

1 Mathematics meeting 6



Tuesday 13th March



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Topics to cover

- To share the expectations and outcomes of the maths curriculum.
- To look through the strategies that your children are learning
- To share ideas about how to help your child at home (and when out and about)

Early Years Curriculum

- 2 strands
 - Number
 - Shape, Space and Measure
- Developmental matters statements
 - Separated into age bands - 30-50mths, 40-60mths
- Early Learning Goals
- Useful documents with examples
 - What to expect, when?
 - Exemplification materials for EYFS



Expectations - Number

- To count reliably with numbers from 1 to 20
- To order numbers 1-20 and say which number is one more or one less than a given number.
- To add and subtract two single-digit numbers (using quantities and objects) and count on or count back to find the answer.
- To solve problems, including doubling, halving and sharing.

Expectations - Shape, Space & Measure

- To use everyday language to talk about
size weight capacity
position distance time
money
- To compare quantities and objects to solve problems.
- To recognise, create and describe patterns.
- To explore characteristics of everyday objects and shapes and use mathematical language to describe them.

Ways to help your child

- Be aware of number and mathematics all around

Bus numbers

House/flat numbers

Timetables

Price signs in a shop

Dates & Times

Ways to help your child

➤ Number cards

- Make your own number cards, ordering numbers, play snap, labelling

➤ Number games

- Snakes and ladders
- Track games - roll the dice
- *How many more...?*
- *What number will I land on?*
- *Point out whether numbers are increasing or decreasing*

Ways to help your child

➤ Planning lunch

- *How many sandwiches do you need to make?*
- *How many slices of bread will you need?*
- *How many apples?*
- *Do we have enough? How many more do we need?*
- *How many spares will we have?*

➤ Sharing snacks - raisin maths

- *Share the raisins? How many do you have each?*
- *Count them*
- *Count back as you eat them*

Ways to help your child

➤ Shopping

- *Make a list before shopping - including quantities*
- *Count out each of the objects*
- *Handling money*

➤ Cooking

- *Measure weight, using quantities, check weights on packages - do we have enough?*
- *Look at the measurements on jugs*
- *How many spoonfuls?*
- *Comparing - which is the largest quantity?*

Ways to help your child - SSM

- Describing position and direction
 - *Hide and seek - hide a teddy, give directions on how to find*
 - *Set up an obstacle course - through, under, over, next to*
- Sorting and arranging objects
 - *Pairing shoes and socks*
 - *Ordering from smallest to largest*
 - *Organising according to colours*
 - *Make patterns*

Ways to help your child - Handouts

- Mathematical vocabulary

 - *Google translate!*

- Helping your child learn at home

Next slides

- Expectations from the National Curriculum

www.primarycurriculum.me.uk/

- See handout or download slide show from website

www.cardinalroad.co.uk

Aims of the maths curriculum

- Develop conceptual understanding
 - Ensuring that child understand the concepts and reasons not just following procedure
- Ability to recall and apply knowledge rapidly and accurately
- Reason mathematically
 - Noticing relationships and generalisations, being able to justify and prove using mathematical language
- Solve problems

Strands

- Number and Place Value
- Addition & Subtraction
- Multiplication & Division
- Fractions
- Measurement
- Shape
- Position & Direction
- Statistics (Year 2)

YEAR 1

Number & Place Value

- count to and across 100, forwards and backwards, beginning from any given number
- count, read and write numbers to 100 in numerals; count in multiples of 2, 5 and 10
- 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 & 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 < (*less than*), > (*more than*) and = signs
- read and write numbers to at least 100 in numerals and in words
- use place value and number facts to solve problems.

Strategies - Number & Place Value

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

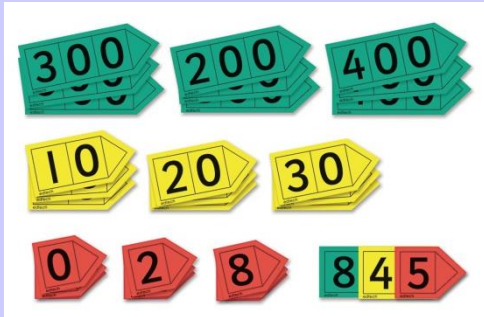
100 square - look at patterns
columns, rows, counting on,
counting back.
Make your own!

Fill in the missing numbers!

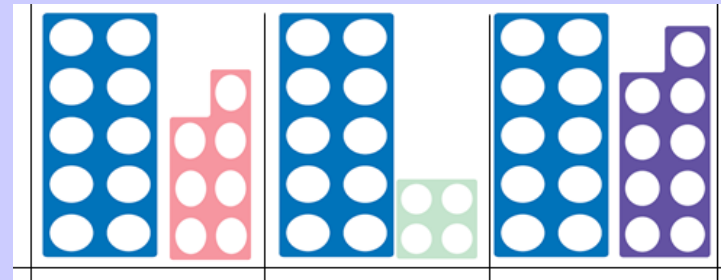
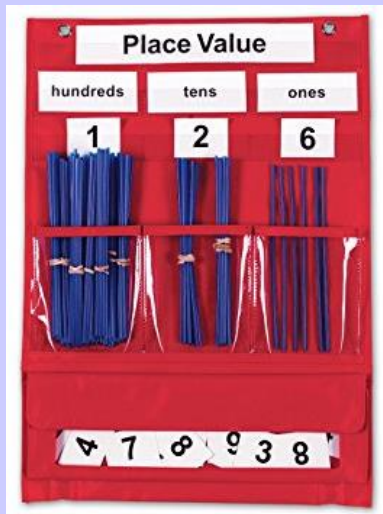
1	2		4		6		8		10
11	12		14		16	17		19	20
		23		25	26		28		30
31	32		34		36	37		39	
41		43	44		46	47		49	

Discuss what numbers are missing.
Give reasons.
Count in 5s - colour each

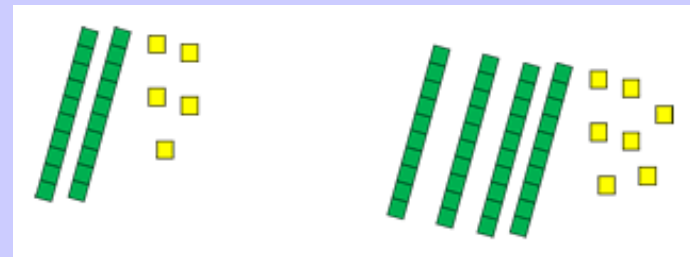
Strategies - Number & Place Value



Place value cards.
Helps understanding the tens digit
is worth ten, not just 1.



Numicon, making 2 digit
numbers



Dienes

Addition and Subtraction

- read, write and understand mathematical statements involving addition (+), subtraction (-) and equals (=) signs
- use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including zero
- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $5 = ? - 3$.

Addition and Subtraction

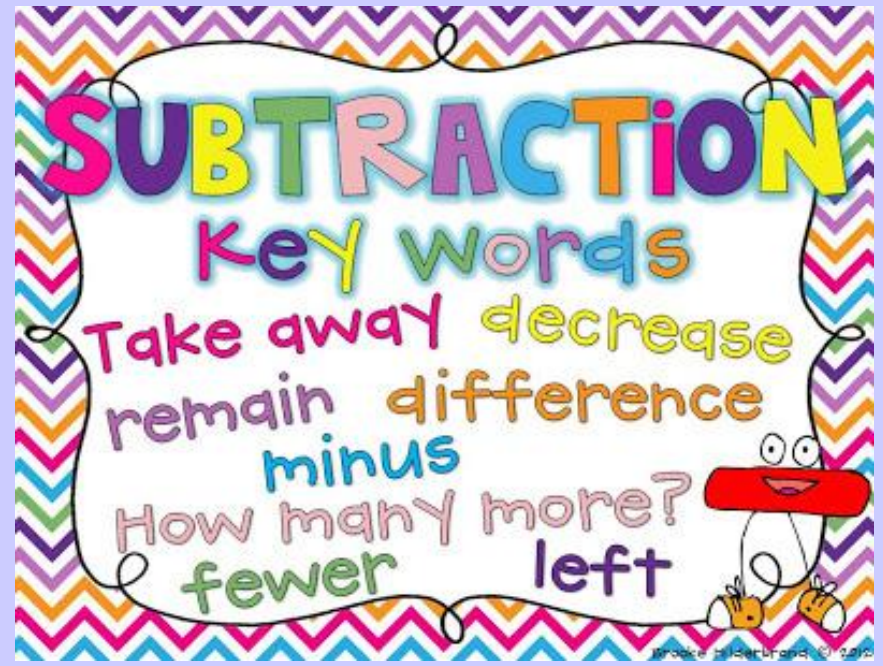
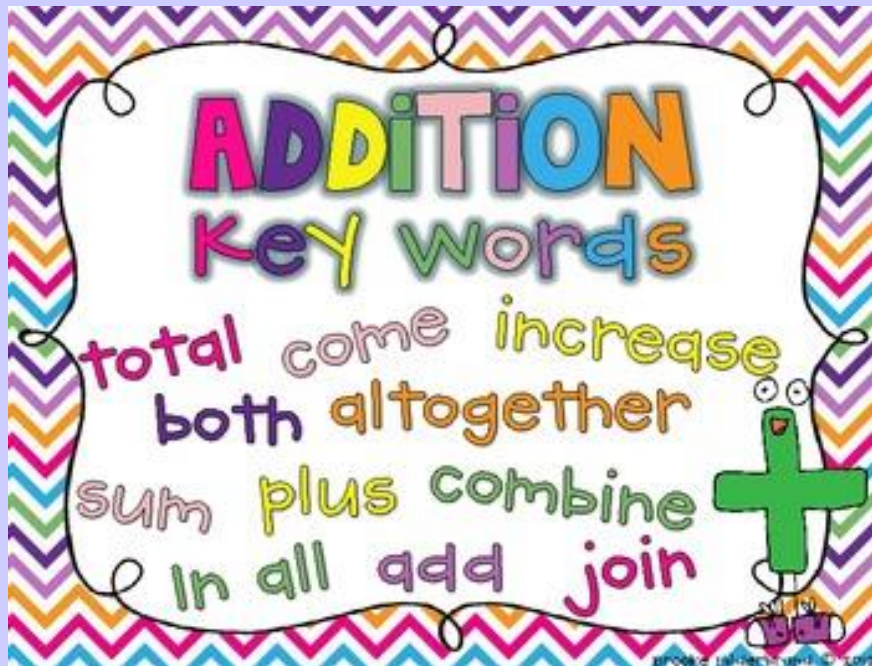
- solve problems with addition and subtraction:
 - using concrete objects and pictorial representations
 - applying their increasing knowledge of mental and written methods
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot

Addition and Subtraction

- 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
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Strategies - Addition & Subtraction

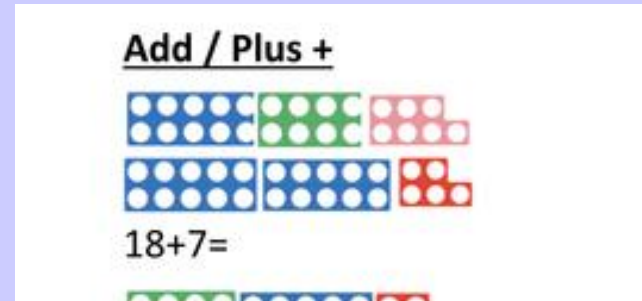
Always use a range of words, ensure children respond accurately to all keywords.



Strategies - Addition & Subtraction



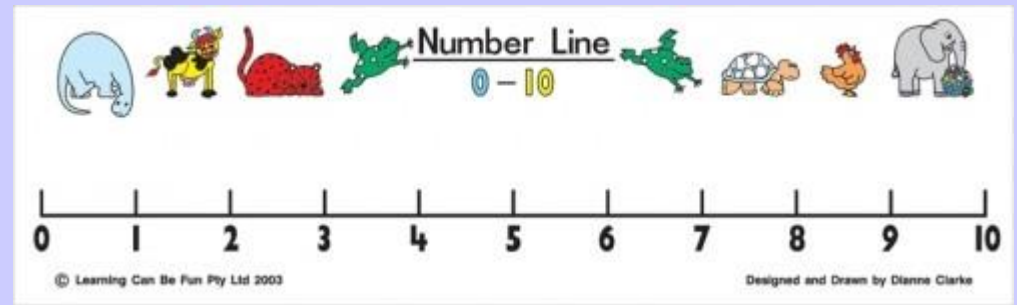
Use pictures to support



Numicon

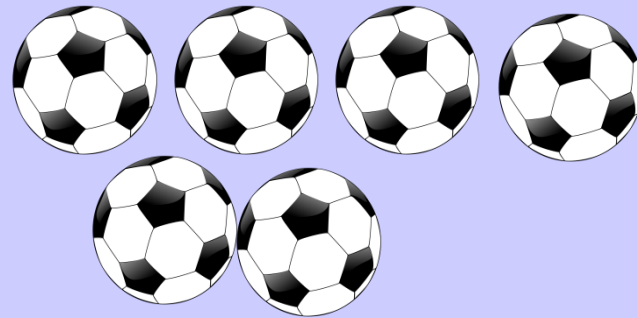
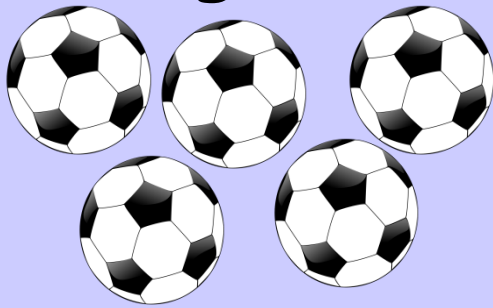


Encourage children to
collect each amount using
cubes



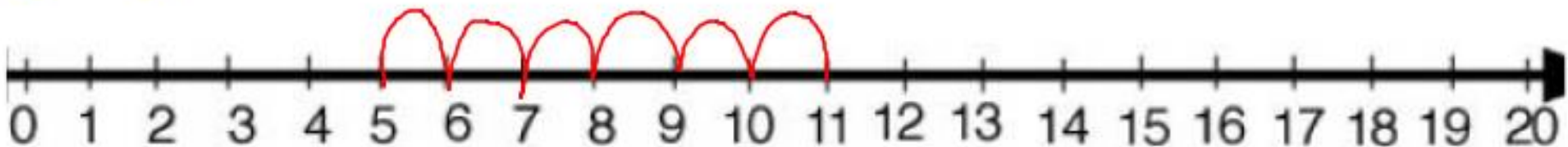
Strategies - Addition & Subtraction

Counting all



Counting on

$$5 + 6 =$$



Strategies - Addition & Subtraction

Start with objects



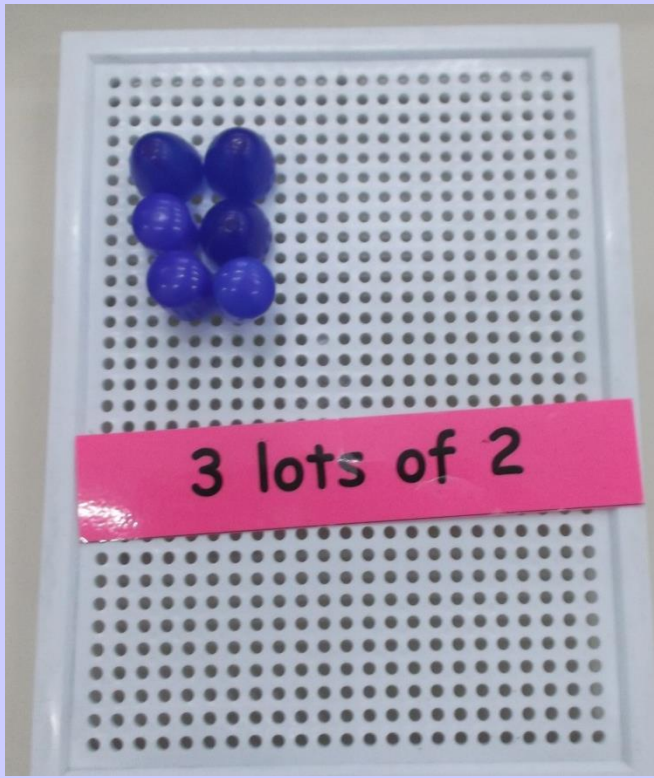
2 digit numbers											
2	3	+	3	6	=	5	9				
2	0	+	3	0	=	5	0	Take the tens from both numbers and add them.			
3	+	6	=	9	Then take the units from both numbers and add them.						
5	0	+	9	=	5	9	Take your tens answer and units answer and add them back together.				
digit numbers											
1	2	3	+	3	3	6	=	4	5	9	
1	0	0	+	3	0	0	=	4	0	0	
2	0	+	3	0	=	5	0				
3	+	6	=	9							
4	0	0	+	5	0	+	9	=	4	5	9

Multiplication & Division

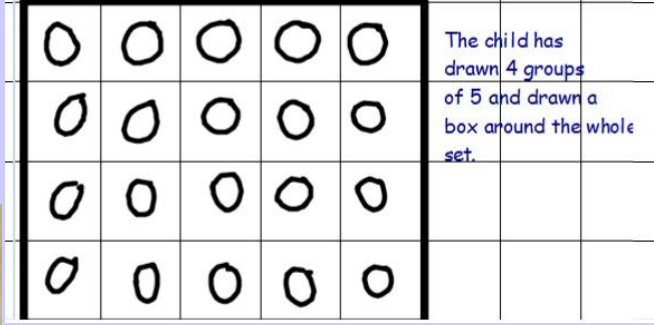
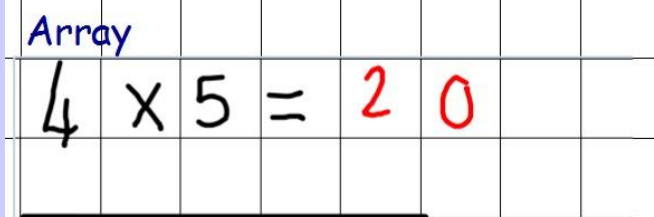
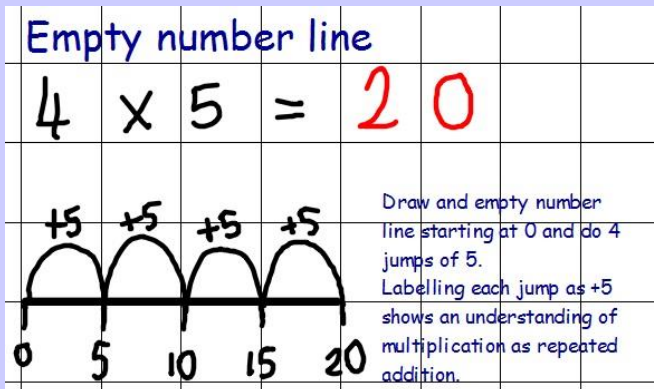
- solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

Multiplication & Division

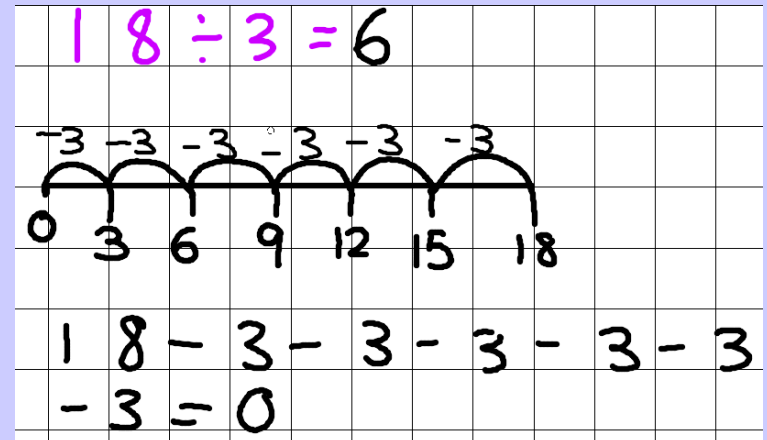
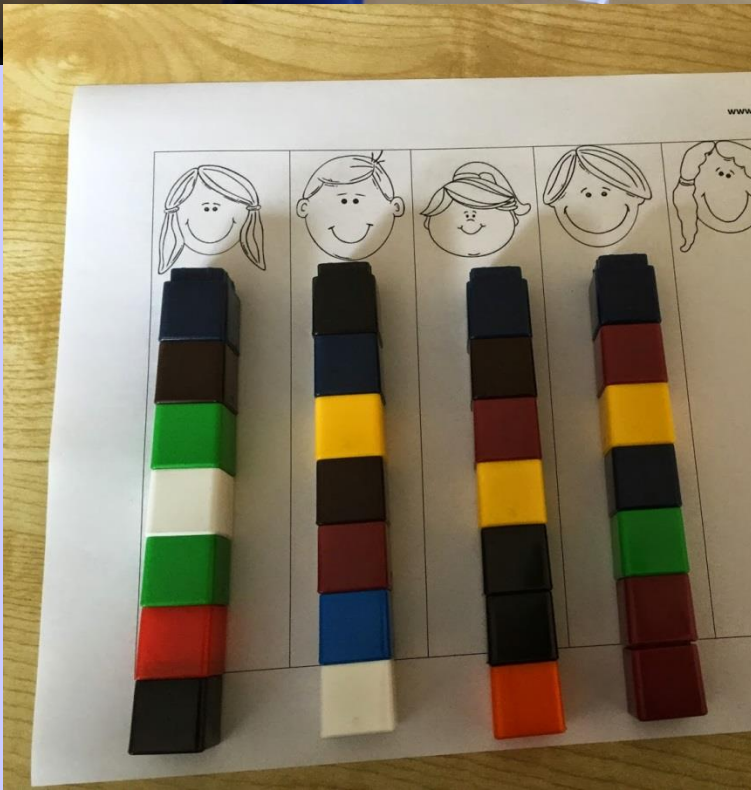
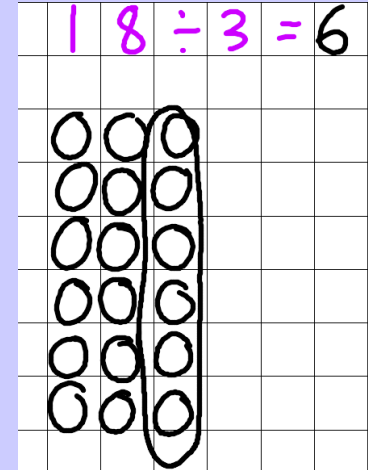
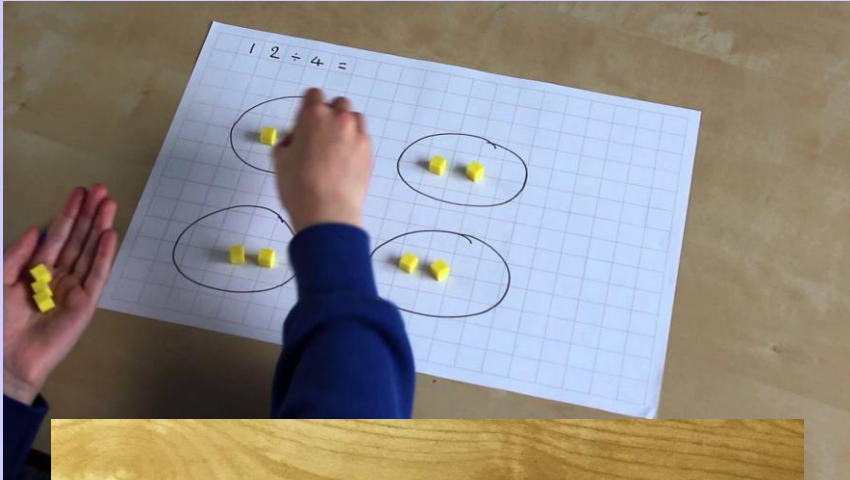
- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables,
- calculate multiplication and division within the multiplication tables and record
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.



Arrays multiplication



Sharing Division



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.

Fractions

- **recognise, find, name** and **write** fractions

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

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

$$\frac{2}{4}$$

$$\frac{3}{4}$$

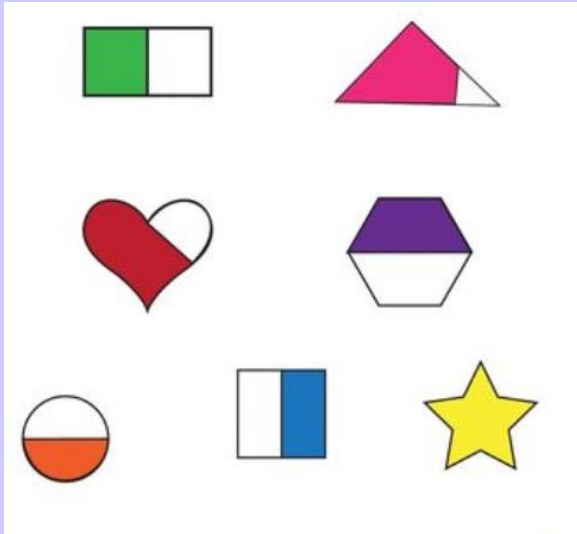
- of a length, shape, set of objects or quantity
- **write** simple fractions for example,
- $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of

$$\frac{2}{4}$$

and $\frac{1}{2}$

Fractions of shapes

$\frac{1}{2}$ or not?



Fractions that are more than one part

Circle the shapes below that show $\frac{3}{4}$.

Color three parts of each shape below to make $\frac{3}{4}$.

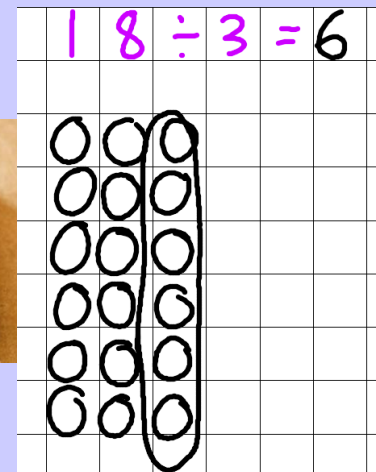
- Understand fractions as sharing
- Understand that the parts must be equal
- Understand that $\frac{1}{4}$ $\frac{1}{2}$ etc. are less than 1

Fractions of Quantities

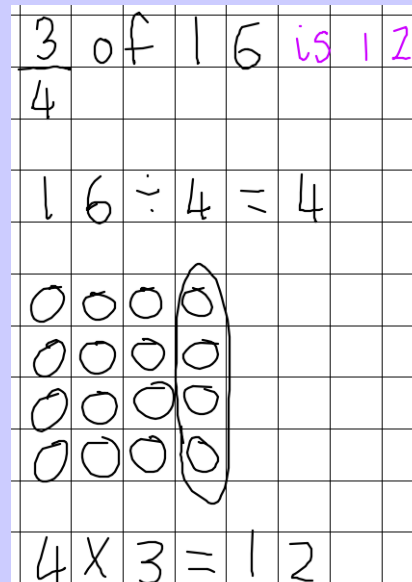
- Understand that the denominator (number on the bottom) tells us how many equal parts it is shared into in total



Link to dividing



- Understand that the number on the top tells you how many of the equal parts the fraction contains. Use a real life context



Measurement I

- compare, describe and solve practical problems for:
 - lengths and heights
 - mass/weight
 - capacity and volume
 - time
- measure and begin to record the following:
 - lengths and heights
 - mass/weight
 - capacity and volume
 - time (hours, minutes, seconds)
- recognise and know the value of different denominations of coins and notes

Measurement II

- sequence events in chronological order using language
 - for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening
- recognise and use language relating to dates, including days of the week, weeks, months and years
- tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

Measurement

- Estimate and measure using standard units
 - length/height in any direction (m/cm)
 - mass (kg/g);
 - temperature ($^{\circ}\text{C}$);
 - capacity (litres/ml)

using rulers, scales, thermometers and measuring vessels

- compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$

Measurement

- 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

Measurement

- 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.

Measurement



Shape

- recognise and name common 2-D and 3-D shapes,

Position & Direction

- describe position, direction and movement, including whole, half, quarter and three-quarter turns.

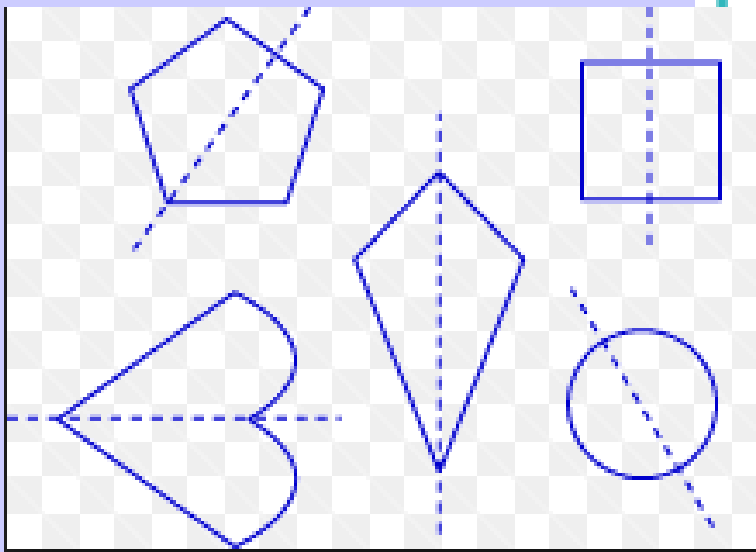
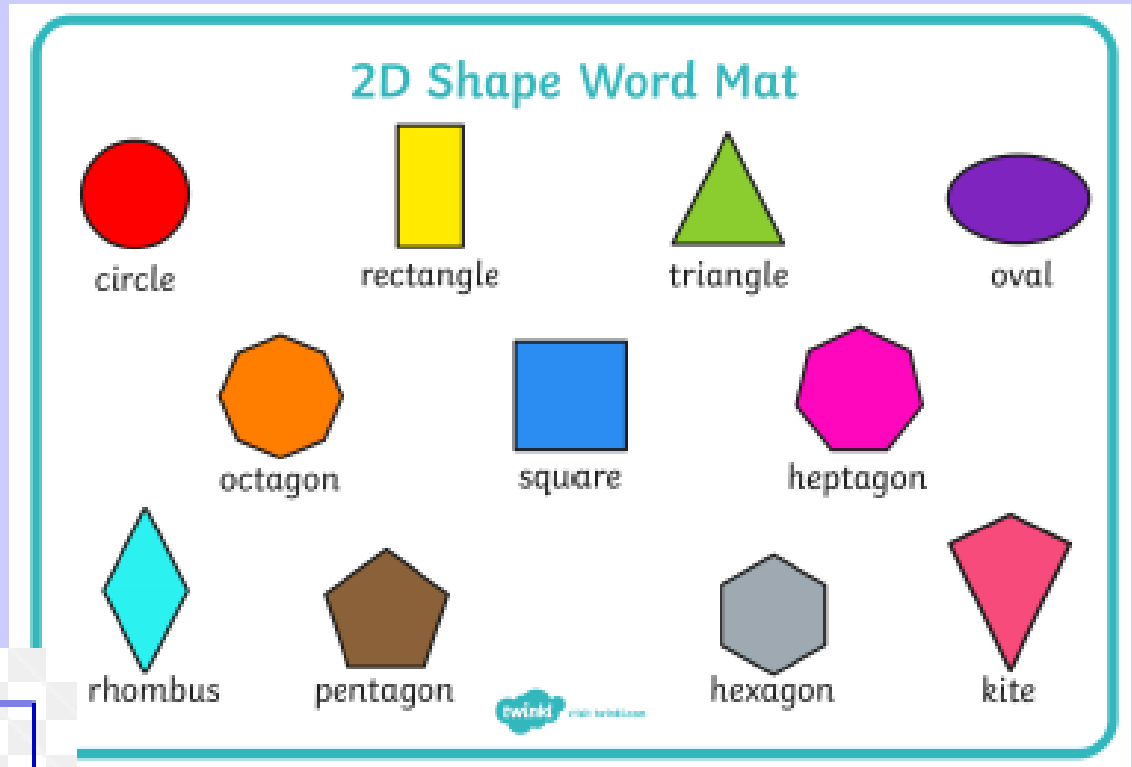
Shape

- 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.

Shape





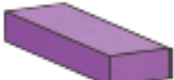










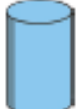







How many sides?

Are the sides straight or curved?



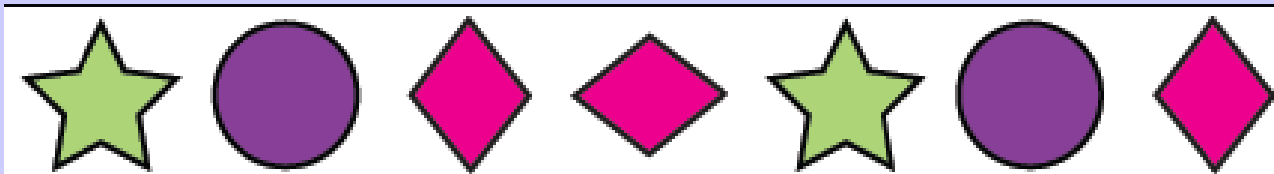
How many lines of symmetry do these shapes have?

3D Shapes Around You

Name		We see...	What it looks like...
cube		<ul style="list-style-type: none">• 6 flat surfaces• 12 edges• 8 vertices• all edges are the same	 ice cubes  cardboard box  blocks
cuboid		<ul style="list-style-type: none">• 6 flat surfaces• 12 edges• 8 vertices• not all edges are the same	 suitcase  rubber  book
square-based pyramid		<ul style="list-style-type: none">• 5 flat surfaces• 4 triangular faces• a sharp point• a square base	 pyramid candle  Egyptian pyramids
sphere		<ul style="list-style-type: none">• perfectly round• no edges• no vertices	 football  earth  marbles
cylinder		<ul style="list-style-type: none">• 2 flat surfaces• 1 curved surface• 2 curved edges	 candle  marker pen  mug
cone		<ul style="list-style-type: none">• 1 flat surfaces• 1 curved surface• a point	 ice cream cone  traffic cone  party hat

Position & Direction

- order and arrange combinations of mathematical objects in patterns and sequences



- use mathematical vocabulary to describe position, direction and movement, including turns -clockwise and anticlockwise and right angles

Position & Direction

Movement and Direction

whole turn

quarter turn

left

straight line

journey



turn

right

clockwise

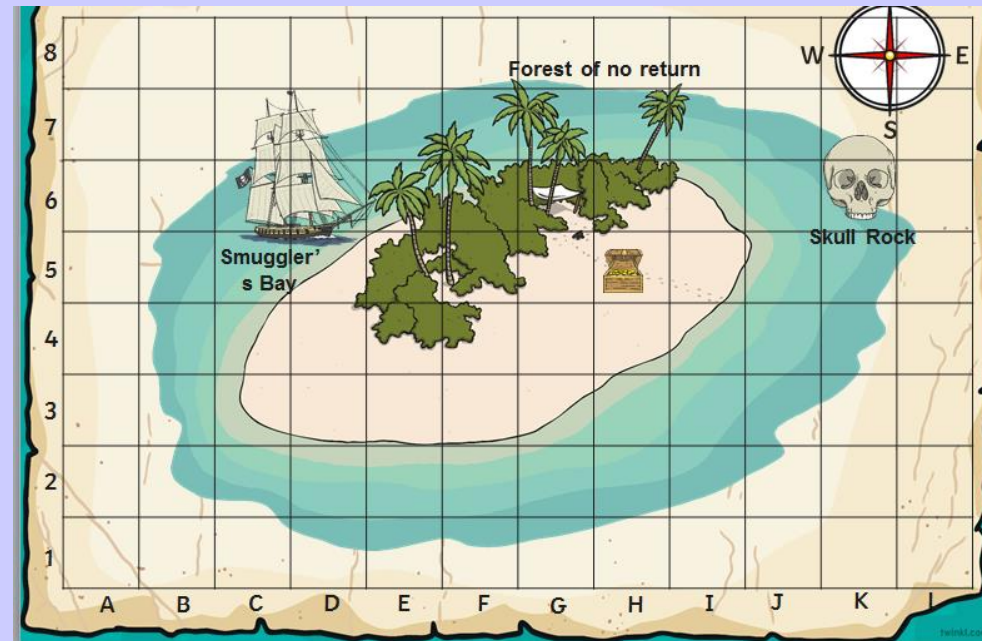
direction

rotation

half turn

right angle

anticlockwise

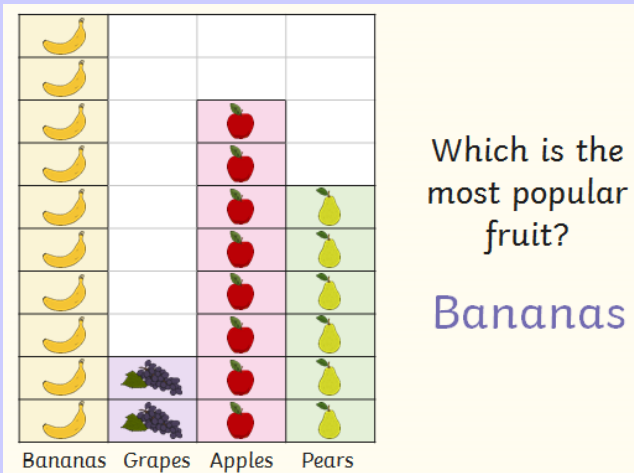


Statistics

- 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.

Statistics

- Ask and answer simple questions



Garden Bird	Tally
Willie Wagtail	
Rosella	
Magpie	
Parrot	
Pigeon	

How many more willie wagtails than pigeons did she see? 3

Where do these shapes need to move to?
Discuss with a partner.

	Shapes with curved lines	Shapes with straight lines
Pink shapes		
Blue shapes		