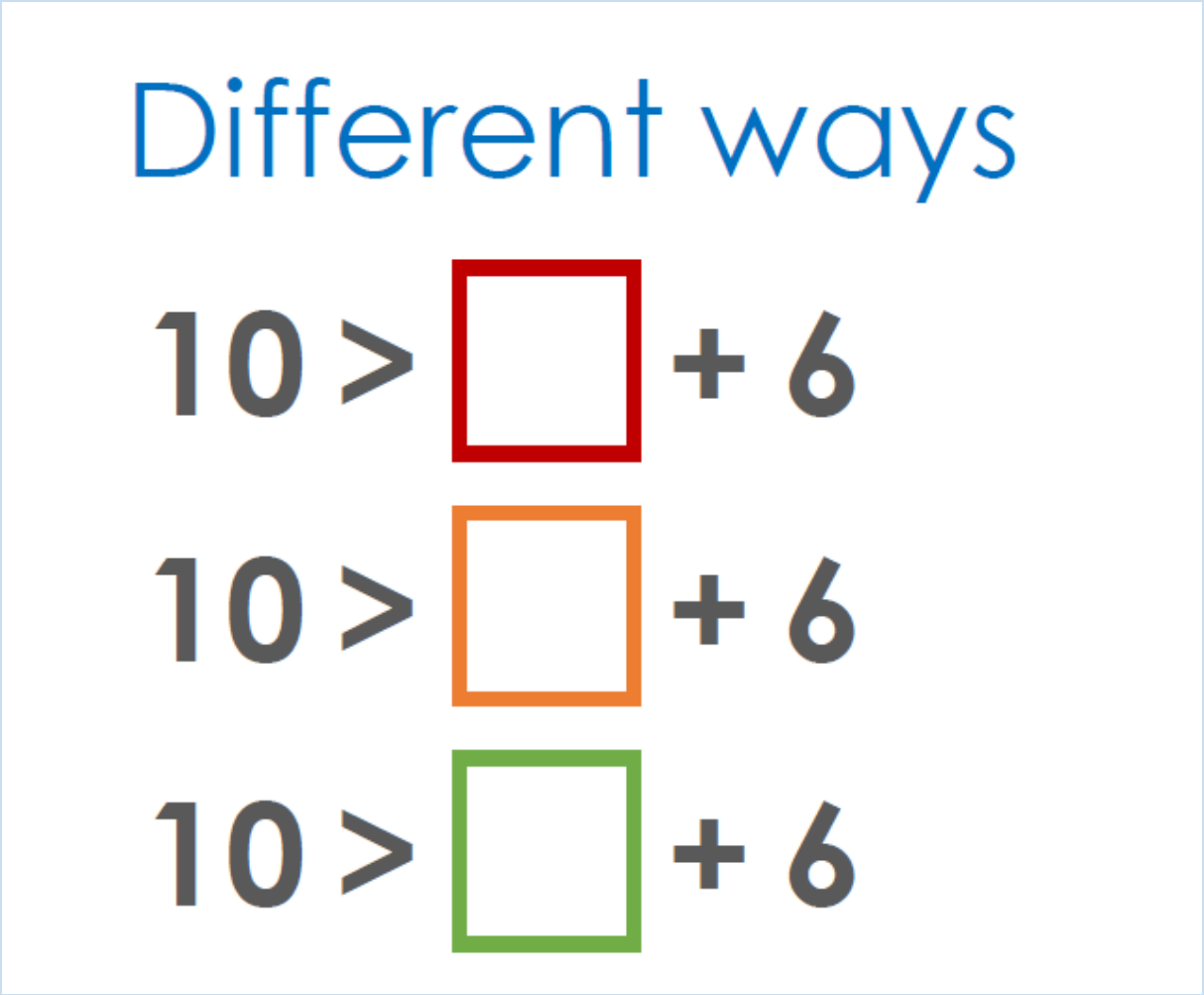
Max



Sam

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

How long could Sam's ribbon be?



How many different ways are there?

- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions
- Measurement
- Geometry
- Statistics (from Year 2)

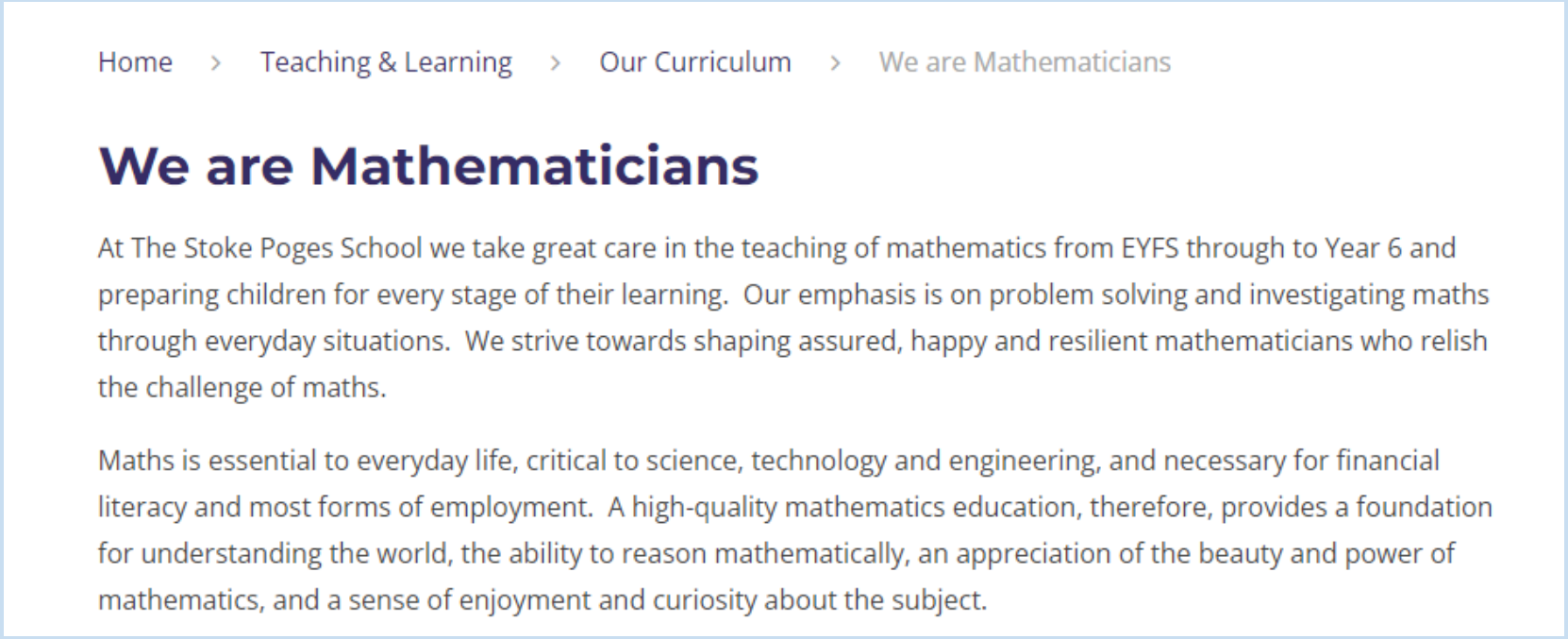
Year 1

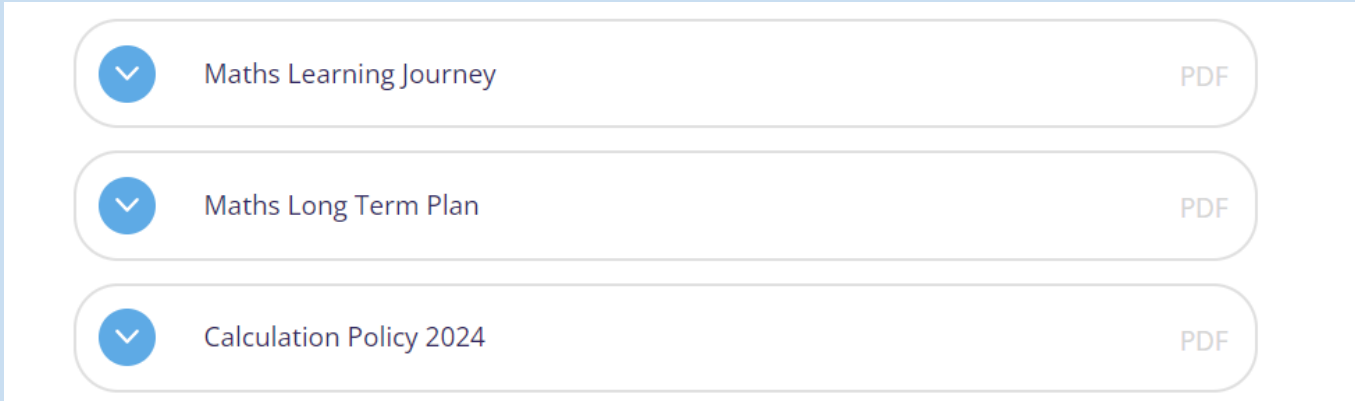
- Read and write numerals to at least 100 in numerals and in words
- Find one more or less than any number
- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=)
- Recognise, find, name and write simple fractions of a length, shape, set of objects or 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

More information about our mathematics curriculum



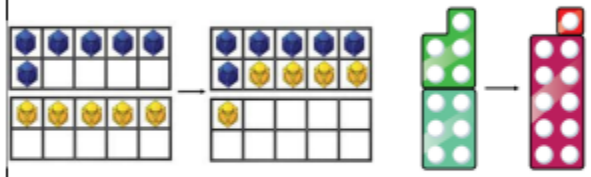
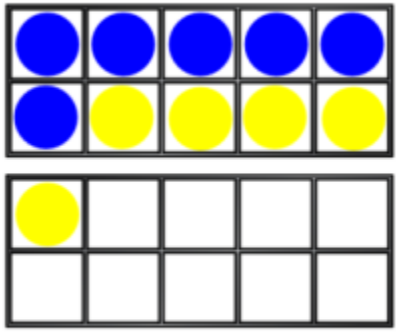
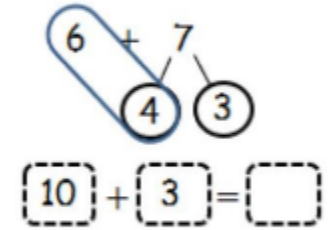
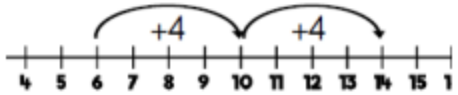
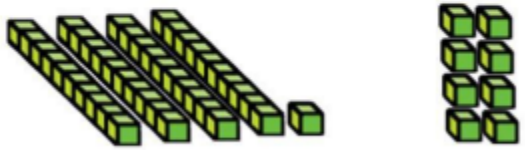
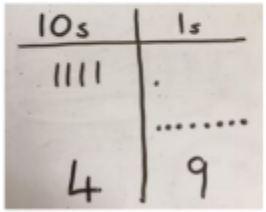
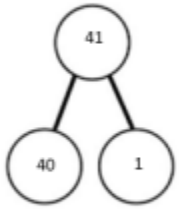


THE STOKE POGES SCHOOL Maths Learning Journey – Number and Place Value

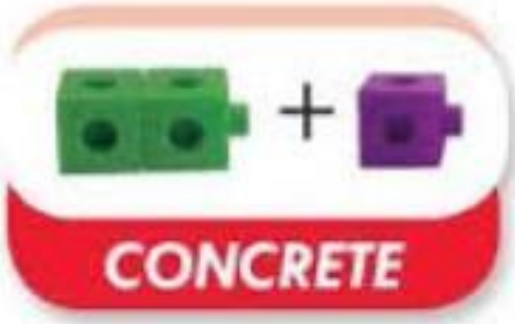
	Number and Place Value	Progression Statements
Year 1	**Pupils should be taught to:** • count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens • given a number, identify 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.	**Number and Place Value** • I can count to and across 100, forwards and backwards, beginning with 0 or one, or from any given number • I can read and write numbers from 1 to 20 in numerals and words • I can count, read and write numbers to 100 in numerals • I can count in different multiples, including ones, twos, fives and tens • I can identify one more or one less than a given number • I can use the language of equal to, more than, less than (fewer), most and least • I can identify and represent numbers using objects and pictorial representations, including the number line
	Non-statutory guidance Pupils practise counting (1, 2, 3…), ordering (for example, first, second, third…), and to indicate a quantity (for example, 3 apples, 2 centimetres), including solving simple concrete problems, until they are fluent. Pupils begin to recognise place value in numbers beyond 20 by reading, writing, counting and comparing numbers up to 100, supported by objects and pictorial representations. They practise counting as reciting numbers and counting as enumerating objects, and counting in twos, fives and tens from different multiples to develop their recognition of patterns in the number system (for example, odd and even numbers), including varied and frequent practice through increasingly complex questions. They recognise and create repeating patterns with objects and with shapes.	
Year 2	**Pupils should be taught to:** • 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 and in words • use place value and number facts to solve problems.	**Number and Place Value** • I can count in steps of 2, 3 and 5 from 0, forwards and backwards • I can count in tens from any number, forwards and backwards • I partition 2-digit numbers into different combinations of tens and ones. This may include using apparatus • I can identify, represent and estimate numbers using different representations, including the number line • I can compare and order numbers from 0 up to 100, using <, > and = sign • I can read and write numbers to at least 100 in numerals and words • I can use place value and number facts to solve problems
	Non-statutory guidance Using materials and a range of representations, pupils practise counting, reading, writing and comparing numbers to at least 100 and solving a variety of related problems to develop fluency. They count in multiples of three to support their later understanding of a third. As they become more confident with numbers up to 100, pupils are introduced to larger numbers to develop further their recognition of patterns within the number system and represent them in different ways, including spatial representations. Pupils should partition numbers in different ways (for example, 23 = 20 + 3 and 23 = 10 + 13) to support subtraction. They become fluent and apply their knowledge of numbers to reason with, discuss and solve problems that emphasise the value of each digit in two-digit numbers. They begin to understand zero as a place holder.	

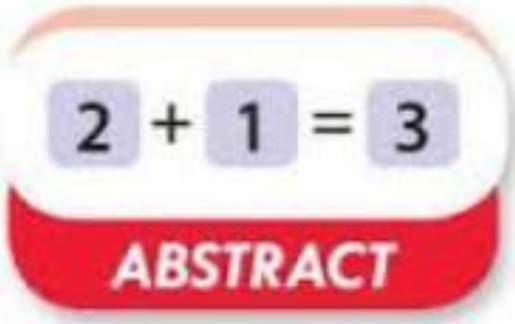
THE STOKE POGES SCHOOL Maths Long Term Plan (NC Statements)

	Autumn Term	Spring Term	Summer Term
Year 1	**Number and place value** • 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 • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of equal to, more than, less than, most and least. • Identify one more and one less than a given number. **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 0. • Solve one-step problems that involve addition and subtraction, using concrete objects and pictoral representations. **Properties of shape** • Recognise and name common 2-D shapes, for example, rectangles (including squares), circles and triangles • Recognise and name common 3-D shapes, for example, cuboids (including cubes), pyramids and spheres.	**Number and place value** • 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 • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of equal to, more than, less than, most and least. • Identify one more and one less than a given number. **Addition and subtraction** • Read, write and interpret mathematical statements involving addition, subtraction and equals signs. • 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 **Measurement (time)** • Measure and begin to record time (hours, minutes, seconds) • Compare, describe and solve practical problems for time (quicker, slower, earlier and later) • Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	**Number and place value** • Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens • Read and write numbers from 1 to 20 in numerals and words. **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 • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? – 9 **Measurement (money)** • Recognise and know the value of different denominations of coins and notes **Multiplication and division** • Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. **Fractions** • Recognise, find and name a half as one of two equal parts of an object, shape or quantity • Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity

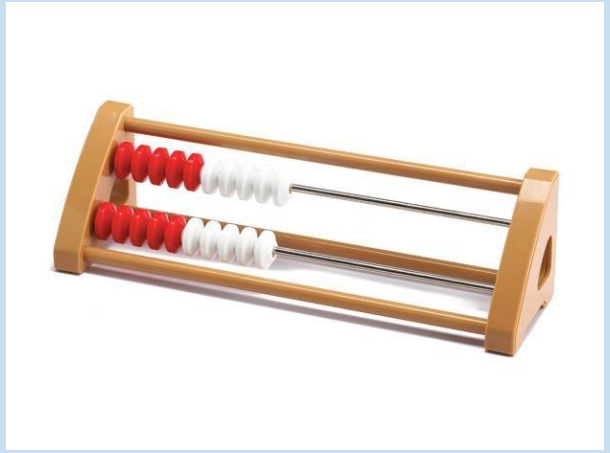
Year 1 **Adding numbers within 20**	**Regrouping to make 10**; using ten frames and counters/ cubes or using Numicon. 6+5 	Children to draw the ten frame and counters/cubes. 	Children to show how they regrouped to make 10. Working out could include the following methods: *Example: 6 + 7 = 13*  *Example: 6 + 8 = 14* 
Year 2 **Adding a 2-digit number and a 1-digit number**	**TO + O using base 10 (or other appropriate resources)**. Continue to develop understanding of partitioning and place value. 41 + 8. This could be completed using dienes, counters or other appropriate resources. 	Children to represent the base 10 e.g. lines for ten and dot/crosses for ones. Reinforce the understanding of place value with this method by encouraging the children to express how many tens they have and how any ones.  	Children to use regrouping, or a written method to add.  41 + 8 1 + 8 = 9 40 + 9 = 49

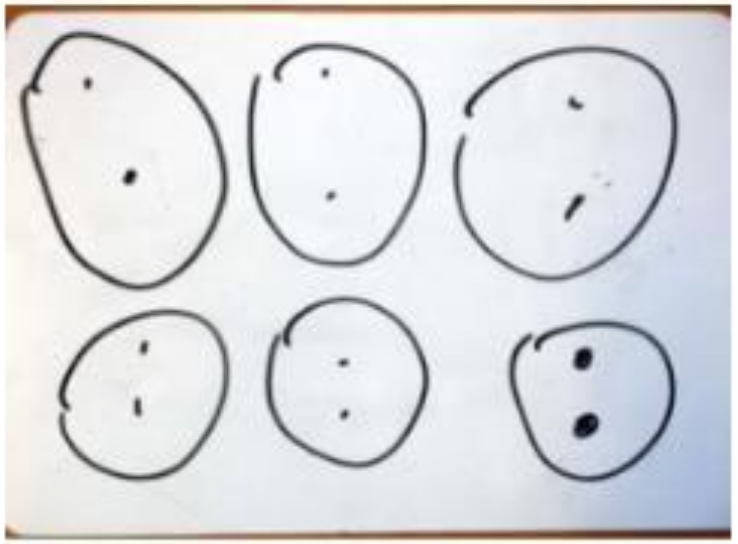
concrete pictorial abstract

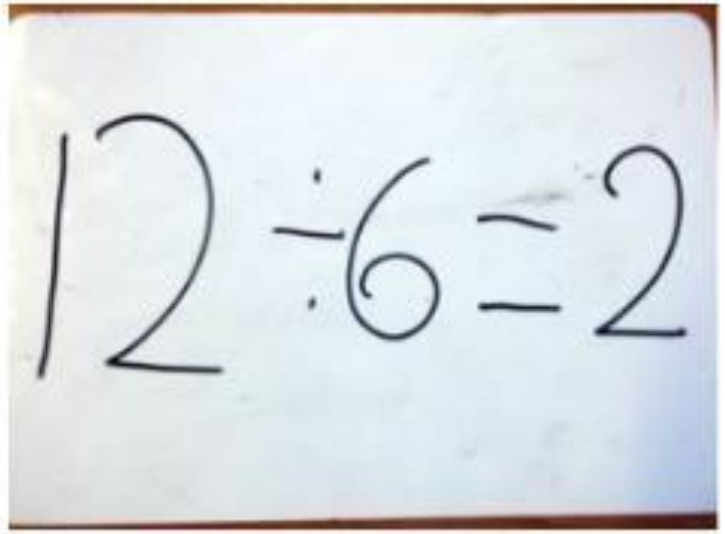




Concrete Resources






12 ÷ 6 = 2

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

Practise the number bonds to 10

0 + 10

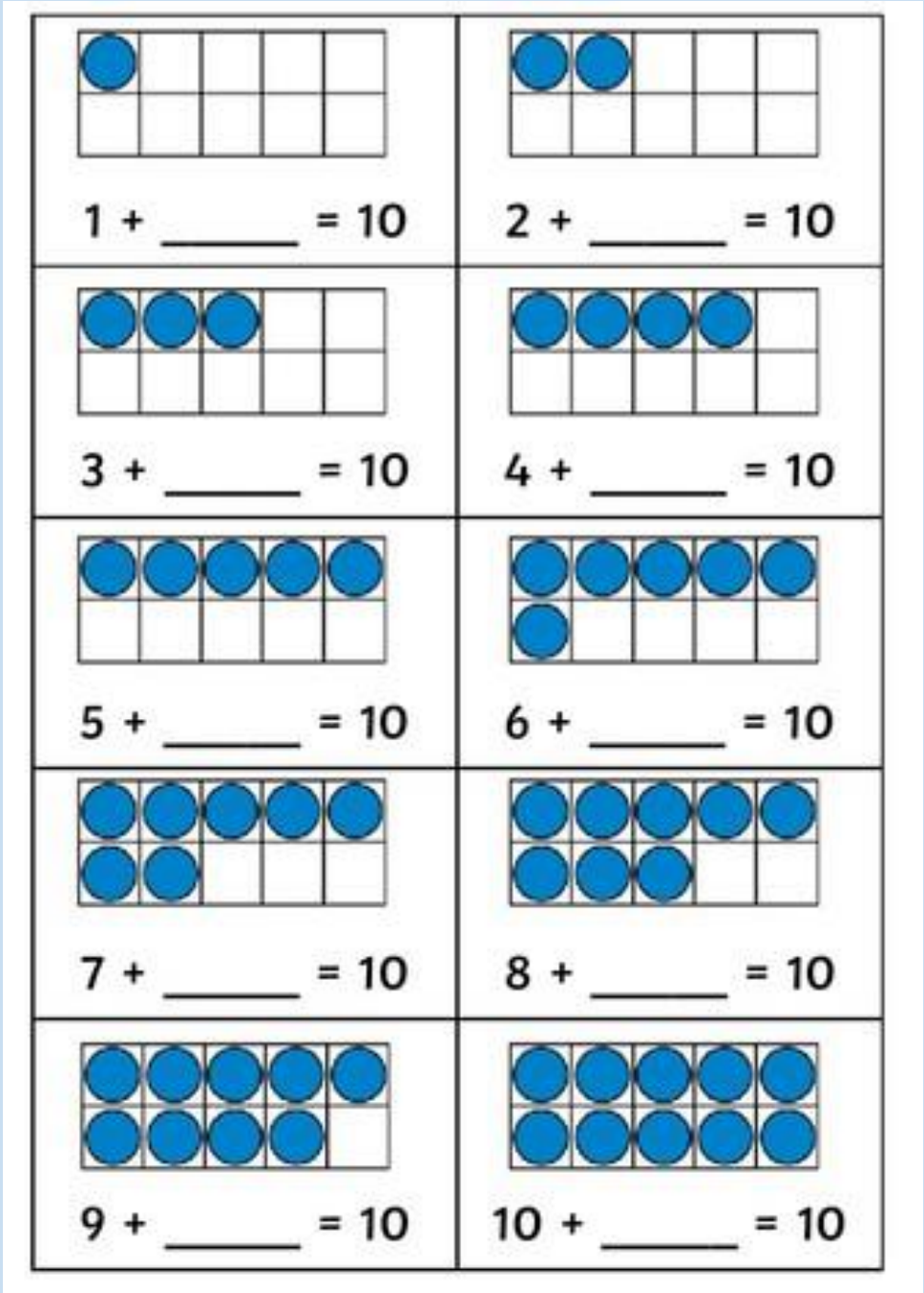
1 + 9

2 + 8

3 + 7

4 + 6

5 + 5



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

36 + ___ = 40

62 + ___ = 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. that will support your child in KS2

0 + 100
10 + 90
20 + 80
30 + 70
40 + 60
50 + 50

0 + 1000
100 + 900
200 + 800
300 + 700
400 + 600
500 + 500

0 + 1.0
0.1 + 0.9
0.2 + 0.8
0.3 + 0.7
0.4 + 0.6
0.5 + 0.5

Play games showing numbers of fingers…

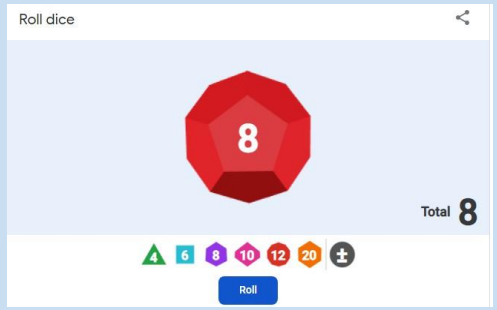
Hold up some fingers for your partner.

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)?

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

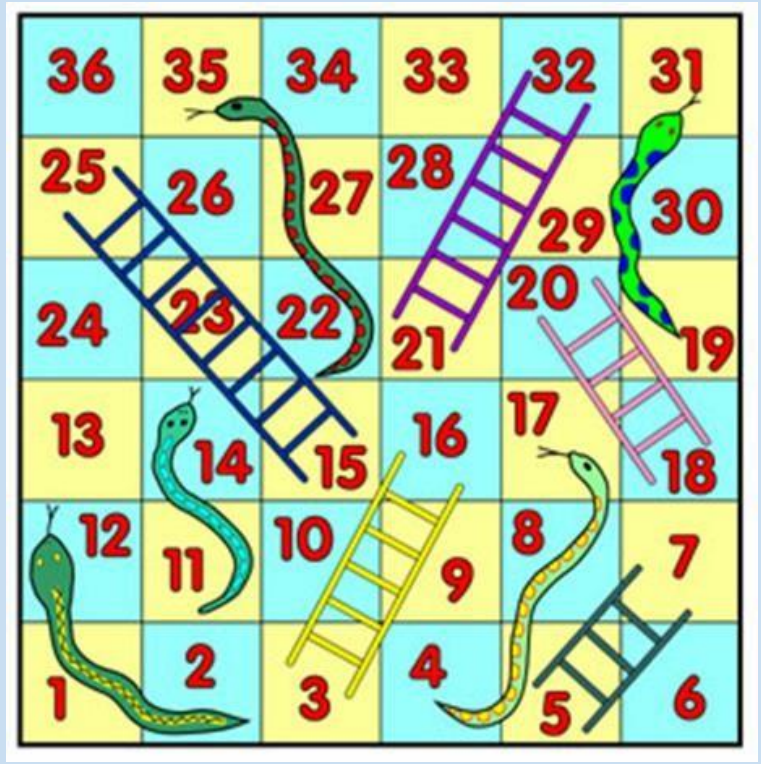
- Remove picture cards (you can add them back in later to make things more challenging!)
- Decide on a rule e.g. Double/partner to 10…
- Turn over top card
- First person to say the correct answer wins the card

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

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

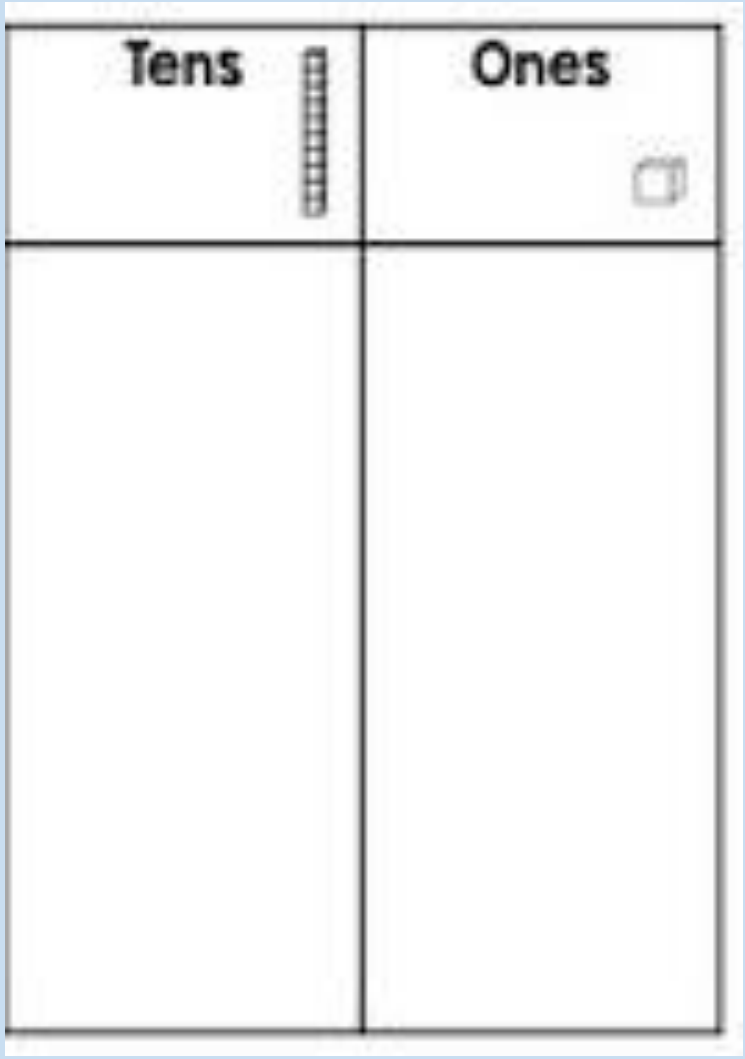
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100




Hit the Button
Square Numbers
Halves
Division Facts
Number Bonds
Doubles
Times Tables
Topmarks


White Rose Maths
1-minute MATHS
Subitising
Addition
Subtraction
Multiplication
Division

A sense of 10 and Place Value

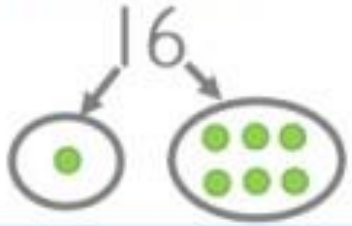


Is it sixteen? ✓ ✗

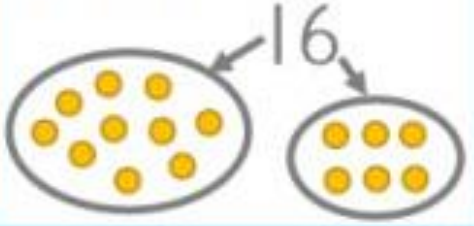
Is it sixteen?

61

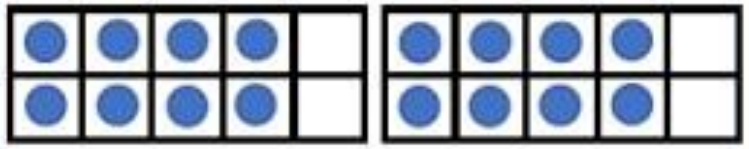
Is it sixteen?



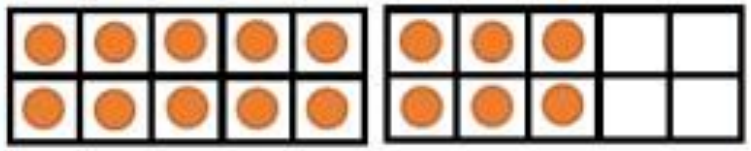
Is it sixteen?



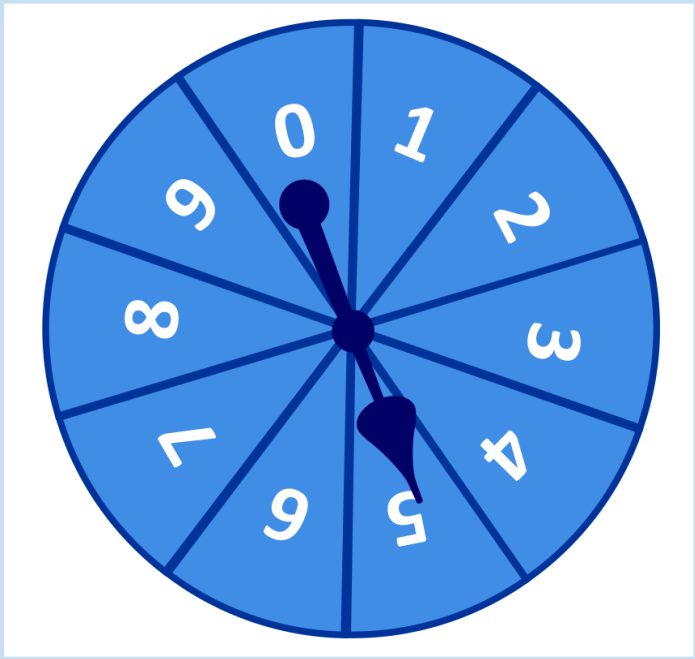
Is it sixteen?



Is it sixteen?

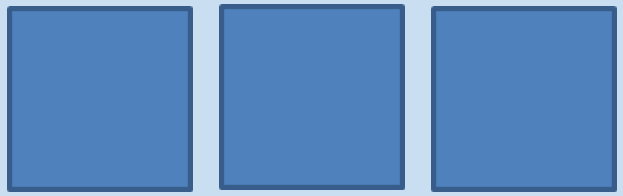


With an understanding of place value, children can partition numbers to help with calculations.



Let’s play!

Understanding place value and the size of numbers.



Biggest number wins!

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.

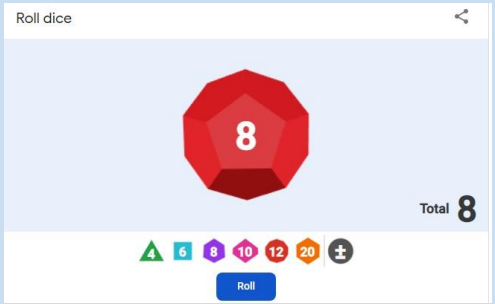
Year 2: Recall and use multiplication and division facts for the 2, 5 and 10 times tables. Begin learning the 3 times table.

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

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.



- https://g.co/kgs/fxiDE3L

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

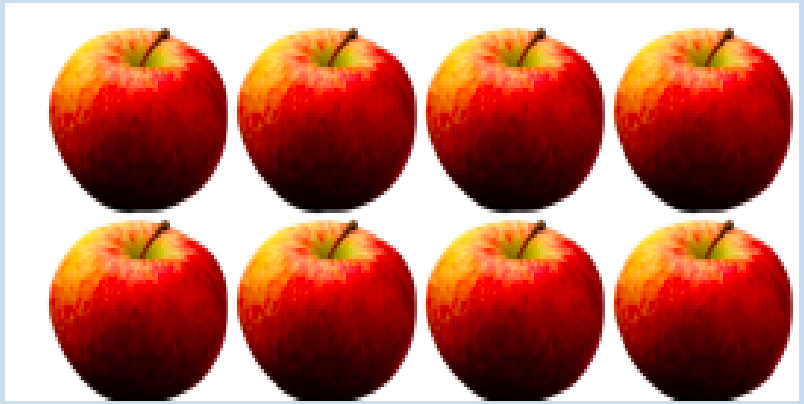
- Make up a rhyme e.g.

- Sing songs

- Relate it to something real – make a mental picture

An Array

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

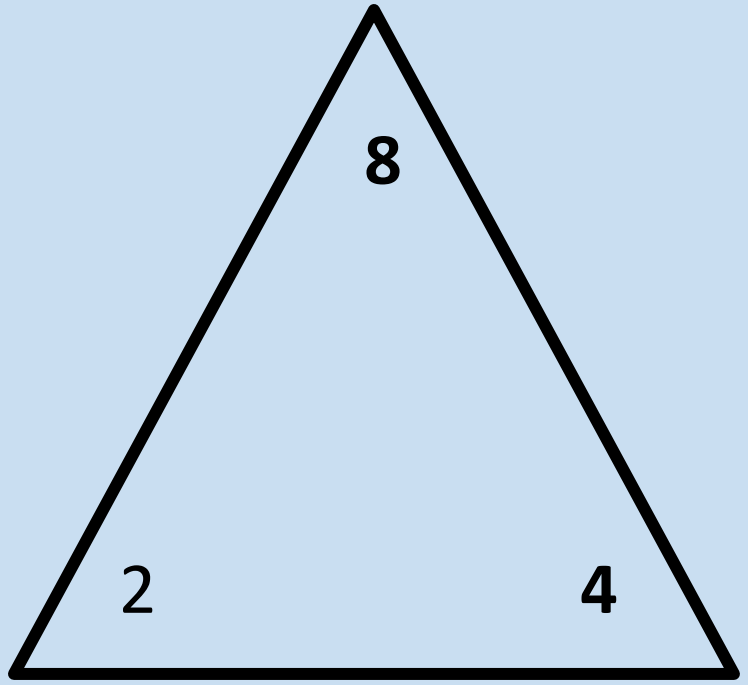


$2 \times 4 = 8$

$4 \times 2 = 8$

$8 \div 2 = 4$

$8 \div 4 = 2$



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...

Hit the Button – no account required

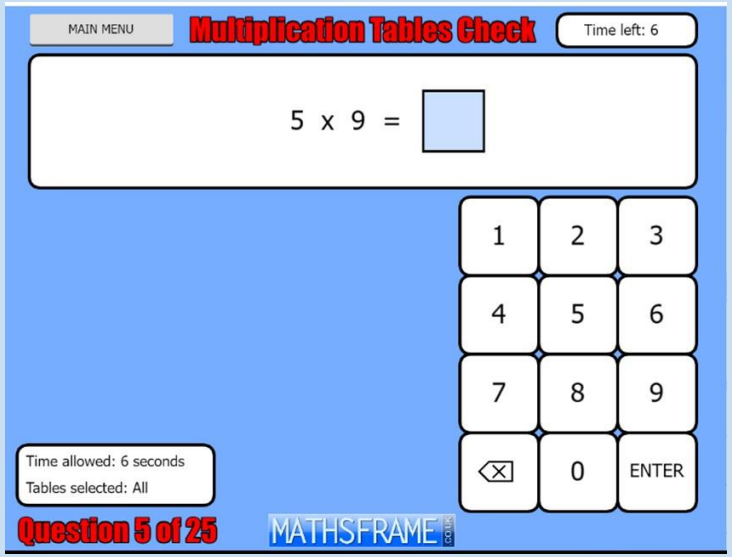
https://www.topmarks.co.uk/maths-games/hit-the-button

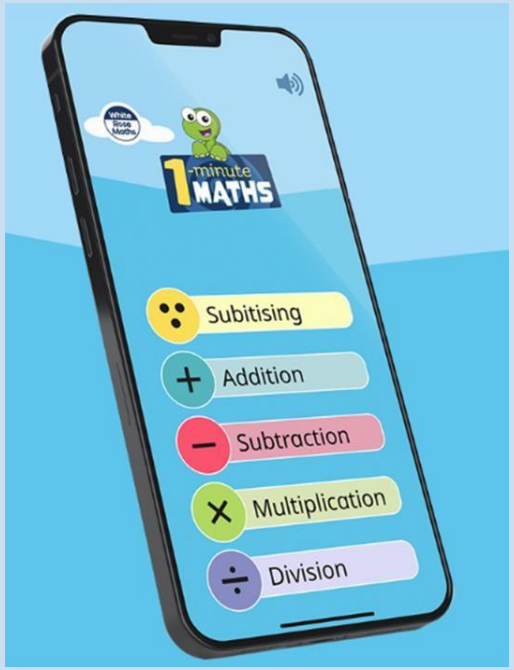
www.timestables.me.uk

Play online or print out written sheets

1 minute maths app from White Rose

Maths Frame





Telling the time

How much time we have to get ready?

How long until tea is ready?

What time is it?

Talking about maths – make it real

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

Be enthusiastic – have fun!

Website full of hints, tips and videos

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

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)

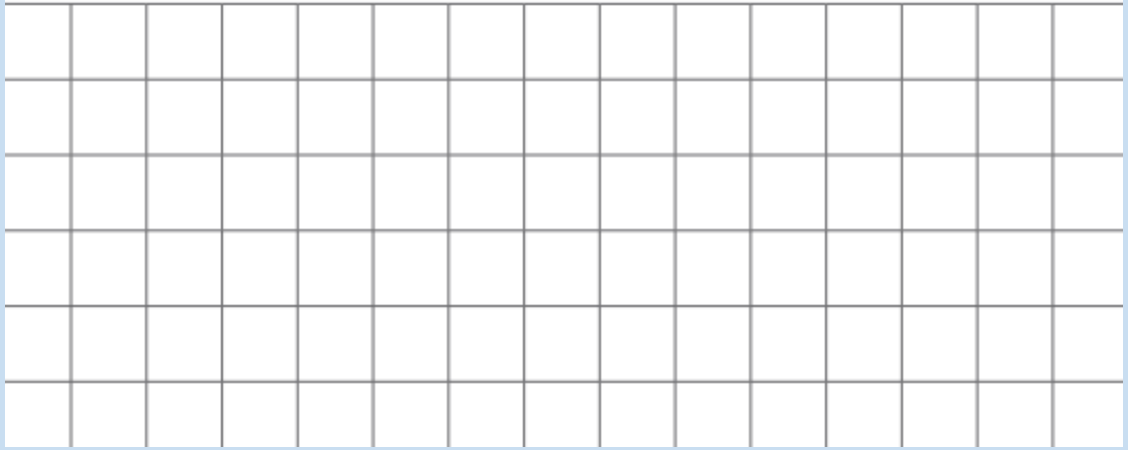
These are no longer statutory but we will probably continue to use them as part of our teacher assessment.

Paper 1: Arithmetic (fluency and calculations)

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

$8 + \square + 4 = 17$

$45 + 16 = \square$



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.

20	40	50	70	90

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

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

This number sentence equals 18

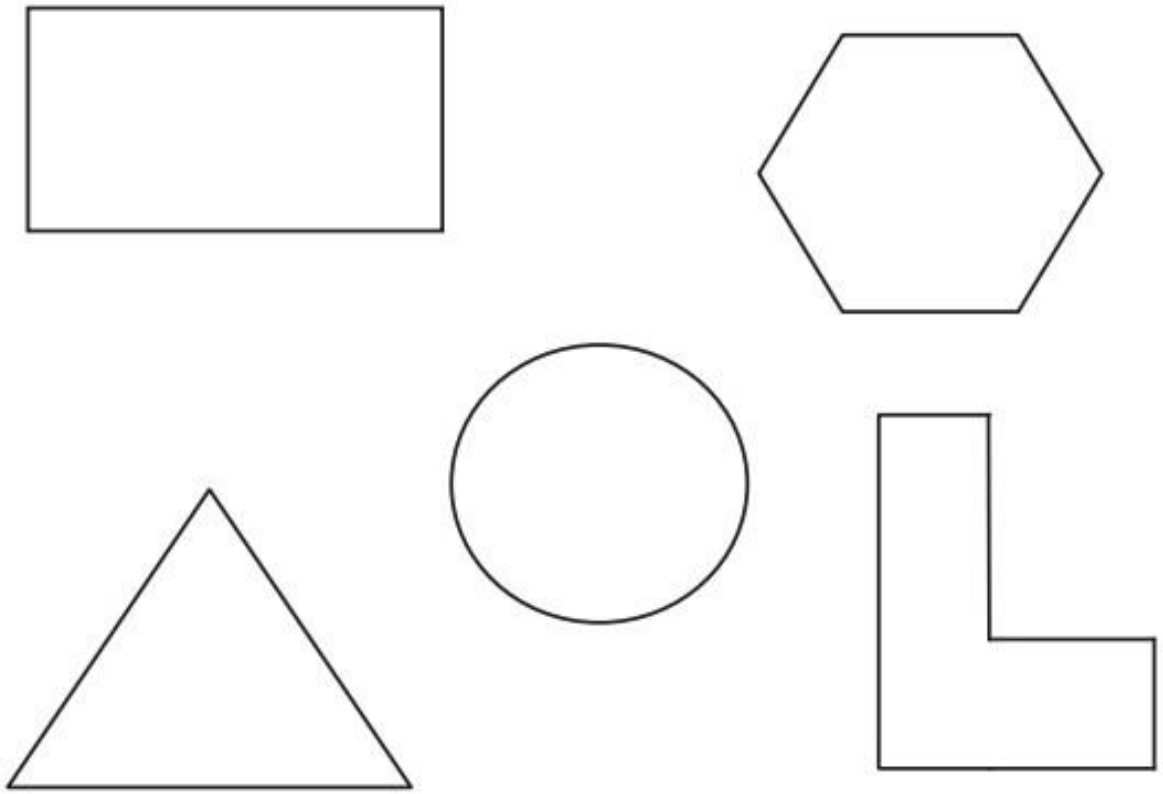
$$\square + \square\square = \square\square$$

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

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

$$\square + 1\square = 18$$

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 **length** of a pencil	kg
the **mass** of a bag of potatoes	°C
the **capacity** of a cup	cm
the **temperature** outside	ml

Any questions?

Thank you!