Year 2 Mathematics Knowledge Organiser

Addition

Key Concepts

- Use mental and written methods.
- Recall and use addition facts to 20 and 100.
- Add a 2-digit number & ones; a 2-digit number and tens; and two 2-digit numbers.
- Add three 1-digit numbers.
- Understand that addition calculations can be done in any order.

Key Vocabulary

- add/addition
- more
- plus
- make
- sum
- Altogether
- total
- equals
- calculation
- tens and ones
- number line

Addition Facts to 20

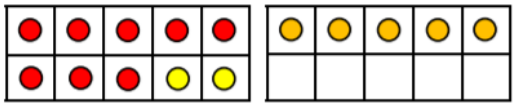
It is important to be able to quickly recall all the ways that each number up to 20 can be partitioned.

These are all the addition facts for the number 18...

1 + 17 = 18	6 + 12 = 18
2 + 16 = 18	7 + 11 = 18
3 + 15 = 18	8 + 10 = 18
4 + 14 = 18	9 + 9 = 18
5 + 13 = 18	

Adding Three 1-Digit Numbers

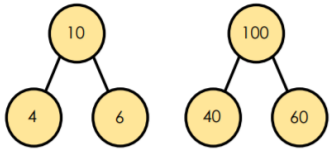
8 + 2 + 5 =



When adding three 1-digit numbers, try to find the most efficient way of adding them. We can see that 8 + 2 = 10 so we add these two numbers first. Then, we can add the 5. The answer is 15.

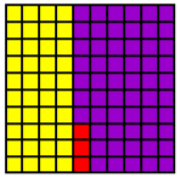
Addition Facts to 100

Using Tens Addition facts for the number 10 can be used to help calculate addition facts to 100.



Addition Facts to 100 with Tens and Ones

A secure knowledge of number bonds to 10 and tens bonds to 100 will help when learning facts to 100 with tens and ones.

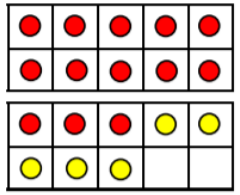


Using base 10 to support by placing the tens and ones on top of a 100 block.

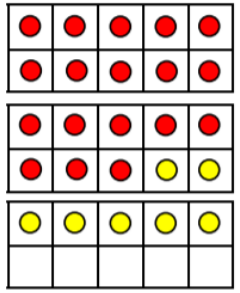
43 + 57 = 100. I know this because 40 + 50 = 90 and 3 + 7 = 10. 90+ 10 =100

Adding a 2-Digit Number and Ones

Build the 2-digit number using 10s frames and counters. Then, add the 1-digit number using counters of another colour.

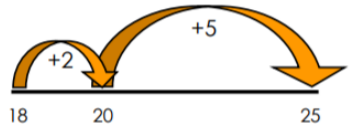


13 + 5 = 18



18 + 7 = 25

Partition the 7 into 2 and 5 to reach the next 10s number.



Adding a 2-Digit Number and Tens

Use place value knowledge to support when adding tens to a number

13 + 30 = 43

Tens	Ones
1	3
2	3
3	3
4	3

+ 10
+ 10
+ 10

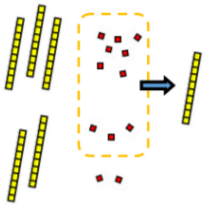
26 + 30 = 56

Tens	Ones
	
	

Year 2 Mathematics Knowledge Organiser

Addition

How do you cross the 10s boundary?



30 + 20 = 50

7 + 5 = 12

There are 5 tens = 50

There are 12 ones.

Ten ones can be exchanged for a tens rod to 18 20 25 help add the total. Now, 60 + 2 = 62.

Multiplication and Division

Key Concepts

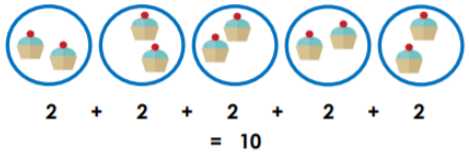
- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.
- Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.
- Show that multiplication 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.

Key Vocabulary

- Equal groups
- Grouping
- Sharing
- Count in (2s, 5s, 10s)
- Repeated addition
- Lots of
- Groups of
- Array
- Divide
- Divided by
- Multiply
- Multiple

Repeated Addition

Following from practical multiplication in YR1 by making equal groups, addition symbols are used to show how multiple equal groups are added together. This is combined with the same language used in Year 1, describing the how many groups there are and how many are in each group.



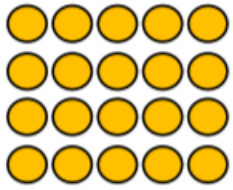
5 groups of 2 = 10

5 twos = 10

Once this is understood, the multiplication symbol is introduced:

5 x 2 = 10

Arrays can also be used and described like so...



5 + 5 + 5 + 5 = 20

4 fives = 20

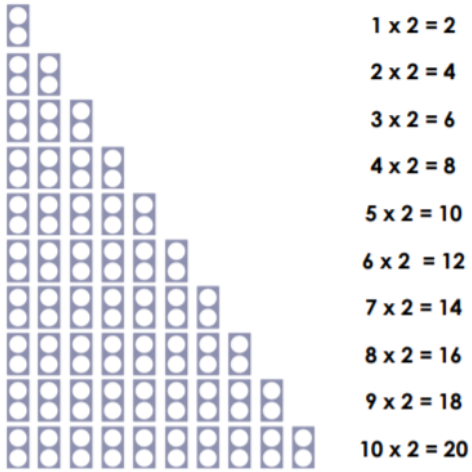
4 x 5 = 20

Times Tables

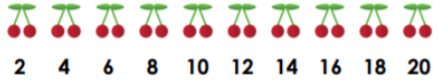
It is important to understand the 2, 5 and 10 times tables to be able to multiply with ease.

Representing the tables visually is important for understanding.

For example:



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20



Any Order

One way to show this is using objects. For example, 5 x 3 can be shown...

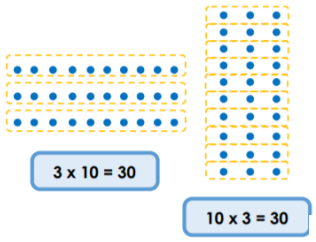
5 groups of 3

5 x 3 = 15

or

3 groups of 5

3 x 5 = 15



Arrays are a helpful way of showing that multiplication can be done in any order.

Therefore...

3 X 10 is equal to 10 x 3

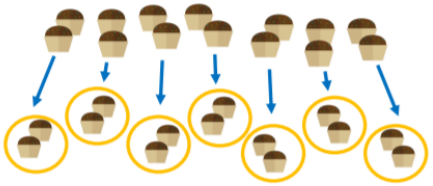
Year 2 Mathematics Knowledge Organiser

Multiplication and Division

Grouping and the Division Symbol

Again, following on from practical learning in YR1, grouping an amount of objects supports understanding of division. This continues with physical movement of objects into a specific group size.
E.g. There are 14 cakes. Put 2 on each plate.

In other words, divide 14 by 2 to find the number of groups



There are 7 groups of 2. 14 divided by 2 is 7.

Now the division equation is introduced.

14 ÷ 2 = 7

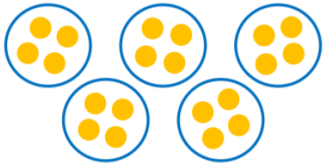
This can then be shown by drawing:

20 ÷ 5 = 4

Circle to show groups

Mental Methods

Mental methods include informal ways of showing the way of working out. For example drawings when sharing: There are 20 sweets. They are shared between 5 children, how many sweets will each child get?



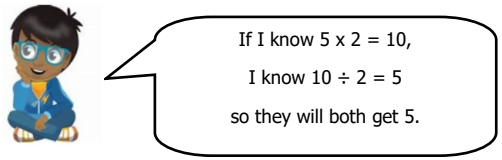
20 ÷ 5 = 4

Multiplication and Division Facts

A secure knowledge of multiplication facts allows problems to be solved efficiently.

For example, Marlon has 10 sweets and he wants to share them equally with Caleb.

It could be drawn out and shared between 2 people but...



Subtraction

Key Concepts

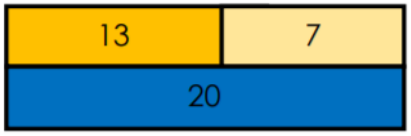
- Use mental and written methods.
- Recall subtraction facts for each number up to 20.
- Subtract a 1-digit from a 2-digit number; tens from a 2-digit number; and a 2-digit number from a 2-digit number.
- Use addition to check answer

Key Vocabulary

- subtract/subtraction
- take away
- leave
- minus
- less
- difference
- difference between

Subtraction Facts to 20

Use your addition facts to 20 to learn the related subtraction facts . This will create a fact family.

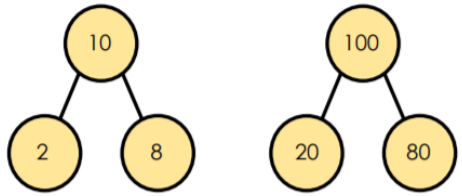


13 + 7 = 20 **20 - 13 = 7**
7 + 13 = 20 **20 - 7 = 13**

Subtraction Facts to 100

We can use related subtraction facts to 10 to help us calculate facts from 100.

10 - 8 = 2 **100 - 80 = 20**



Subtracting a 2-Digit Number and Ones

Put the larger number in your head and count back.

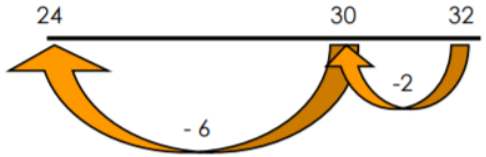
28 – 6 = 22

Year 2 Mathematics Knowledge Organiser

Subtraction

If it crosses the 10s boundary, partition the 1s number to get to the previous 10.

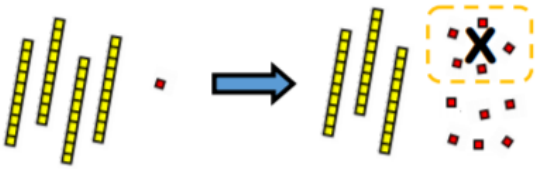
32 - 8 = 24



You can also exchange a 10 for 10 ones...

41 - 5 = 36

We do not have enough ones to take 5 away so I can exchange 1 ten for 10 ones.



Subtracting a 2-Digit Number and Tens

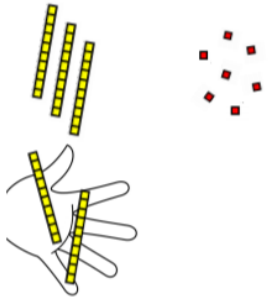
Use place value knowledge to support when subtracting tens from a number.

61 - 30 = 31

Tens	Ones	
3	1	- 10
4	1	- 10
5	1	- 10
6	1	

57- 20 = 37

Tens	Ones

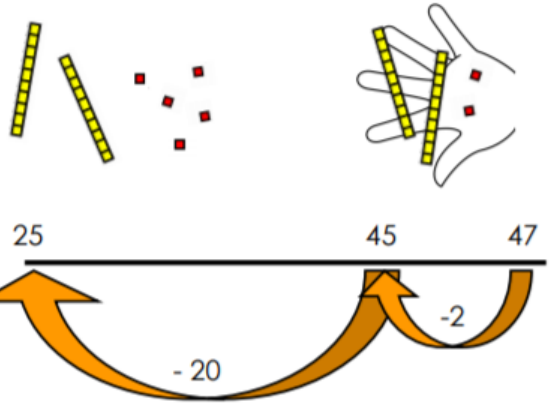


I have taken away 2 tens (20) and I have 37 left. I have noticed that the tens column is the only one that is changing

Subtracting a 2-Digit Number (No Boundary)

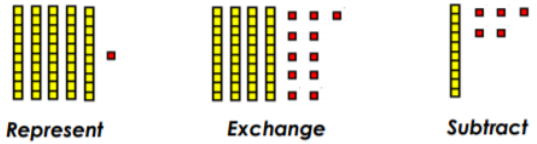
47 - 22 =

47 has been built using Dienes. I need to take 22 away. That's 2 ones and 2 tens. I am left with 25.

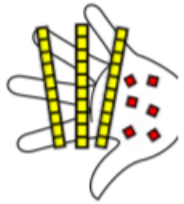


Crossing the 10s Boundary

51 - 36 =



There are not enough ones to subtract 6 from 1. We need to exchange 1 ten for 10 ones. Now, we can subtract.

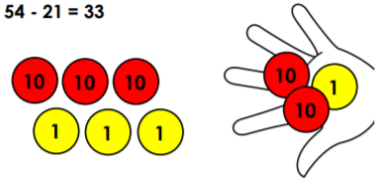


Using the Inverse

The inverse is the opposite calculation.

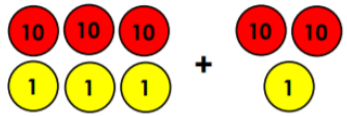
Addition (+) and subtraction (-) are the inverse of each other.

54 - 21 = 33

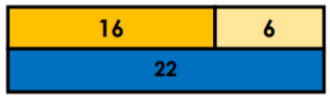


I can check this by using the inverse.

33 + 21 = 54



You could use the inverse to check... **22 - 6 = 16**



The inverse tells us that **16 + 6 = 22.**

Looking at the bar model, we also know that **22 - 16 = 6** and **6 + 16 = 22.**

Year 2 Mathematics Knowledge Organiser

Place Value

Key Concepts

- Key Concepts
- Recognising the place value of each digit in a two digit number
- Read and write numbers up to 100 in numerals and in words
- Compare and order numbers from 0 up to 100
- Partitioning tens and ones
- Understanding place value charts
- Counting in 2s, 3s, 5s and 10s

Key Vocabulary

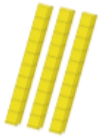
- represents
- greater than/less than
- more than
- fewer
- most
- least
- equal to
- tens ad ones
- place value

Numbers to 100

A two-digit number is made up of tens and ones. Base 10 can be used to represent numbers

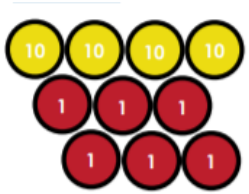
represents a ten

represents a one



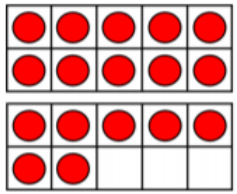
This represents the number 35. It is made up of 3 tens (30) and 5 ones.

Numbers can also be represented with place value counters.



These counters represent the number 46. It is made up of 4 tens (40) and 6 ones

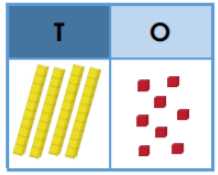
Numbers can also be shown in a ten frame.



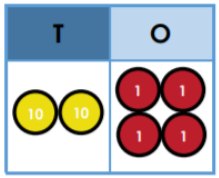
This shows a complete ten and 7 ones. This means that it shows the number 17.

Place Value Charts

Place value helps us know the value of a digit, depending on its place in the number.



This place value chart shows a number using base 10. There are 4 tens (40) and 8 ones so it represents the number 48.



This place value chart shows a number using counters. There are 2 tens (20) and 4 ones. It represents the number 24.

T	O
2	5

In this place value chart, the 2 digit is in the tens place, so it really means 20.

Counting in 2s, 5s and 10s.

2s - 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

I have noticed that when I count in 2s, all the numbers are even.

5s - 5, 10, 15, 20, 25, 30, 35, 40, 45

I have noticed that when I count in 5s, all the numbers I say end with either a 5 or a 0.

10s - 10, 20, 30, 40, 50, 60, 70, 80

I have noticed that when I count in 10s, all the numbers end in a zero.

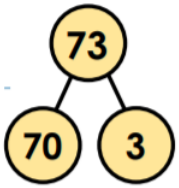
Counting in 3s

3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36

I have noticed that when I count in 3s, the numbers I say go odd, even, odd, even in a pattern.

Partitioning Tens and Ones

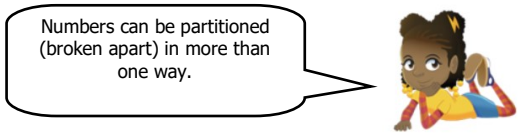
Partitioning is where we split a number up into smaller parts. For example:

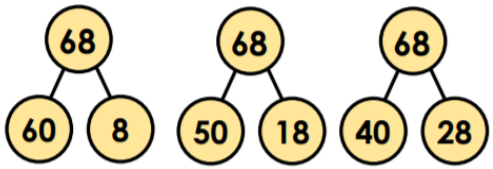


73 can be partitioned into 70 and 3.

Year 2 Mathematics Knowledge Organiser

Place Value





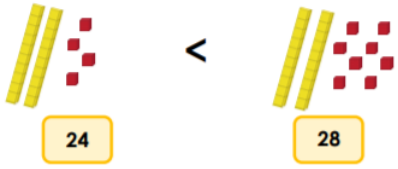
Here are three different ways that the number 68 can be partitioned. The images show that... 60 + 8 = 68 and 50 + 18 = 68 and 40 + 28 = 68

Ordering and Comparing Numbers

When we put numbers in order, we need to compare the value of their digits.

First, look at the tens digits in each number. They are the same so we then look at the ones digits. 4 is the smaller ones digit so 24 is the smaller number.

We can compare numbers and objects using the < and > symbols. **< = less than > = greater than.**



Read and Write Numbers in Numerals and Words

Numbers can be written in both numerals and words. When writing a number in words, it is useful to think about the place value of the digits.

T	O
8	5

This would be written as eighty-five.

T	O
8	0

When there is a zero, we don't need to write anything for that column. This is just eighty, not eighty-zero.

Fractions

Key Concepts

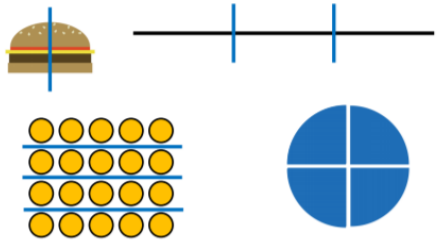
- recognise, find, name and write fractions ⅓, ¼, 2/4 ¾ of a...
  - length
  - shape
  - set of objects
  - quantity
- write simple fractions for example, ½ of 6 = 3
- recognise the equivalence of ½ and 2/4 .

Key Vocabulary

- Equal
- Whole Parts
- Half/ halve
- Quarter
- Third
- Divided
- Unit fraction
- Non-unit fraction
- Equivalent

Make Equal Parts

Before moving onto particular fractions, it is important secure on their understanding that a whole can be one object or one quantity, then making equal parts of that whole.



Recognise Half and Quarter

Although this is covered in Year 1, consolidating knowledge is necessary before moving on. Identifying ½ and ¼ through shapes is a visual way of understanding the concept. Explaining why a shape is not a half or a quarter embeds the understanding of equal parts.

Recognising One Third

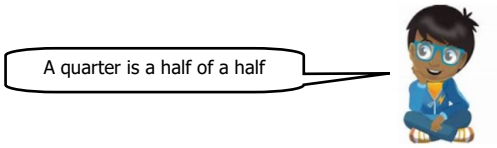
This a new concept, being able to identify shapes that have been split into 3 equal parts and is an application of understanding of halves and quarters.

Finding Half, Quarter and One Third

This involves using the same method as year 1, physically sharing amounts, but also leads on to more abstract work. It is important to understand that the total is the whole and in order to find half it must be split into 2 equal groups. It can help to combine sharing with the shape work to support the transition into quantities.

Year 2 Mathematics Knowledge Organiser

Fractions

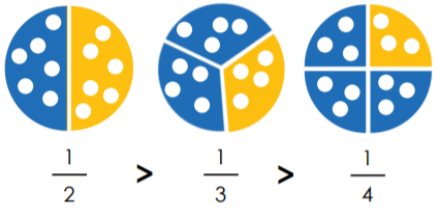


Identifying the relationship between halves and quarters will develop greater understanding of fractions.

Unit Fractions

Unit fractions only involve looking at one of the equal parts.

Starting with these unit fractions helps to develop an understanding what the happens when the denominator (the amount of groups you are dividing the whole into) changes. The more equal parts the whole is split into, the smaller the fraction is. For example, sharing 12 into different equal parts shows:

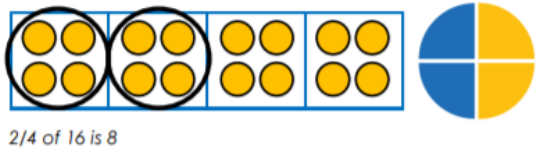


Non-Unit Fractions

These fractions concern more than one of the equal parts.

If the both parts of the fraction are the same the fraction is describing the whole.

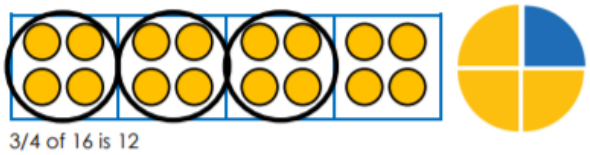
Two Quarters



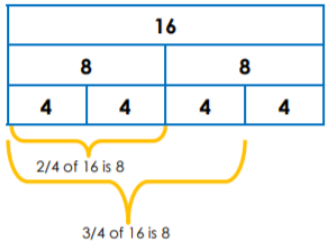
2/4 of 16 is 8 Two quarters is shown by taking two of the four equal parts that the shape or quantity has been divided into.

Three Quarters

To establish three quarters the same strategies can be used.



Once there is a secure understanding of a quarter being half of a half, a bar model can be used to work more abstractly:



Writing Fractions

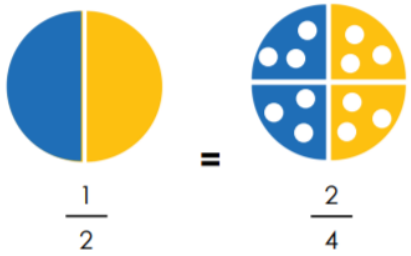
All of this practical work will lead to writing of fractions in the mathematical form:

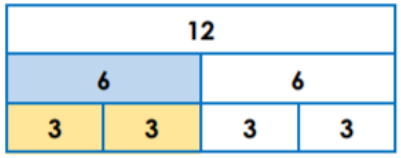
$\frac{1}{3}$ of 12

And also using words such as one quarter, one third etc.

Recognise Equivalence of 2/4 and 1/2

Explicit understanding needs to be gained by comparing identical shapes divided into different parts.





Money

Key Concepts

- 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

Key Vocabulary

- pounds
- pence
- penny
- equal
- coins
- notes
- value
- equivalent
- change

Year 2 Mathematics Knowledge Organiser

Money

Combine Amounts
Making Amounts

Understanding the value of each coin in YR1 is developed in YR2 by combining amounts to make a value. Knowledge of place value can support finding values at a basic level. For example,

I know 56 has 5 tens and 6 ones so I can use five 10ps and six pennies.

Although correct, this should be developed into a more efficient use of coins, thinking about the largest value coin that could be used to make the total.

I can use a 50p to make the 50 and I know 5 and 1 is 6 so I can use a 5p and a 1p.

Finding Totals

Finding the total of a given number of coins is another skill to master. A good knowledge of counting in 2s, 5s and 10s supports all money work. Also, identifying the coin of the largest value and starting from there is a skill that helps make counting coins easier and more accurate.

20p is my largest coin. I can order them from largest to smallest value.

20... 40... 50... 52... 54
I have 54p altogether.

A mixture of pounds and pence can be used, however there is no expectation to write the correct notation using a decimal point. Pounds should be counted first.

Five pounds... 6 pounds and 20, 25, 30, 31p
I have £6 and 31p.

Find Different Combinations

When confidence has grown with making different amounts, pupils should begin to find different ways to make the same total. How many different ways can you make 20p?

I have noticed that when I count in 2s, all the numbers are even.

I know 10 + 10 = 20, so I could use two 10ps instead.

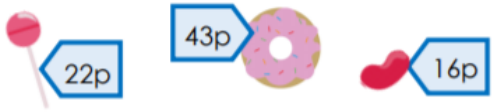
I know that 5+5 = 10, so I can swap one of my 10ps for two 5ps..

I could use 5 pennies instead of a 5p.

This is a good opportunity to develop ways of working systematically, for example exchanging one coin for others of equivalent value.

Simple Problems

Applying these skills to real life problems helps to understand the purpose of the maths involved. To start simply, addition can be used to combine values of items bought in a shop to find a total.



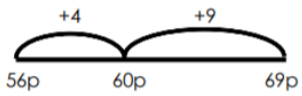
For example: How much do the lollipop and the jelly bean cost altogether?

Basic addition skills can be used to solve this.

The language of the question can make it seem more difficult to the children. Finding the difference should be encouraged as it requires them to see the two values as a comparison rather than a total.

Darcey has 56p, Caleb has 69p.
How much more money does Caleb have than Darcey?

Caleb has 13p more than Darcey.



Year 2 Mathematics Knowledge Organiser

Money

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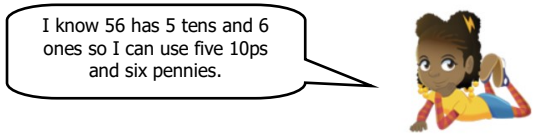
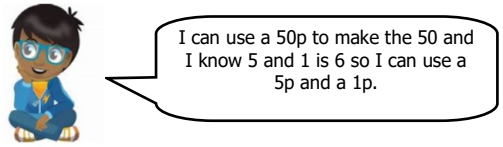


Although correct, this should be developed into a more efficient use of coins, thinking about the largest value coin that could be used to make the total.



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Giving Change

Change can be calculated in 2 different ways

> Jane has 50p. She spends 35p.
> How much change does she get?

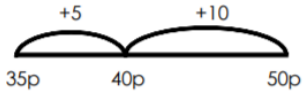
Firstly, this can be tackled as a subtraction calculation.

50 – 35

50 – 30 = 20,

20 – 5 = 15.

Alternatively, it can be approached by counting on:



Jane gets 15p change.

Two-Step Problems

More advanced problems involve more than one step. For example:

> Ranjiit had £1.
> He bought a pen for 34p and an eraser for 42p.
> How much money does he have left?

42p + 34p = 76p

40 + 30 = 70

2 + 4 = 6

100p – 76p =

100 – 70 = 30

30 – 6 = 24

Ranjit has 24p left.

Statistics

Key Concepts

- 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.

Key Vocabulary

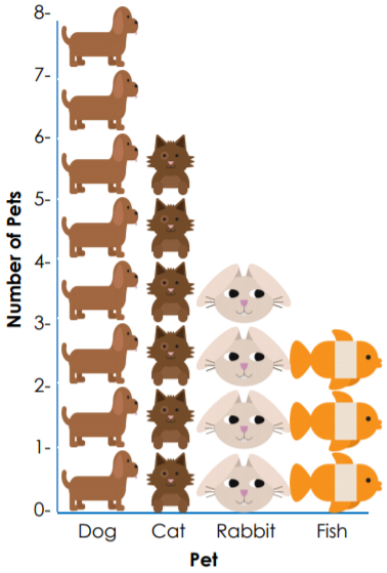
- Pictogram
- Tally chart
- Block diagram
- Table
- Total
- Compare
- Scale
- Record
- Data
- Most/Least
- Popular
- More/Fewer

Pictograms

represents 1 object.

For example:

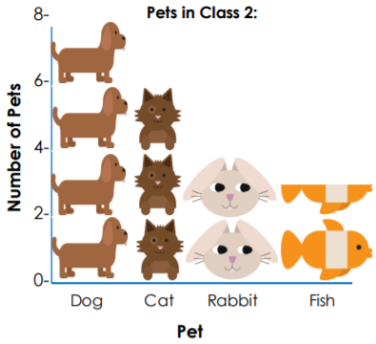
Pictograms give visual images to represent data. They can be horizontal or vertical. Each picture represents a value. Often, the value can be 1 picture



Year 2 Mathematics Knowledge Organiser

Statistics

However, it is possible for one picture to represent multiples, e.g. 2, 5 or 10 objects.



This scale goes up in 2s so each picture represents 2 children in the class. Any half pictures have the value of 1.

Tally Charts

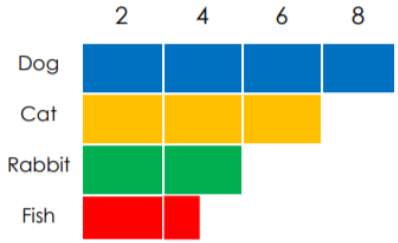
A tally chart can show the same information as a pictogram but it looks more abstract. Information is recorded using marks to show the number represented. To make totalling easier, tallies are recorded in blocks of 5.

Pet	Tally	Number
Dog	𝍸 III	8
Cat	𝍸 I	6
Rabbit	IIII	4
Fish	III	3

Block Diagrams

A block diagram is similar to the pictogram but has blocks to represent the objects instead. As with pictograms, they can have different scales and lie horizontally or vertically.

Each block is worth 2 children.



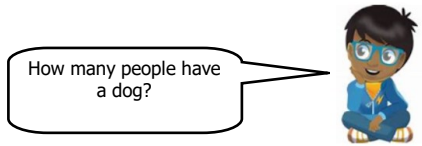
Simple Tables

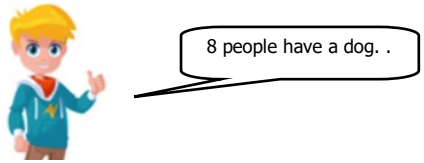
A table is a quick way to record data such as measurements and can then be used to hold data that may then be put into other forms.

Pet	Number of children
Dog	8
Cat	6
Rabbit	4
Fish	3

Ask and Answer Questions

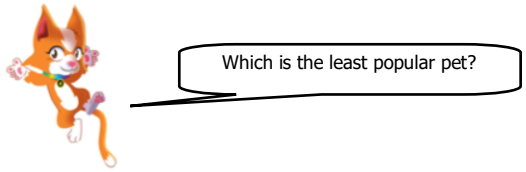
When the children have a good grasp of how to read the data, they can begin to ask and answer questions about the amounts. A simple example would be:

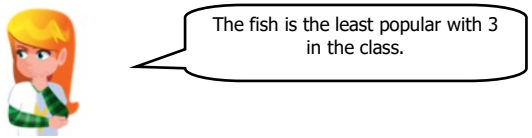




How to ask questions often needs modelling carefully to children so they know how to retrieve information that is in the data.

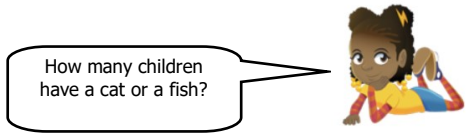
Other questions that develop language and understanding would include





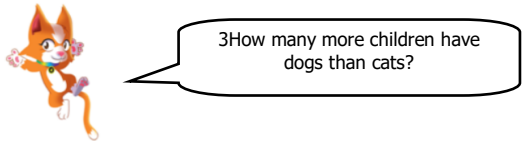
Totalling and Comparing

Questions become more complex when totalling and comparing, with the language used often making it complex for the children.

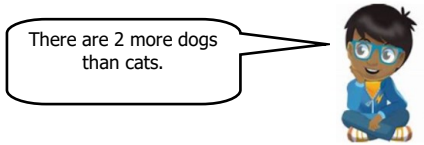


This requires the children to understand that if 6 children have a cat and 3 children have a fish, a simple addition shows that 9 children have a cat or a fish. A common misconception here is just to look at one category, for example, cat - 6.

Another challenging question is



with children often jumping to the answer of 8. It is necessary to address this misconception quickly and this can be done by comparing a visual of the data. To begin with, this is best to do with blocks representing 1 amount. For example:



Year 2 Mathematics Knowledge Organiser

Measurement

Key Concepts

- choose and use appropriate standard units to estimate and measure
  - length/height in any direction
  - mass
  - temperature
  - 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 =

Key Vocabulary

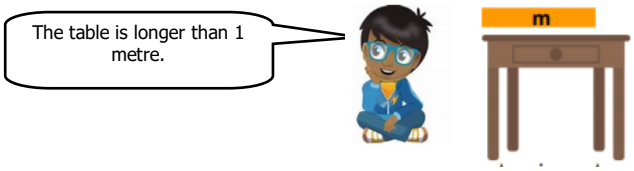
- metres/centimetres (m/cm)
- kilograms/grams (kg/g)
- litres/millilitres (l, ml)
- Degrees Celsius (°C)
- more than/less than
- taller/tallest
- longer/longest
- shorter/shortest
- heavier/lighter/heaviest/lightest
- warm/cold/warmer/colder

Choose Appropriate Standard Units

In YR2 the focus is on standard units of measure.

Length

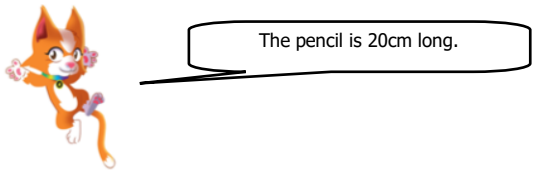
Using metres helps to develop an understanding of the measurement of larger objects within and beyond the classroom.



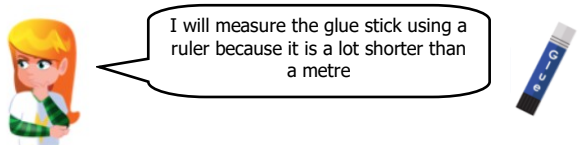
The next step is to recognise that a metre is not an appropriate way to measure smaller items.

Introducing a ruler at this stage supports this further. There is a skill involved with measuring using a ruler.

To be accurate, the object needs to be lined carefully with the 0, not the end of the ruler.

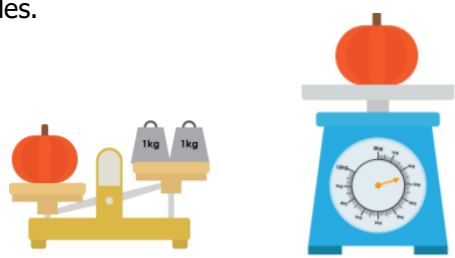


After measuring with both metres and centimetres, decisions can be made about the suitability of equipment to measure.



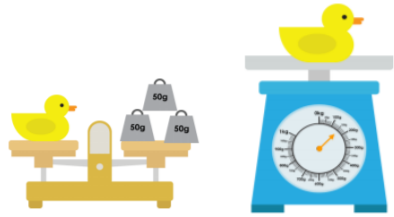
Mass

In a similar way to length, mass is explored with larger units first and approximate measurements can be used on both balance and measuring scales.



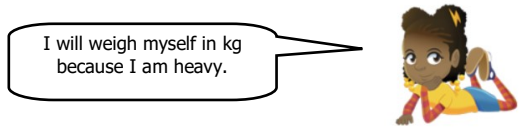
The pumpkin weighs more than 2kg

To develop this skill further, smaller units can be introduced to weigh lighter objects. Again, both types of scales can be used



The duck weighs 150g.

Following on from this work, it is then possible to choose the appropriate unit of measure to weigh items based on an estimation of how heavy the object is.



In Year 2, there is no expectation for any units of measure to be mixed.

For example, describing an object as 2m and 20cm in length is not necessary. Children work using metres or centimetres, so the object would simply be described as more than 2m.

Temperature

Using thermometers, scales are explored further. The unit 'degrees Celsius' is used as the standard unit. The higher the number on the scale, the warmer the item being measured.

Comparisons can be made between different objects

Year 2 Mathematics Knowledge Organiser

Measurement

The orange juice is 10 °C. The water is 20°C.

The water is warmer than the orange. .

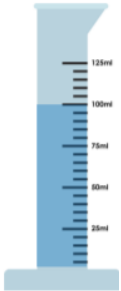
Capacity and Volume

The standard unit of volume, used to begin with, is a litre. This can be used to fill other vessels to describe their capacity. For example

The cup contains less than 1l of milk.

The bottle has a capacity of 2 litres.

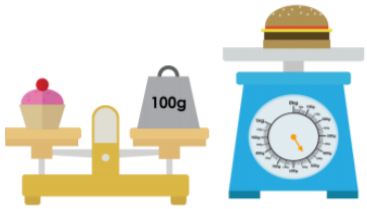
Measuring in millilitres is a more accurate way of measuring which involves reading of scales.



The volume is 100 millilitres.

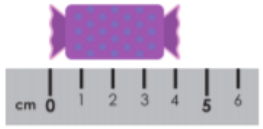
Compare and Order

Once skills of measuring have been secured, it is possible to combine them with the skill of using and = learnt earlier in the year to compare two objects:

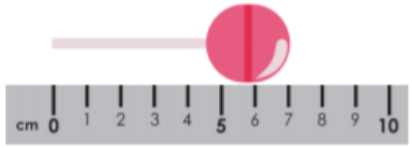


The burger is heavier than the cake.

Ordering involves measuring more objects and then organising according to the results:



Sweet	Length
chew	4cm
jelly bean	2cm
lollipop	7cm



jelly bean < chew < lollipop

Shape

Key Concepts

- 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.

Key Vocabulary

- Pentagon
- Hexagon
- Sides
- Curved/ Straight
- Edges
- Vertex/ Vertices/ Corners
- Faces
- Cuboid, Cone, Prism
- Quadrilateral
- Polygon
- symmetry
- Vertical

2D Shapes

Children will build on their year 1 knowledge of recognising 2D shapes to begin describing their properties.

This is a triangle because it has 3 sides and 3 vertices

Vertices are another way of describing corners, where 2 or more lines meet. If a shape only has 1 corner, it is called a vertex.

Year 2 Mathematics Knowledge Organiser

Shape

Any shape with 6 straight sides is a hexagon.

A polygon is any 2D shape with straight sides.

A quadrilateral is a 4-sided polygon.

Symmetry

Children should be taught to recognise whether or not a shape has a line of symmetry. In Year 2, it is only necessary to identify a vertical line of symmetry. This can be done on every-day objects and shapes.

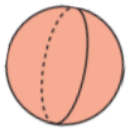
Vertical line of symmetry	No line of symmetry
	

3D Shapes Vocabulary is key when describing properties of 3D shapes, with the introduction of new mathematical language. Children will justify the recognition of 3D shapes by describing their properties

The red shape is a cube because it has 6 faces, 12 edges and 8 vertices.

The blue shape also has 12 edges, 8 vertices and 6 faces but it is a different shape. It is a cuboid.

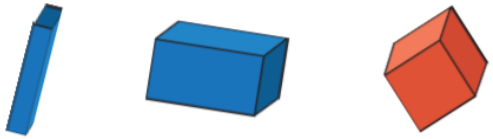
Exploring different 3D shapes will help to reinforce the use of this language. Recording the properties supports this further. For example:



Shape	Vertices	Edges	Faces
Square based pyramid	5	8	5
Triangular based pyramid	4	6	4
Triangular prism	6	9	5
Cylinder	0	2	3
Cone	1	1	2
Cube	8	12	6
Cuboid	8	12	6

Identify 2D Shapes on 3D Shapes

When a clear understanding of 2D and 3D shapes is achieved, the next step is to identify the 2D shapes on the surfaces of 3D shapes.



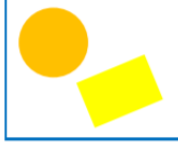
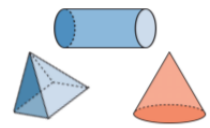
A cuboid can have 6 rectangular faces, or some faces can be squares. . .

A cube is a special type of cuboid, it always has 6 square faces.

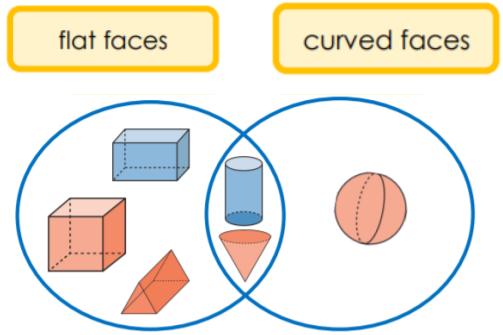
Cones and cylinders both have circular faces.

Compare and Sort 2D and 3D Shapes

Comparing and sorting can be done simply…

2D	3D
	

Or in a more advanced way by considering the properties of each shape carefully and identifying similarities and differences.



A sphere is the only shape that only has curved faces.