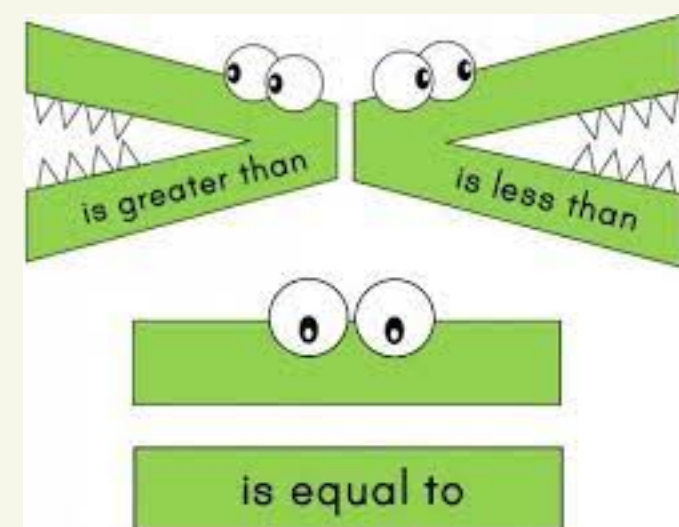


YEAR 2: PLACE VALUE

Facts

The place of a digit in a number decides what value the digit has.

tens	ones



The greedy crocodile will eat the biggest number!

Digits	Teens	Tens
0 zero	11 eleven	10 ten
1 one	12 twelve	20 twenty
2 two	13 thirteen	30 thirty
3 three	14 fourteen	40 forty
4 four	15 fifteen	50 fifty
5 five	16 sixteen	60 sixty
6 six	17 seventeen	70 seventy
7 seven	18 eighteen	80 eighty
8 eight	19 nineteen	90 ninety
9 nine	100 hundred 1,000 thousand	

Counting in 3s

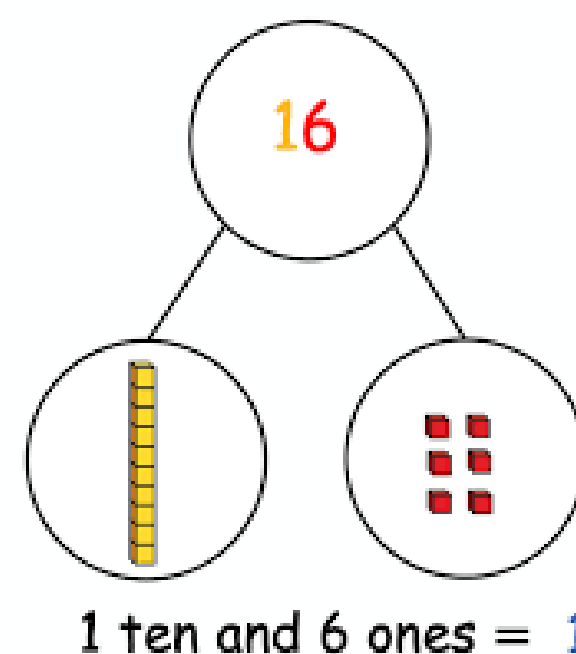
3, 6, 9, 12, 15, 18, 21, 24, 27, 30

Strategies



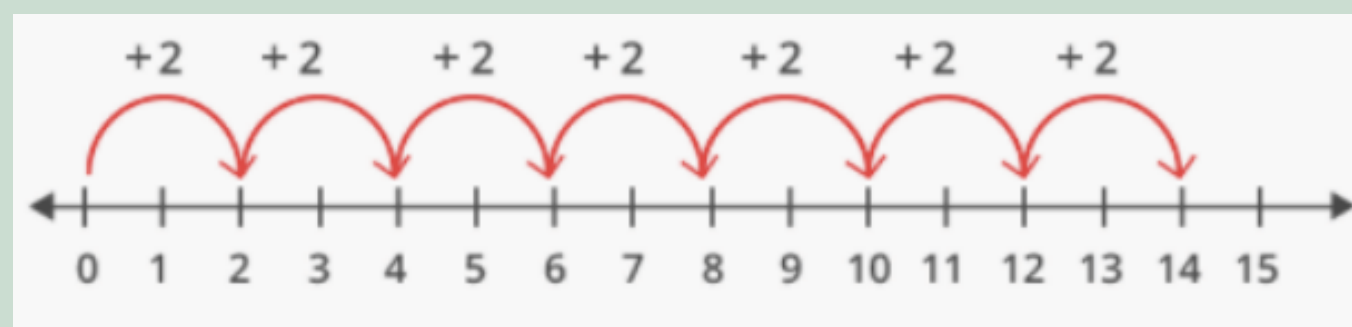
Hundreds	Tens	Ones
 Flat=100	 Long=10	 Unit=1

Part whole model



A part-part-whole model has the whole number on its own with 2 of its parts coming off.

Use a number line to identify and estimate numbers:



Problem Solving

There are 40 cookies in the jars:



Tens	Ones
Tens	Ones

= 41

= 41

VOCABULARY

more
less

place value
digit
number

ones
tens
hundreds

greater than
less than
equal to

YEAR 2: ADDITION & SUBTRACTION

Facts

+

Addition can happen in any order. This means it is commutative.



Number bonds to 20

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

Subtraction must always have the **largest** number first in a problem.

$$16 - 5 = 11$$

Strategies

$$24 + 32 = 56$$

Add the **tens** first, then add the **ones**



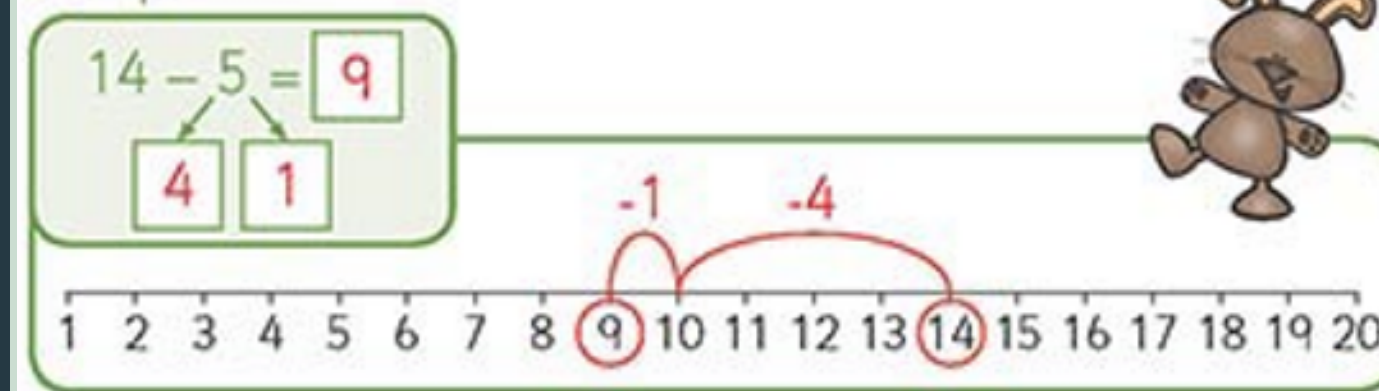
Check your answers with the inverse - the opposite operation and numbers:

$$19 - 6 = 13$$

$$13 + 6 = 19$$

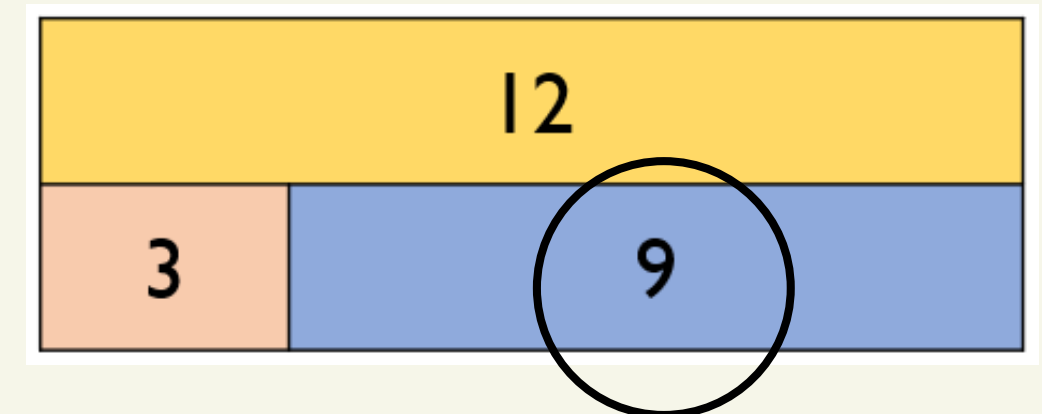
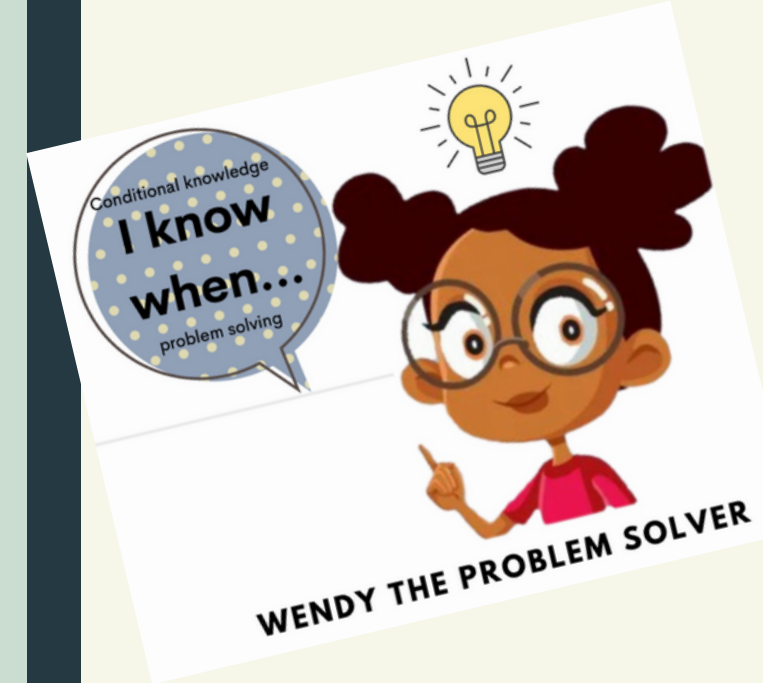
When adding or subtracting across 10, partition the number to get to the nearest 10 first:

Example:



Problem Solving

There are 12 cars in a car park. 3 leave. How many are left? **9**



The fruits are reduced by 10p -



22 p



68 p

22p

$$20p - 10p = 10p$$

$$10p + 2p = 12p$$

Using bonds to 10 to solve bigger problems:

If $1 + 9 = 10$ then $10 + 90 = 100$

If $2 + 8 = 10$ then $20 + 80 = 100$

If $3 + 7 = 10$ then $30 + 70 = 100$

If $4 + 6 = 10$ then $40 + 60 = 100$

If $5 + 5 = 10$ then $50 + 50 = 100$

VOCABULARY

more

less

addition

add

plus

subtract

minus

take away

altogether

difference

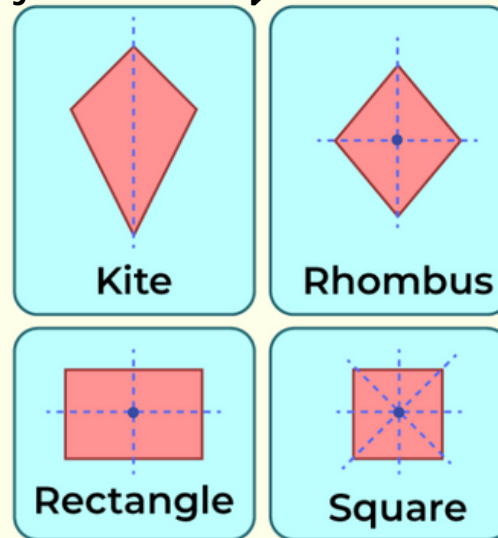
equals

YEAR 2: SHAPE

Facts

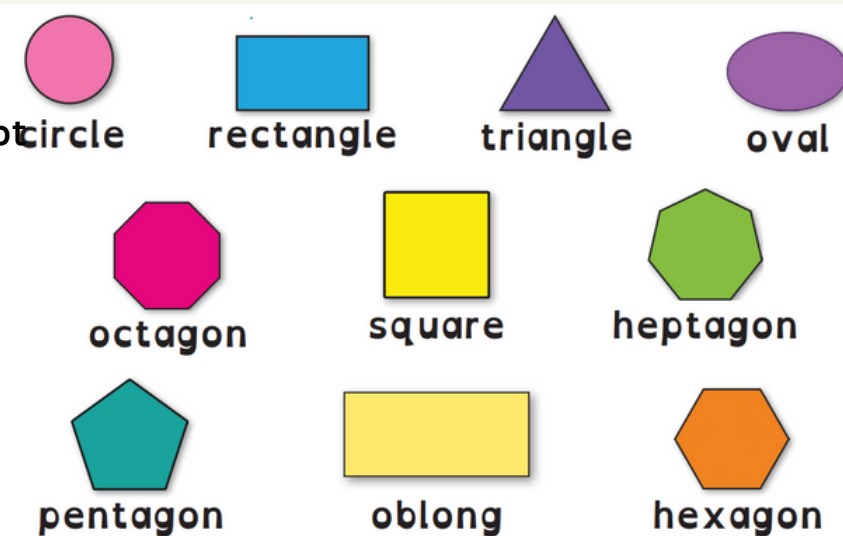
Symmetry

A line of symmetry is an invisible line that cuts a shape exactly in half. Both sides of the half must be equal.



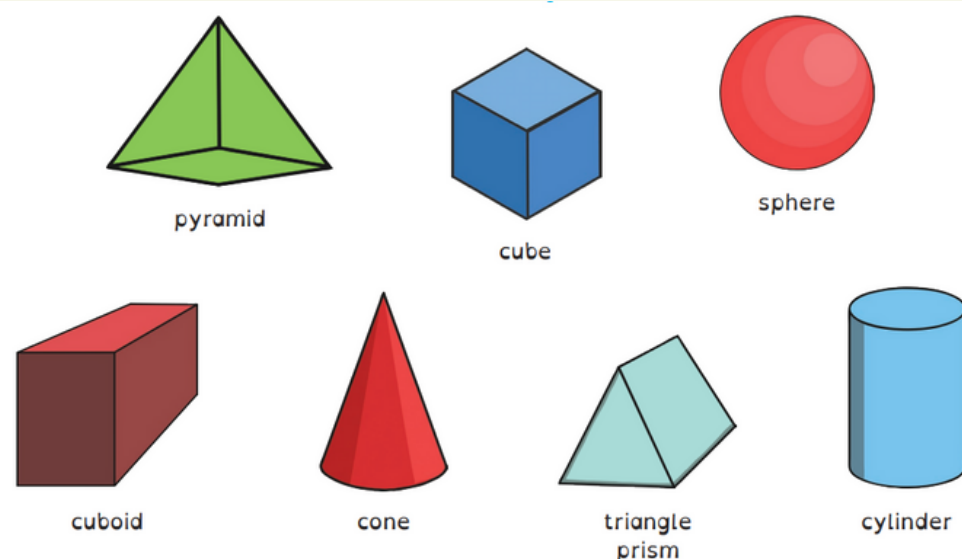
2D shapes

A flat shape that cannot be held or picked up.



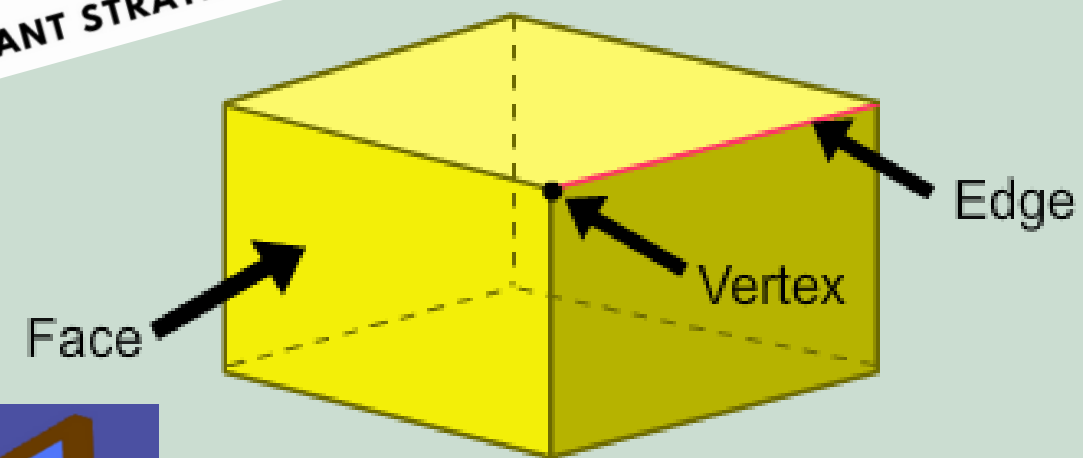
3D shapes

A shape which has a length, width and height. It can be picked up.

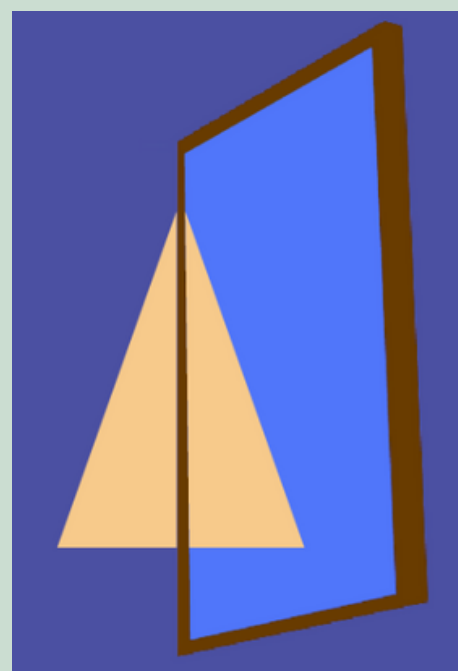


Strategies

When counting the faces, edges or vertices of a 3D shape, it is helpful to mark the ones that you have counted so that you don't count the same ones twice!



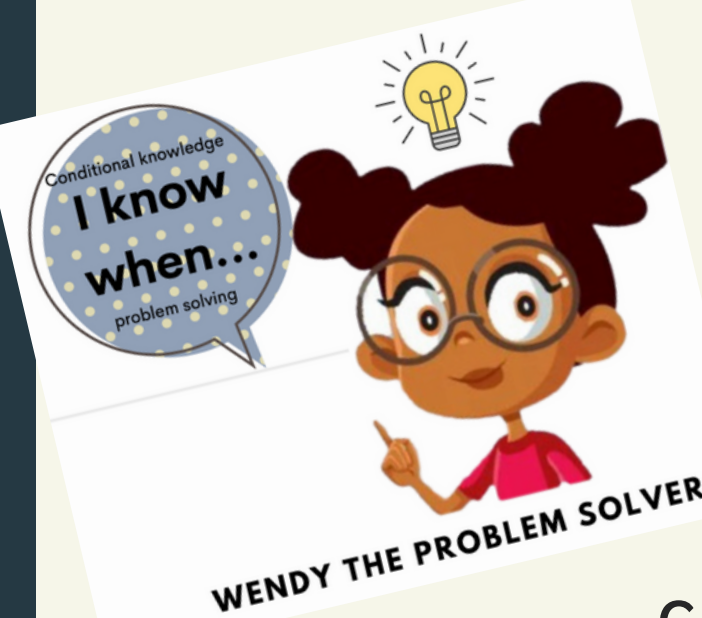
Using a mirror can help you check your line of symmetry. If it is correct, the reflection will look exactly the same and show the complete shape.



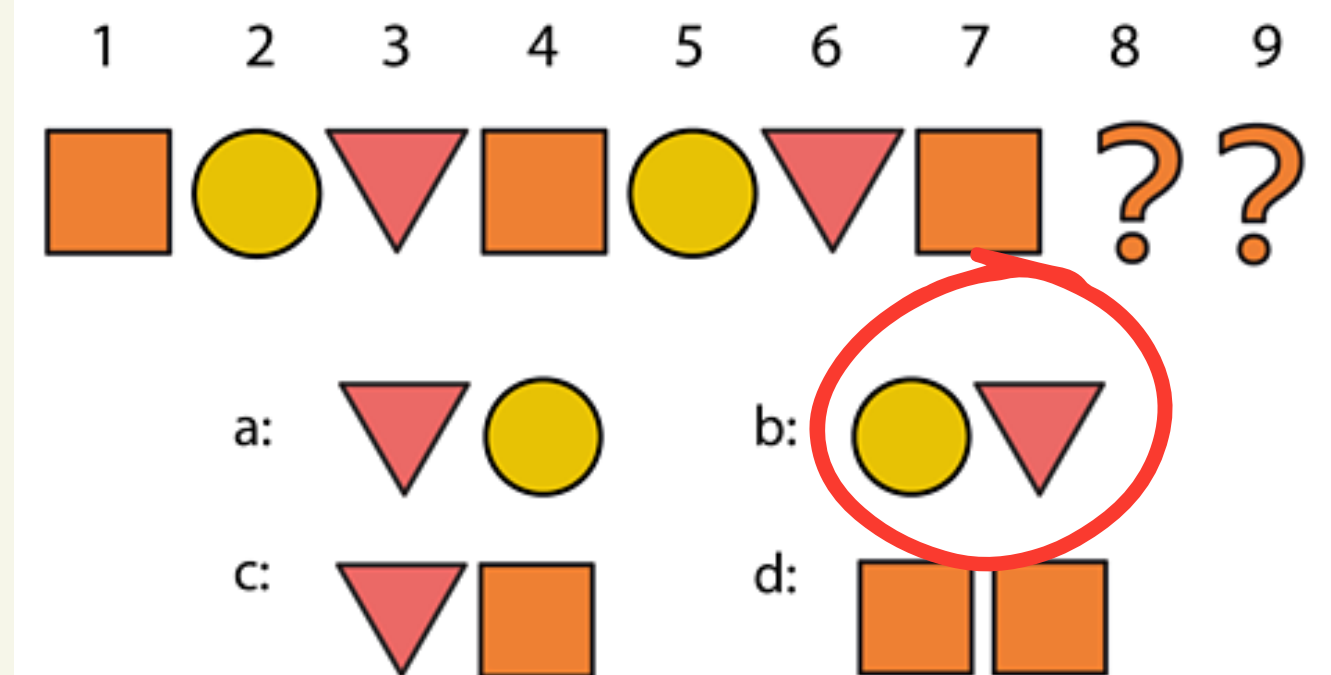
Shapes can be sorted in many different ways, such as number of sides, 2D/3D.

	4 corners or less	More than 4 corners
Symmetrical		
Not symmetrical		

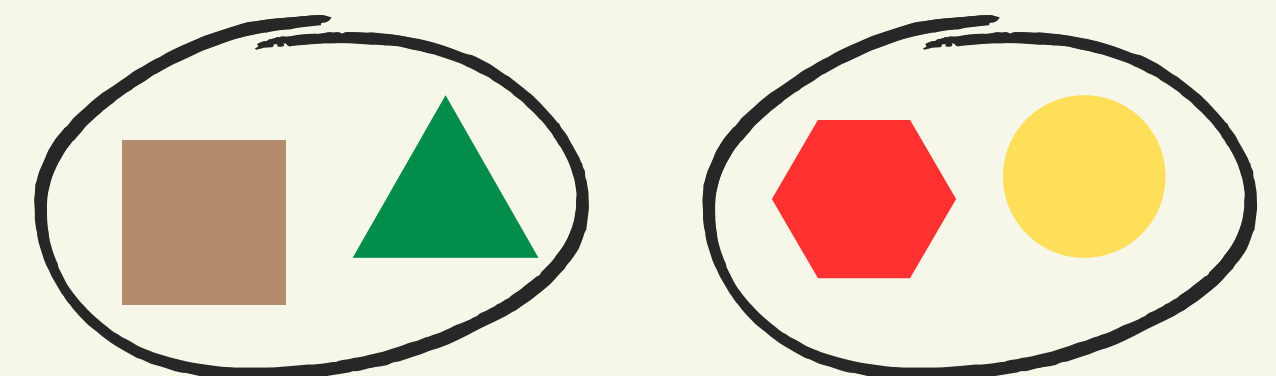
Problem Solving



Complete the pattern:



I have 2 shapes in my basket, together they have 7 sides. What shapes could I have?



VOCABULARY

2D
3D
side

face
edge
vertex

vertices
symmetry
pattern

curved
straight
round

YEAR 2: MULTIPLICATION & DIVISION



Facts

X

In multiplication the numbers can be in any order. This means it is commutative. The answer is always bigger.

÷

Division must always have the largest number first in a problem. The answer is always smaller.

Even numbers end in: 0, 2, 4, 6, 8

Odd numbers end in : 1, 3, 5, 7, 9

1x2=2
2x2=4
3x2=6
4x2=8
5x2=10
6x2=12
7x2=14
8x2=16
9x2=18
10x2=20

5 times table

1x5=5
2x5=10
3x5=15
4x5=20
5x5=25
6x5=30
7x5=35
8x5=40
9x5=45
10x5=50
11x5=55
12x5=60

10 times tables

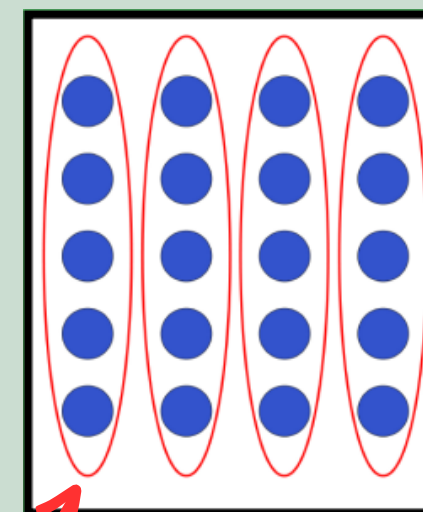
1x10=10
2x10=20
3x10=30
4x10=40
5x10=50
6x10=60
7x10=70
8x10=80
9x10=90
10x10=100
11x10=110
12x10=120



Strategies

÷

Grouping and sharing



$20 \div 4 =$ (the amount in one group)

$$20 \div 4 = 5$$

X

Equal Groups

Use the same number of ones in each group.



$$3 \times 5 = 15$$

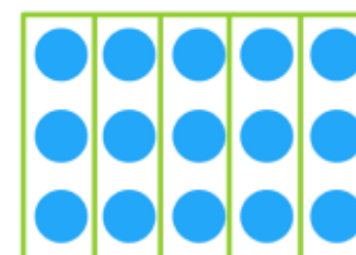
Repeated Addition

$$5 + 5 + 5 = 15$$

$$3 \times 5 = 15$$

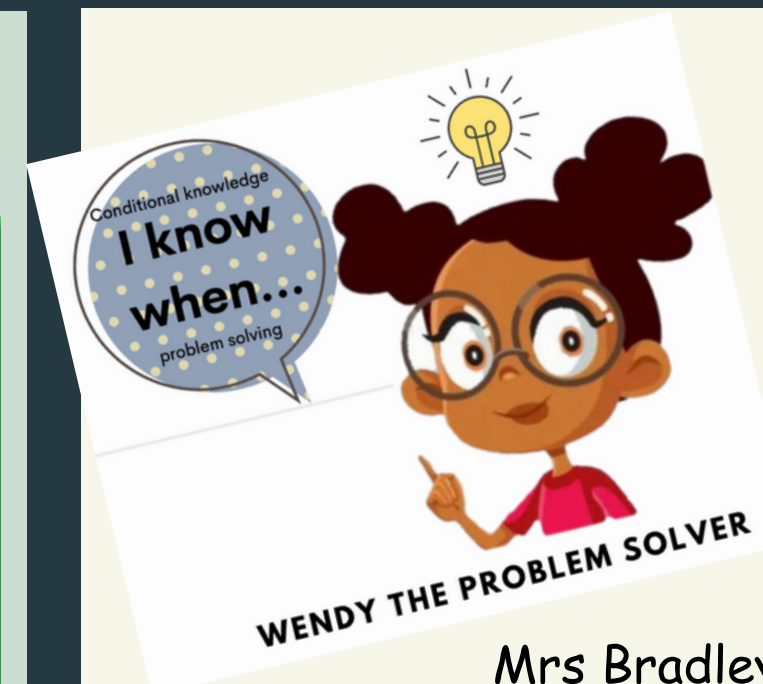
Array

Rows and columns with an equal amount in each.



$$5 \times 3 = 15$$

Problem Solving

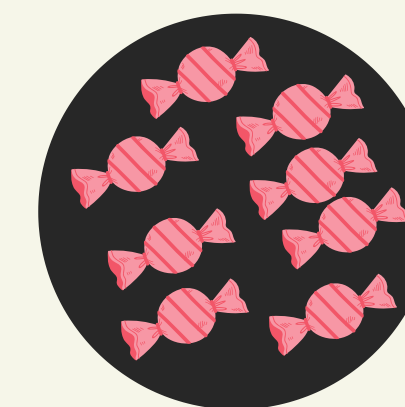
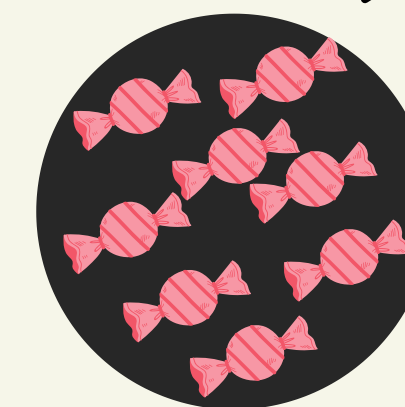
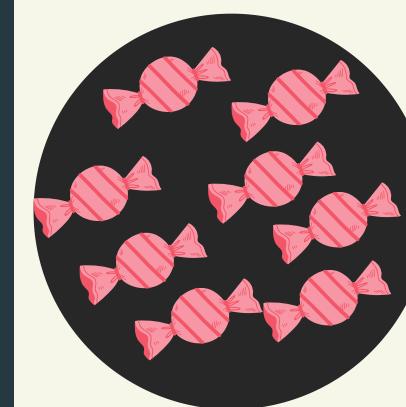


Mrs Bradley has a bag of 24 sweets. She shares them equally between 3 tables of children. How many does each table get?



8

sweets per table



VOCABULARY

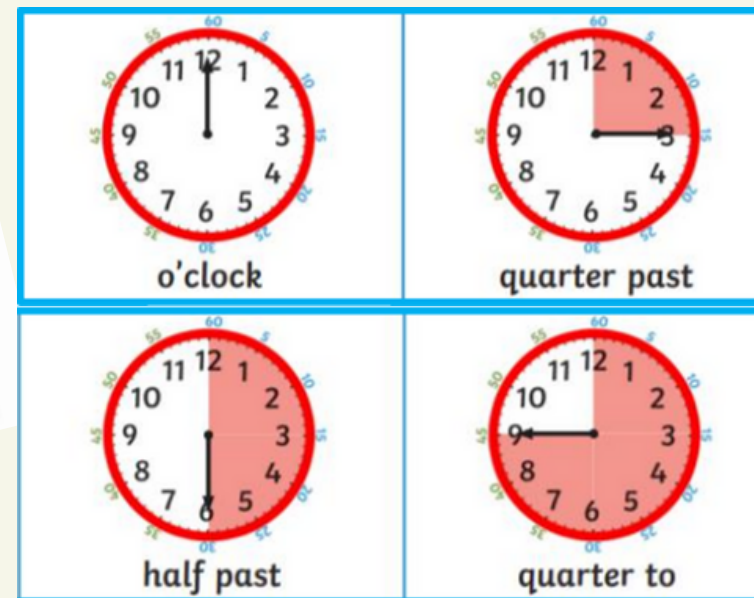
multiply
divide
share

group
lots of
times tables

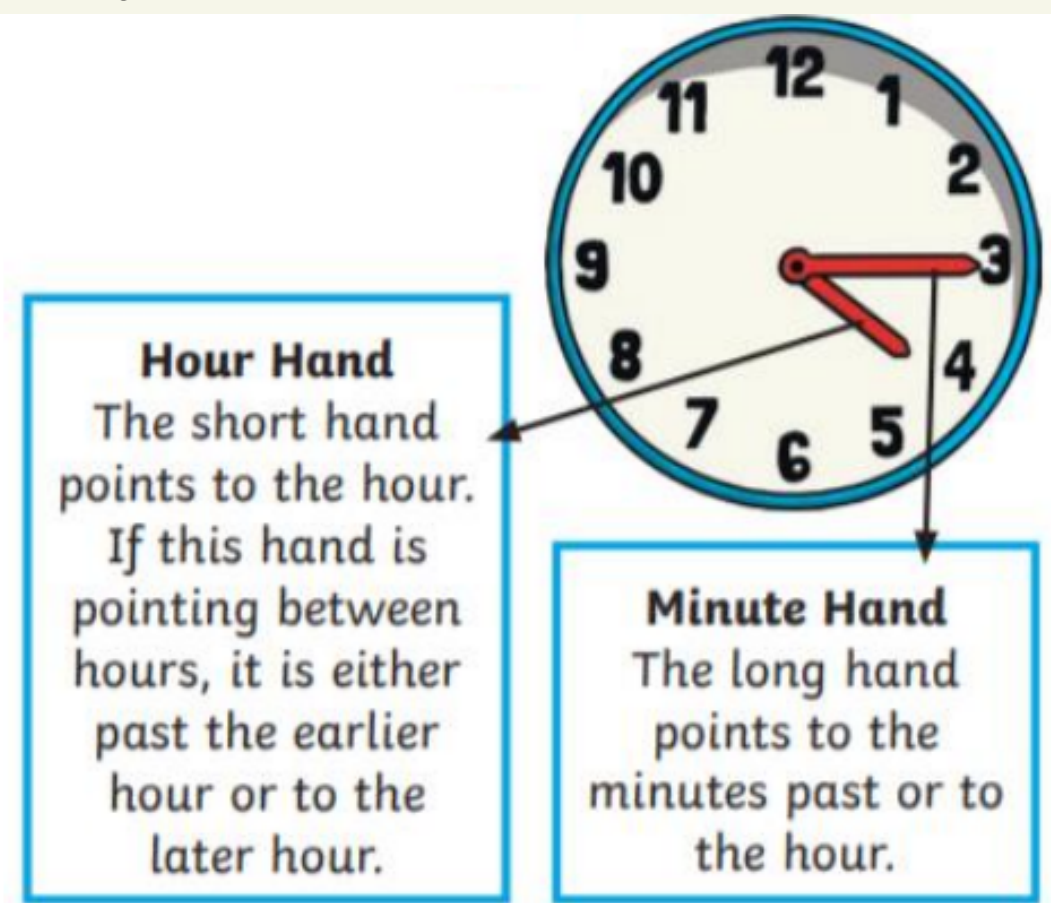
array
repeated
equal

YEAR 2: TIME

Facts

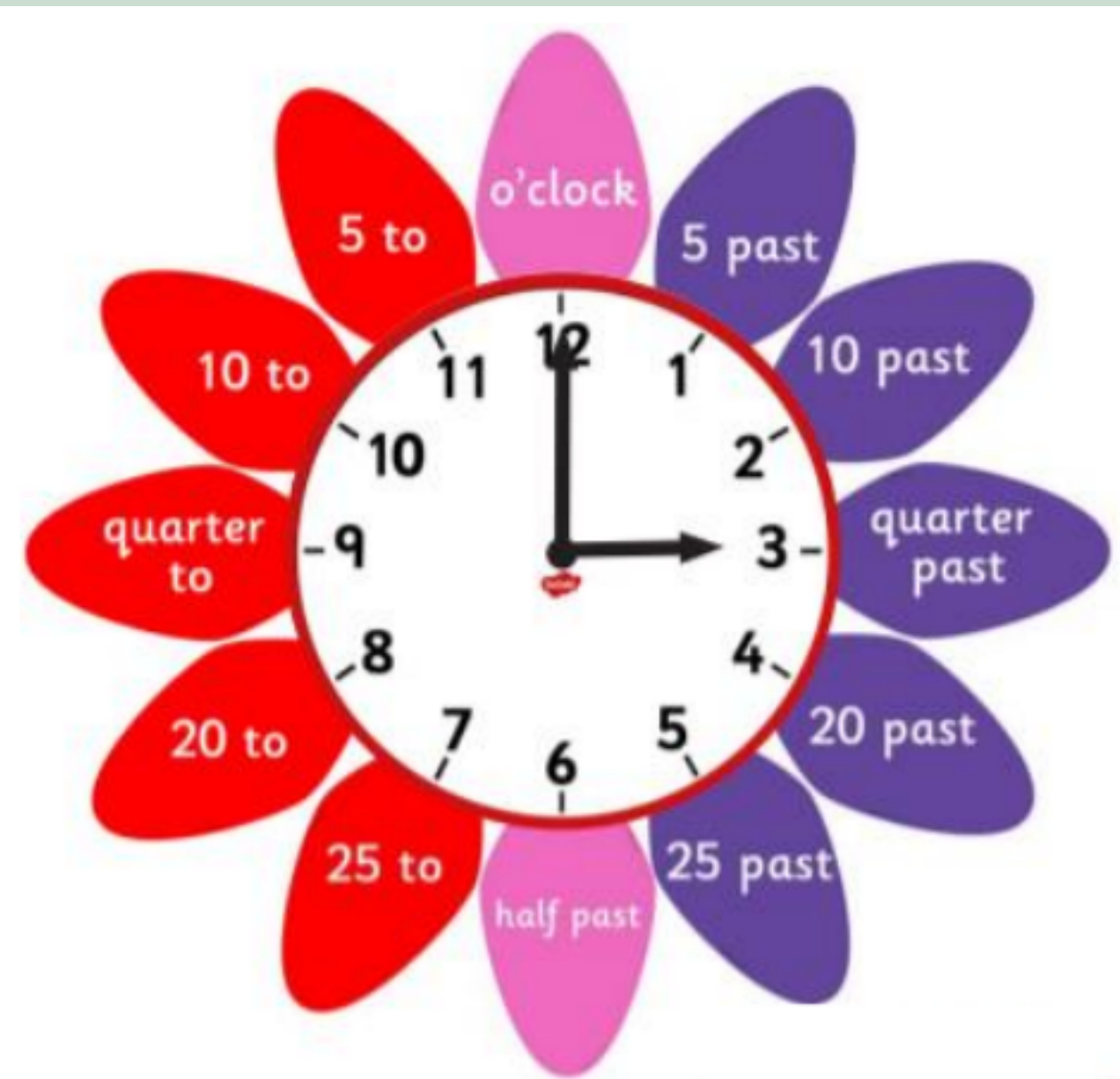


1 week = 7 days
 1 day = 24 hours
 1 hour = 60 minutes
 half an hour = 30 minutes
 quarter of an hour = 15 minutes

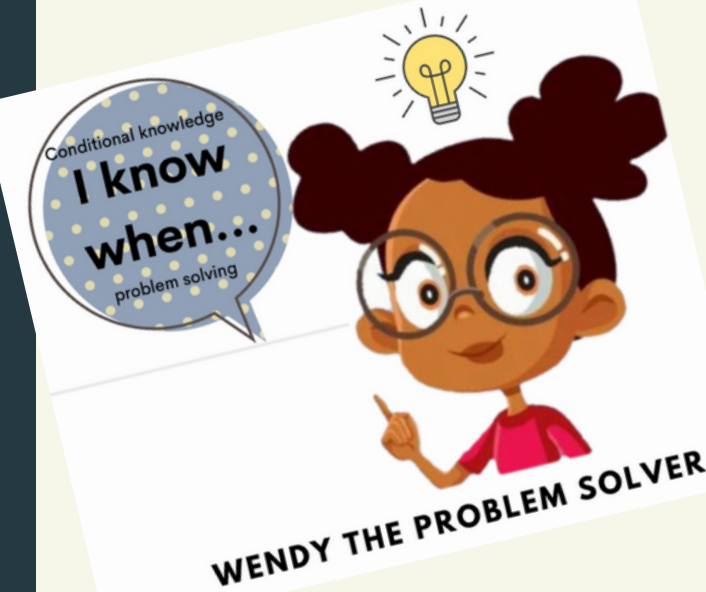


Strategies

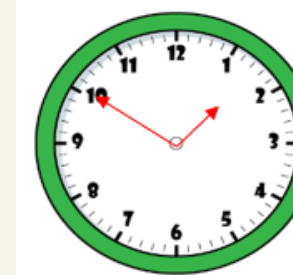
There are 5 minutes between each number on the clock face. E.g. if the minute hand is on the number one, it is 5 minutes past the hour. Once the minute hand goes past the 6, it becomes how many minutes are left until the next hour.



Problem Solving



Who is correct?



Dora: It is ten to one.

Dora

Amir: It is ten past ten.

Amir

Alex: It is ten to two.

Alex

Alex is correct because the hour hand has gone past the one. The minute hand has gone past the 6 so it is 'to' the next hour.

VOCABULARY

clockwise

time
 clock
 hand

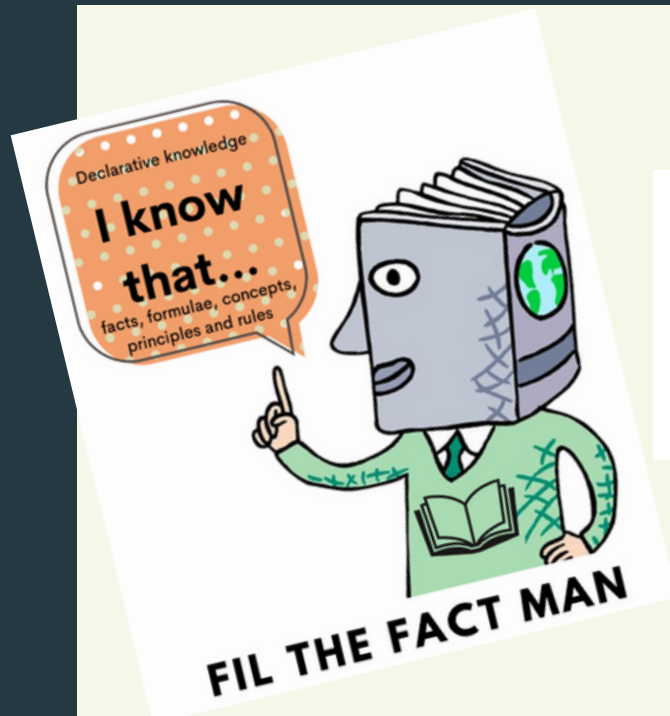
hour
 minute
 o'clock

half past
 quarter past
 quarter to

shorter
 longer
 duration

YEAR 2: MONEY

Facts



£1 =
100p



How to write values and amounts

1) Use £ or p symbol but not both.

✓ £5.67 x £5.67p

✓ £3.40 x £3.40p

2) When writing pounds and pence together always include 2 numbers to show the amount of pennies.

✓ £2.05 x £2.5

✓ £6.09 x £6.9

Strategies

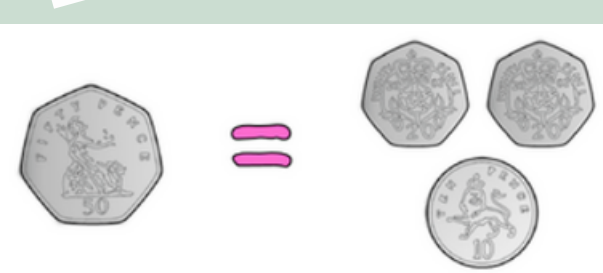


It is easier to solve money problems by converting pounds into pence, especially where it involves mixed amounts:

$$£1.20 - 40p =$$

Remember £1 = 100p so:

$$120p - 40p = 80p$$



$$50 = 20 + 20 + 10$$

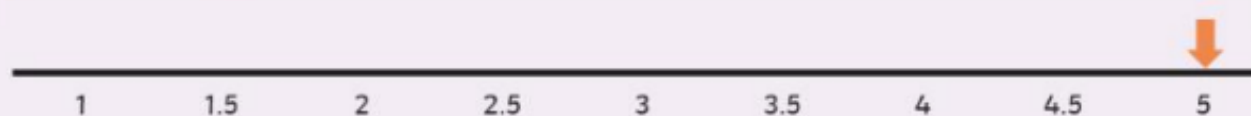
Calculating Change

So, you need to subtract the actual cost of the item from the total paid.

$$\text{total paid} - \text{cost of item} = \text{change}$$

$$£5 - £1.50 = \dots\dots\dots$$

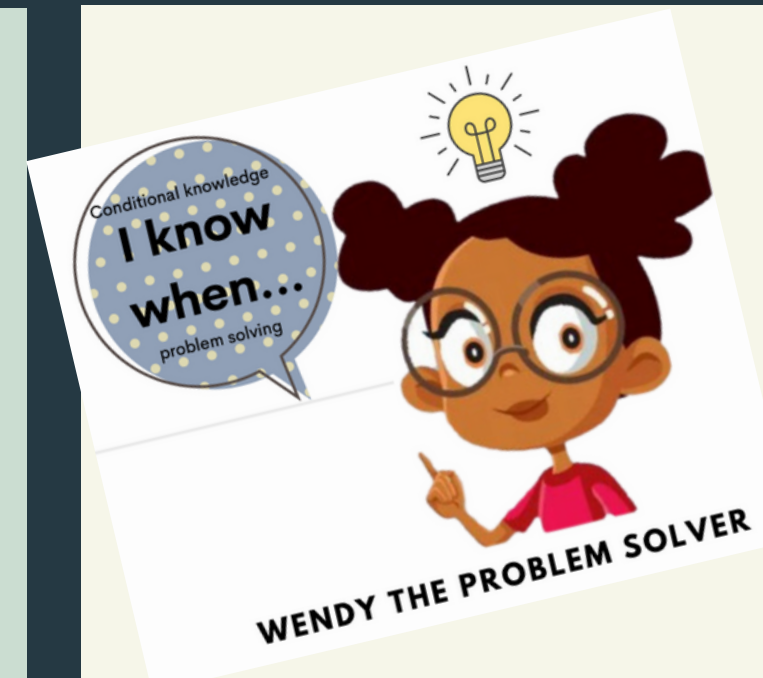
We could use a number line to work this out.
Count back from 5 to 1.50



The difference is 3.5, so you will receive £3.50 in change.



Problem Solving



Circle the odd one out.

23 p = 20 p, 2 p, 1 p

25 p = 20 p, 5 p

28 p = 20 p, 8 p

There is no such thing as an 8p coin!

VOCABULARY

pounds
pence
coins

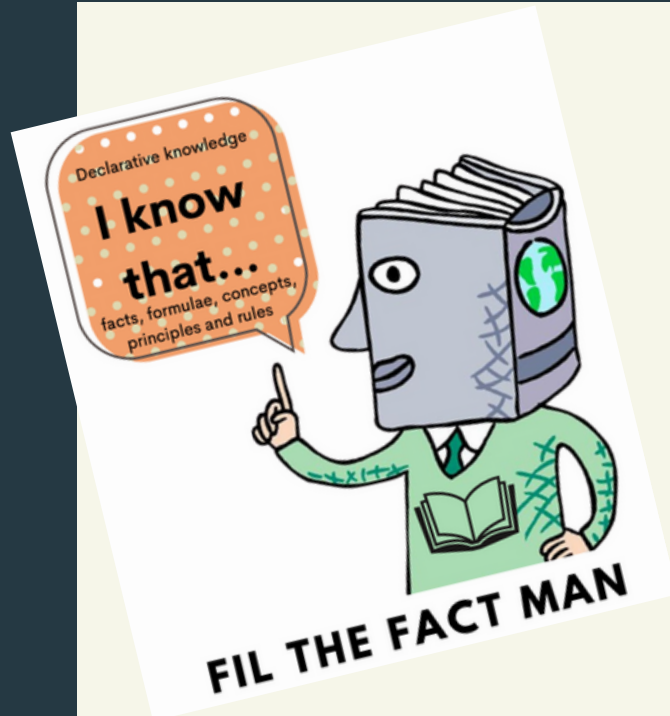
notes
penny
value

change
amount
pay

YEAR 2: STATISTICS

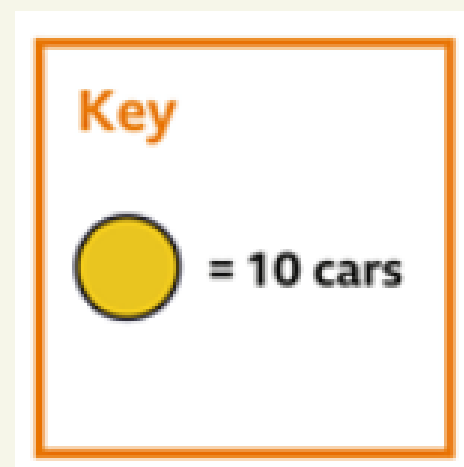
Facts

Statistics help us to collect and summarise data. We can then use the information collected to answer questions and to solve problems.



Tally:

Each mark represents 1. The first 4 are vertical lines and the 5th tally goes across them horizontally.



Key:

Gives us information about what is being represented in a chart.

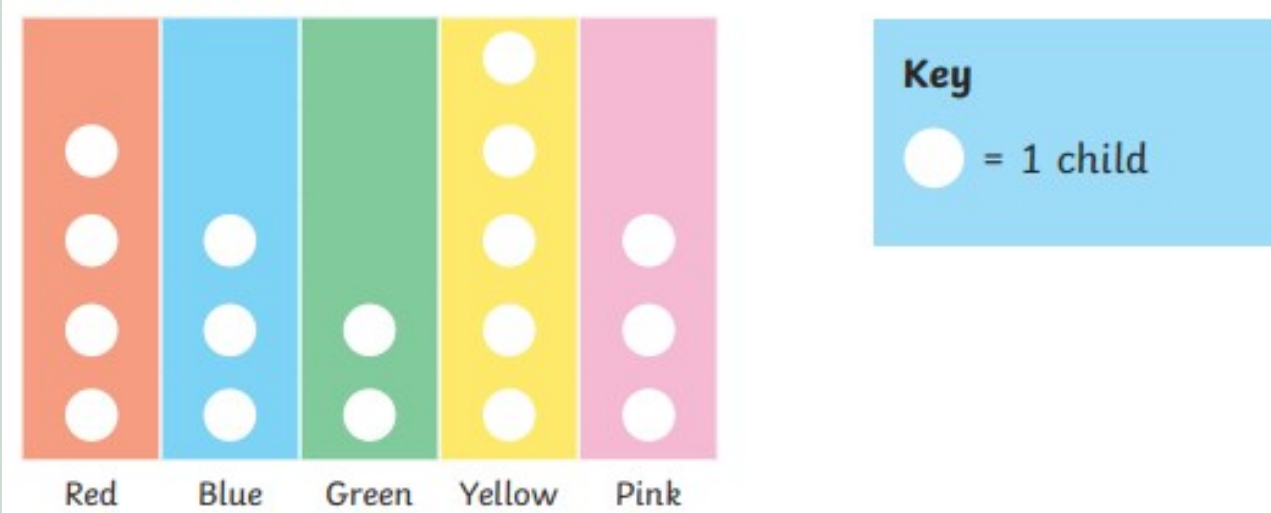
Strategies



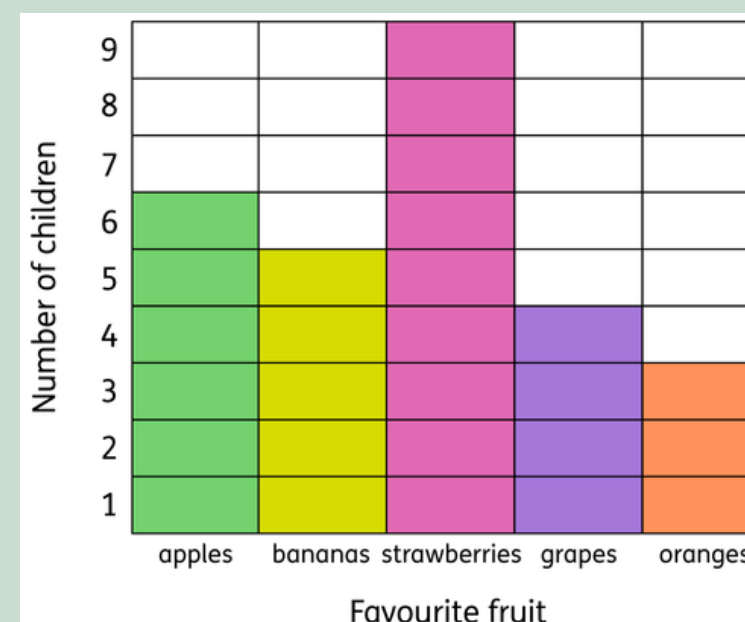
Tally Chart

	TALLY	NUMBER
spider		11
ant		22
snail		3
butterfly		6
bee		8

Favourite Colour

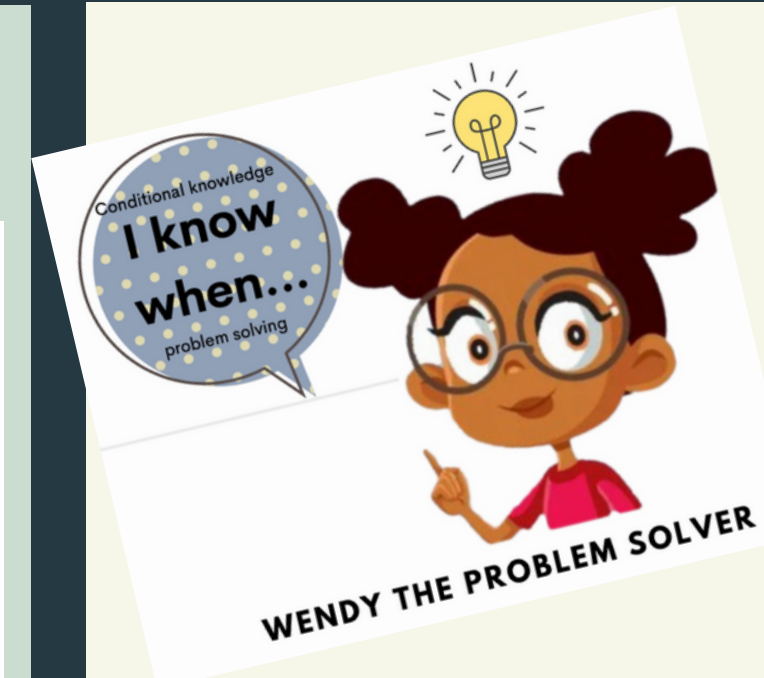


Pictogram



Block Diagram

Problem Solving



The chart shows the number of candies and cupcakes 4 children have.

Sarah	
Kim	
Theo	
Amy	

Kim has more cupcakes than Theo's candies.

How many **more**?

Kim has 2 candies and **6 cupcakes**

Theo has **4 candies** and 3 cupcakes

Kim has **2 more** cupcakes than Theo has candies.

VOCABULARY

data
key
table

total
compare
symbol

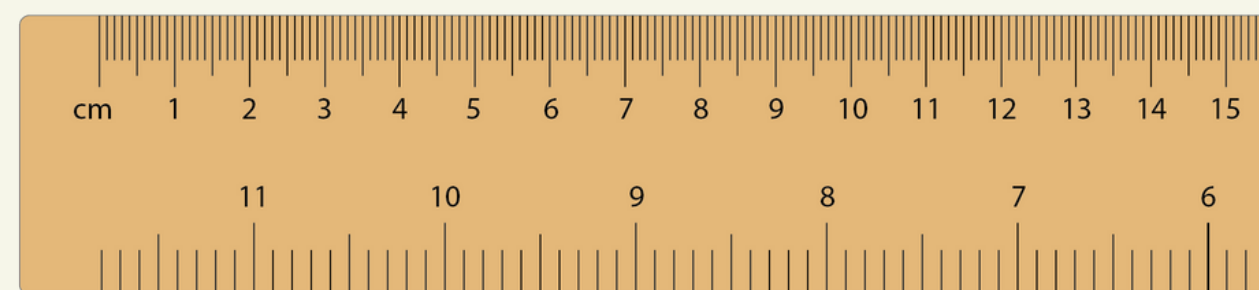
interpret
statistics
tally

block diagram
pictogram
chart

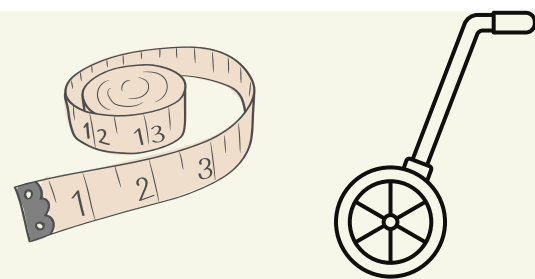
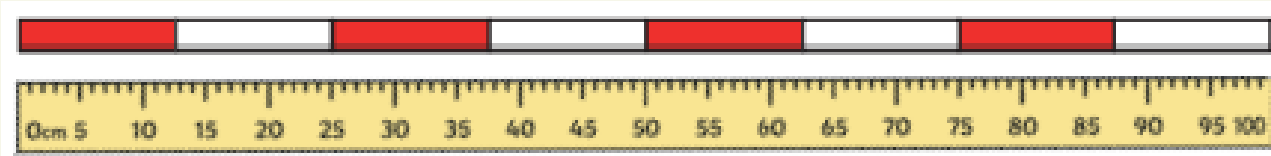
YEAR 2: MEASURE - LENGTH AND HEIGHT

Facts

Centimetres are often used to measure smaller items. You will find these on a ruler. Centimetres are often shortened to **CM**.



Metres are what we use to measure larger items. We can use a metre stick, a trundle wheel or a tape measure to do this. Metres are often shortened to **M**.

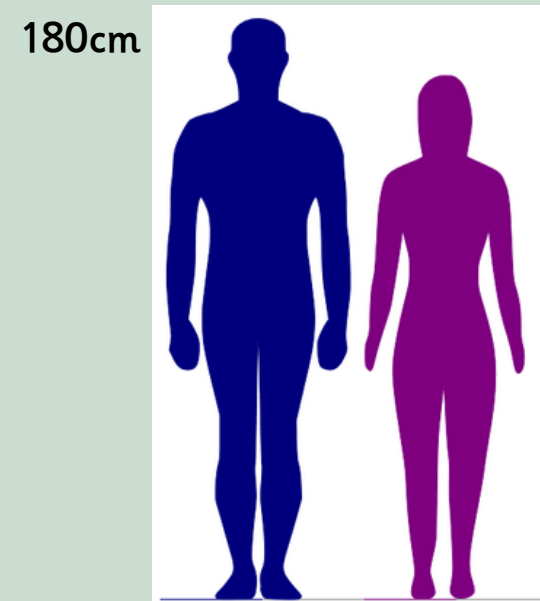
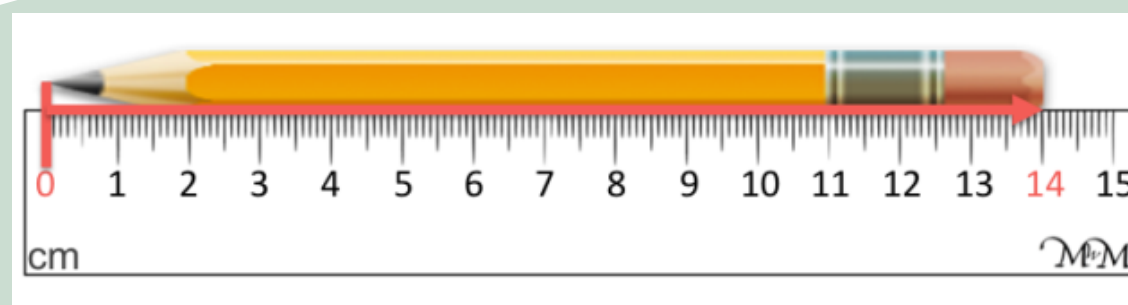


1 metre = 100cm

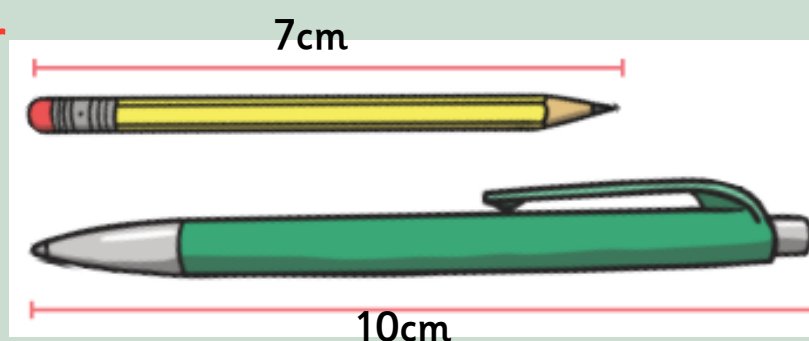
Strategies

Be careful to always measure from zero!

The pencil is 14cm long.



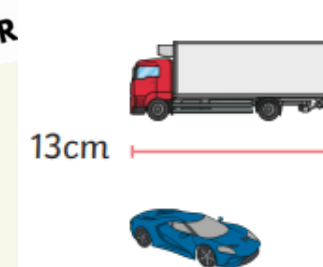
The pencil is **shorter** than the pen. The pen is **longer** than the pencil.



Problem Solving

Subtraction with Length

WENDY THE PROBLEM SOLVER



The car is 6cm **shorter** than the truck. How long is the car?

$$13\text{cm} - 6\text{cm} = 7\text{cm}$$

Multiplication with Length



The chain has 5 links. Each link is 5cm long. How long is the chain?

$$5 \times 5\text{cm} = 25\text{cm}$$

Division with Length



The string of beads is 20cm long. How long is each bead?

$$20\text{cm} \div 10 = 2\text{cm}$$

Halving with Height



The daffodil is half as tall as the tulip. How tall is it?

$$\text{Half of } 18\text{cm} \text{ is } 9\text{cm}.$$

VOCABULARY

length
height
longer

shorter
taller
measure

centimetre (cm)
metre (m)
ruler

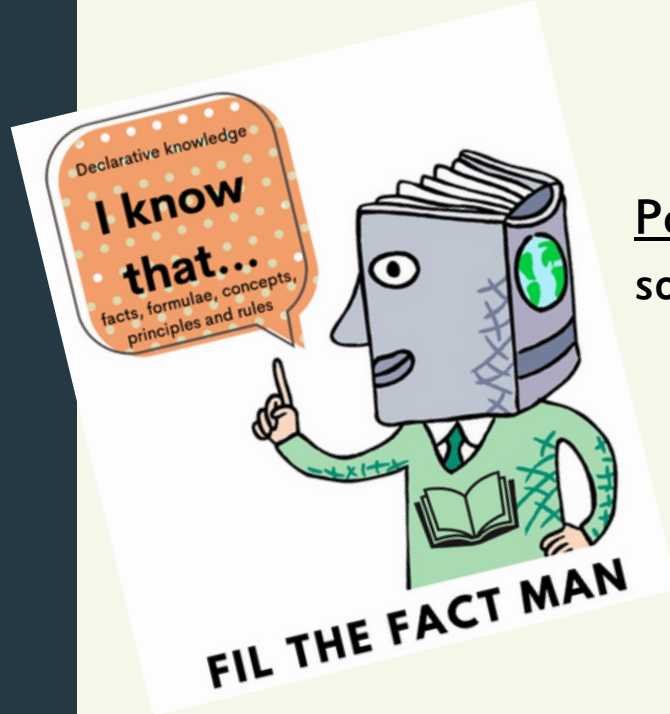
tape measure
metre stick
compare

YEAR 2: POSITION & DIRECTION

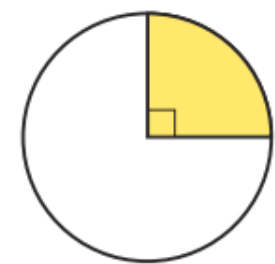
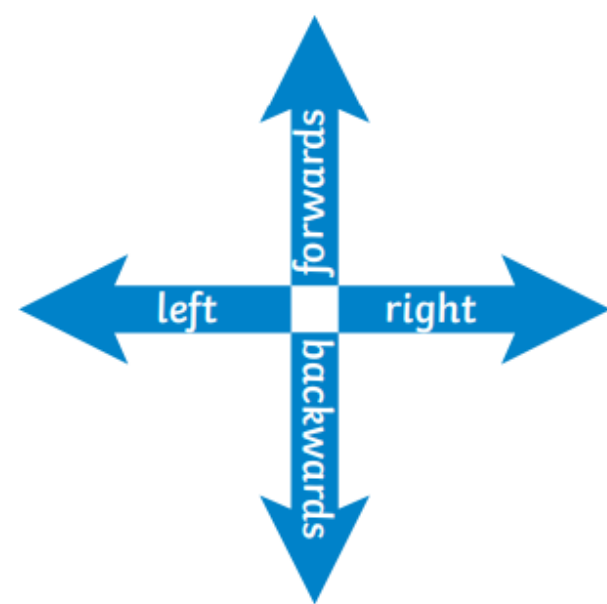
Facts

Position means the location of something - where it is.

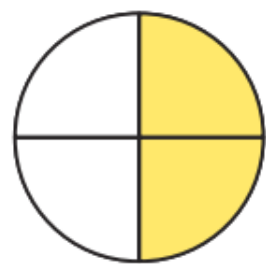
Direction means the path along which something moves.



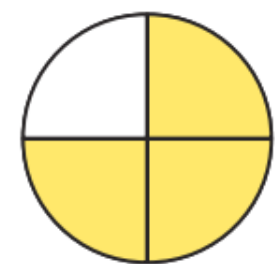
Which way is forwards, backwards, left or right depends on which way the person/thing is facing.



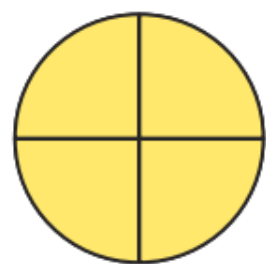
quarter turn



half turn



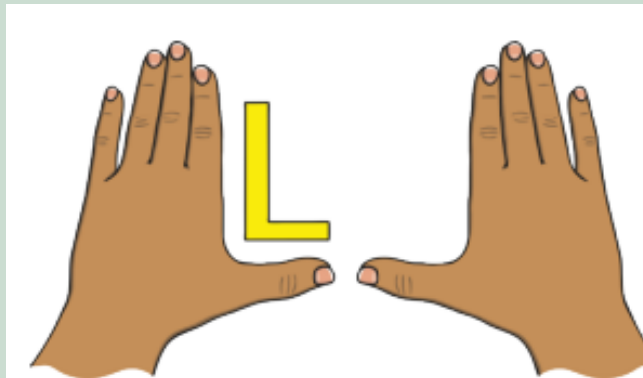
three-quarter turn



full turn

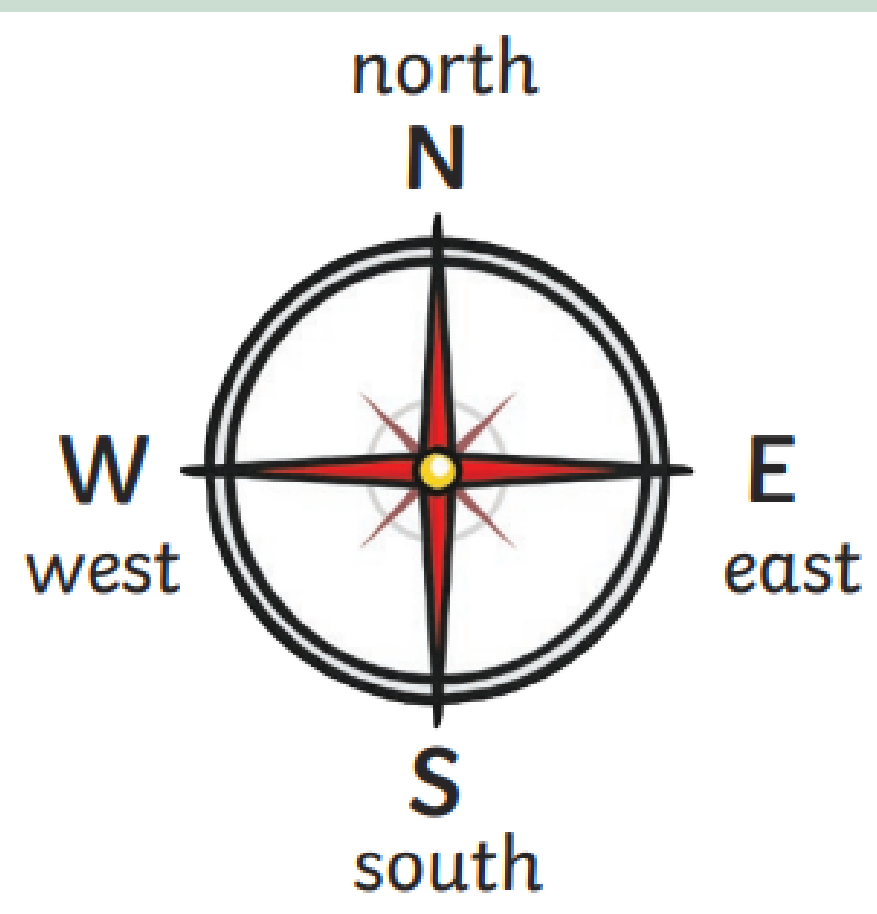
A full turn takes you back to where you began!

Strategies



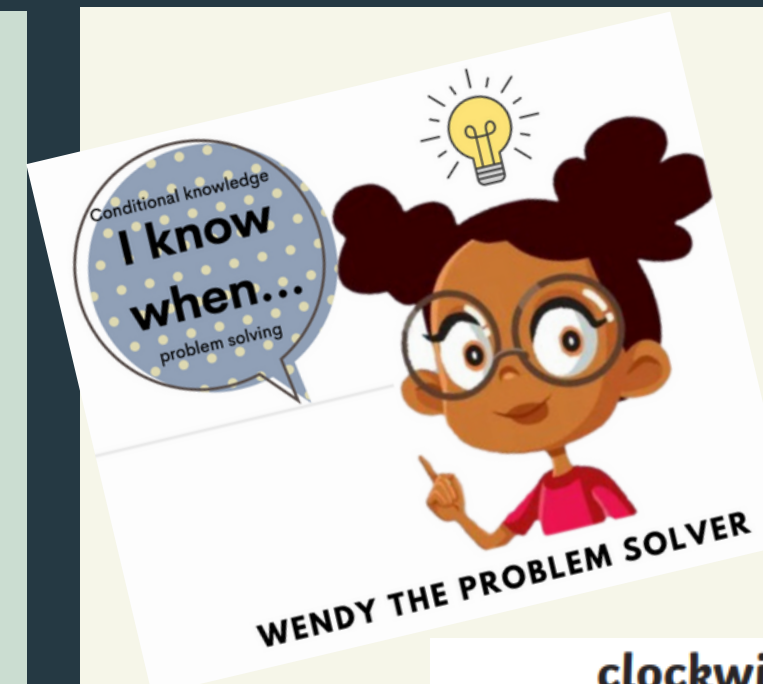
Left and Right

The hand that makes an L shape is the **left hand**.



Never
Eat
Shredded
Wheat

Problem Solving



clockwise

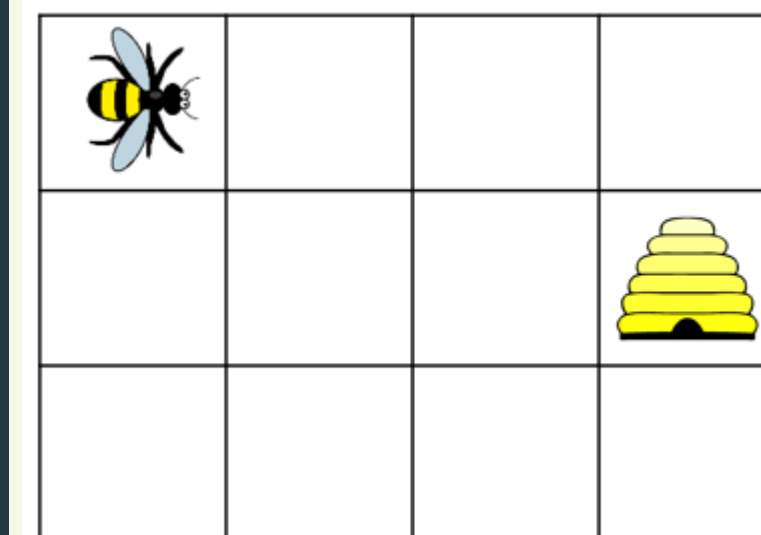


anticlockwise



If the turn is in the same direction as the hands of a clock, it is **clockwise**.

If the turn is in the opposite direction to the hands of a clock, it is **anticlockwise**.



To get the bee to the hive, it could:

Turn a quarter turn clockwise then one step forward.

A quarter turn anti-clockwise then 3 steps forward.

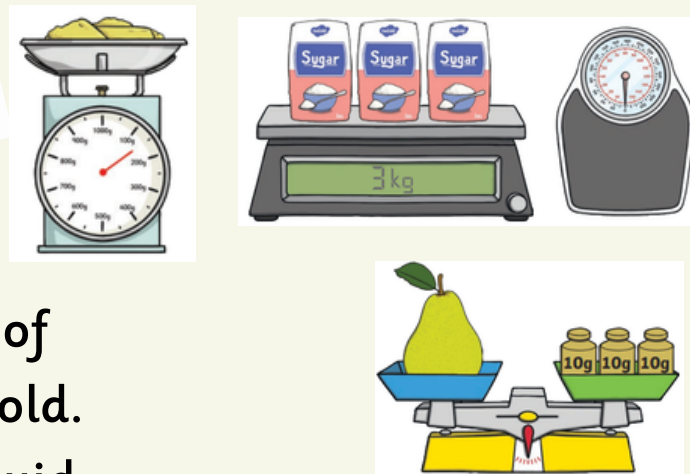
VOCABULARY

north	east	left	backwards	three quarter	clockwise
south	west	right	quarter turn	turn	anti-clockwise
		forwards	half turn	full turn	sequence

YEAR 2: MASS, CAPACITY & TEMPERATURE

Facts

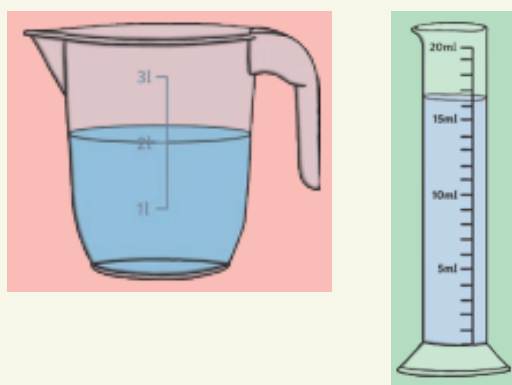
Mass is the amount of substance that makes up an object. We measure it in grams (g) and kilograms (kg).



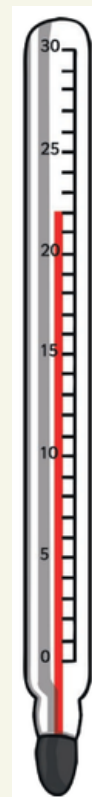
Capacity is the amount of liquid a container can hold.

Volume is how much liquid is in the container.

We measure liquid in millilitres (ml) and litres (l).

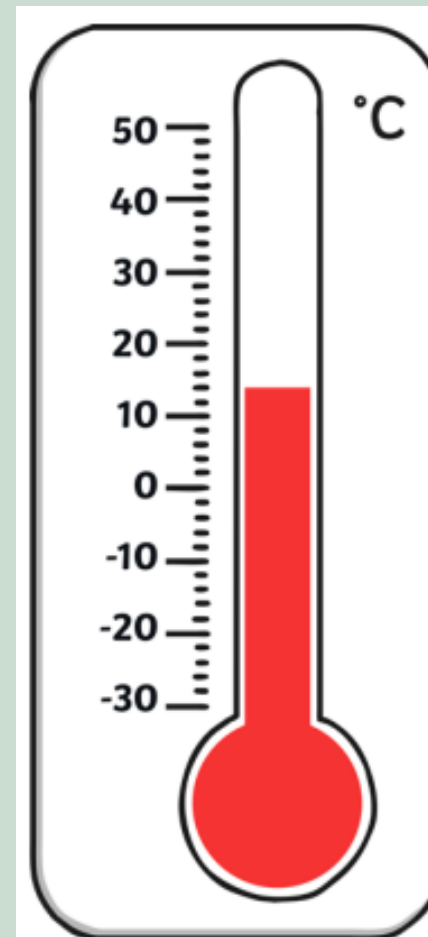


Temperature is the measure of heat. Thermometers are used to measure temperature. We measure temperature in degrees Celsius (°C) but in some areas of the world they use degrees Fahrenheit (°F).



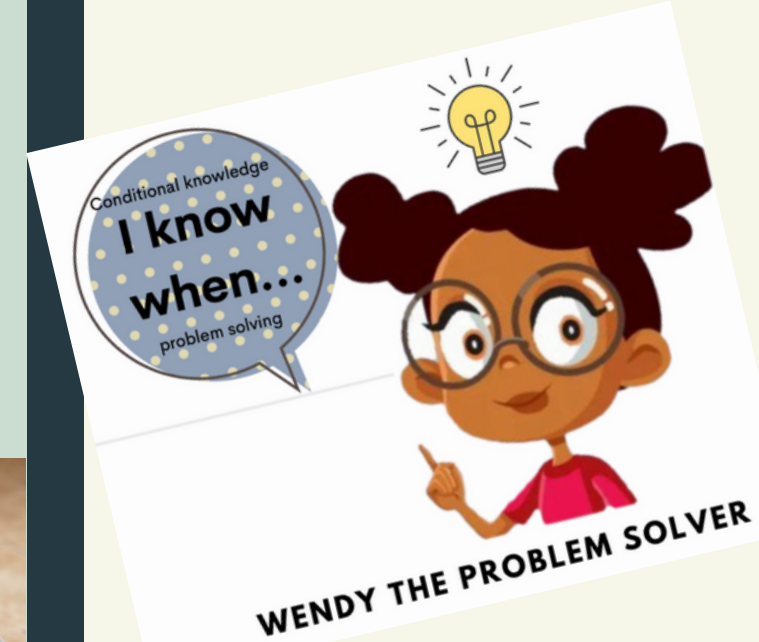
Strategies

It is easier to measure lighter things in grams and heavier things in kilograms.



Most thermometers have small tubes and a bulb of liquid at the bottom. The hotter the temperature, the higher the liquid from the bulb rises in the tube. There are markings along the side of the glass tube that show the temperature.

Problem Solving



quarter full

half full

full

$25\text{ml} < 250\text{ml}$

$10\text{l} > 2\text{l}$

Always, Sometimes or Never true?

The larger the box, the heavier it is.

Sometimes true. The size of an item does not always signify the mass. A small box full of stones would have a greater mass (heavier) than a large box filled with feathers.

VOCABULARY

lighter
heavier

mass
gram (g)
kilogram (kg)

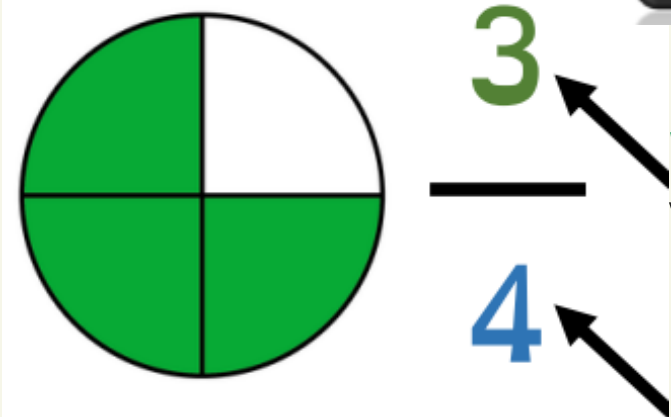
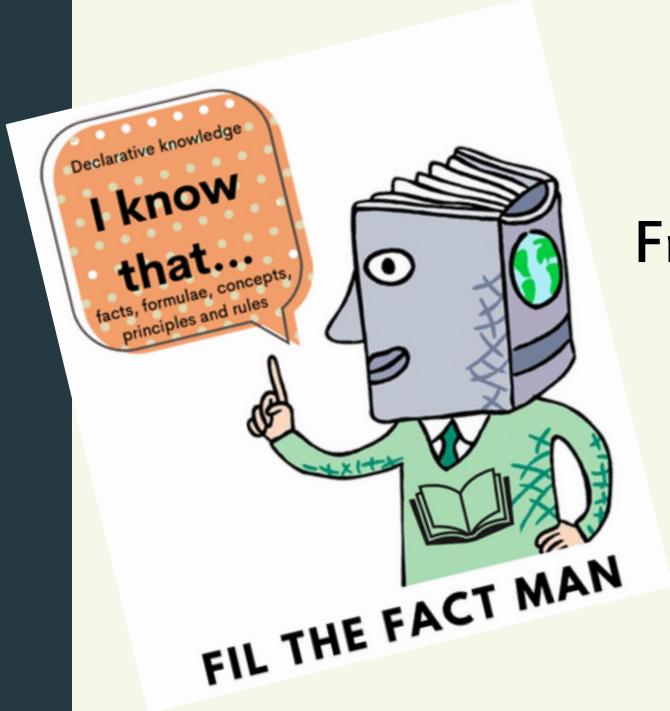
capacity
volume
millilitre (ml)

litre (l)
temperature
degrees Celsius (°C)

YEAR 2: FRACTIONS

Facts

Fractions are the equal parts
that can make up a whole



numerator = how many
we are counting

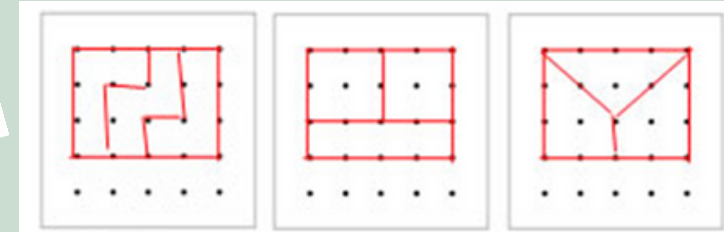
denominator = how many parts in total



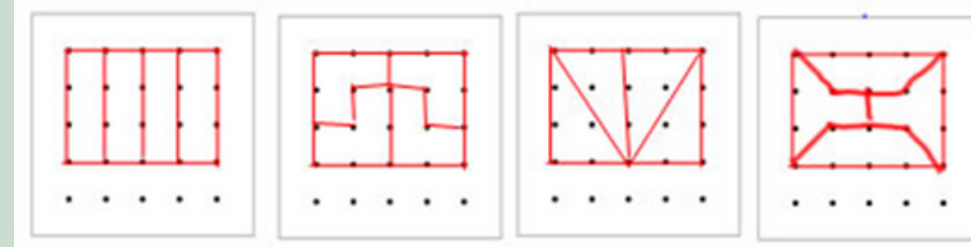
Strategies

Equal parts can be shown in
different ways:

shared into thirds



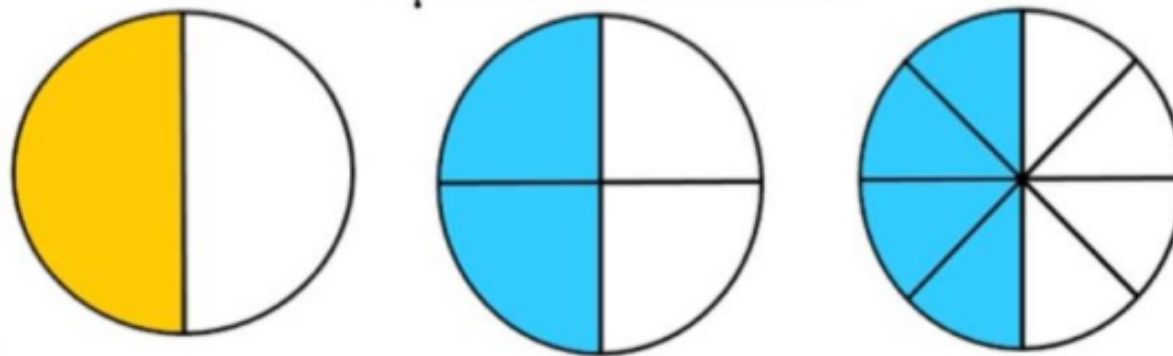
shared into fourths



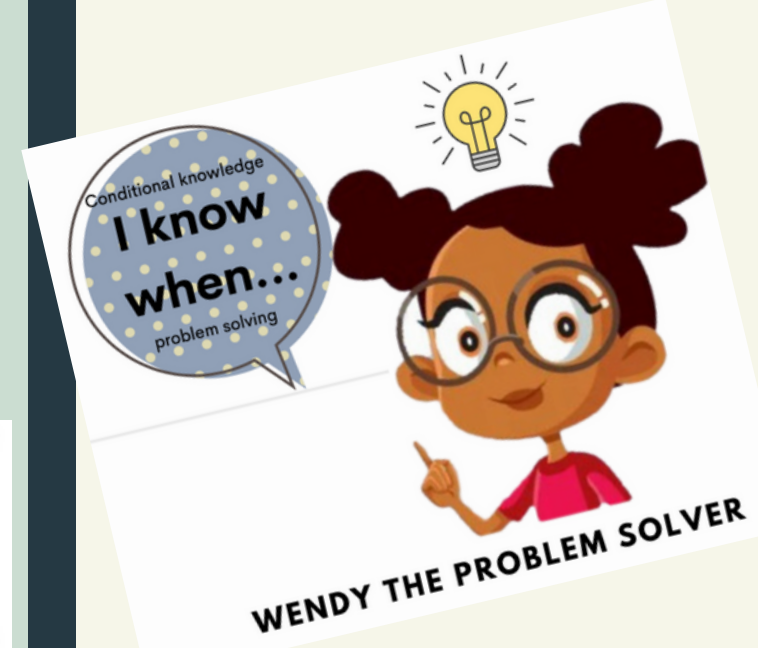
Equivalent Fraction

Equivalent Fractions have the same value, even though they may look different. They are fractions that name the same amount or part.

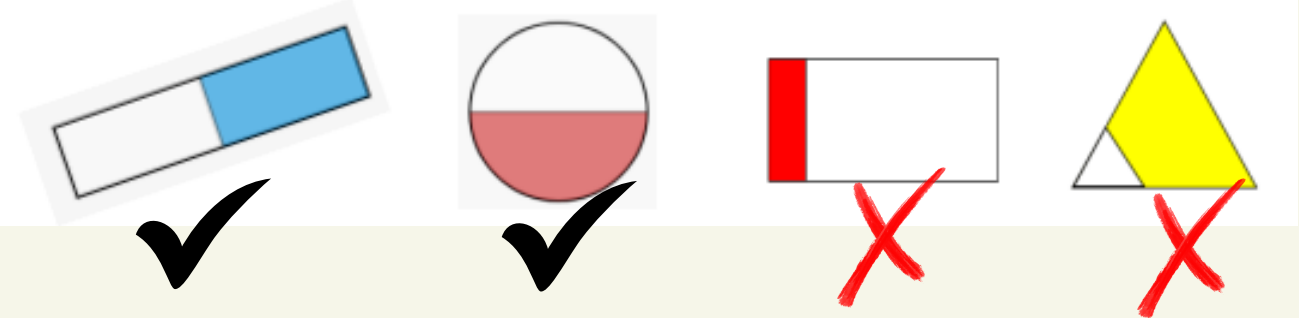
For example: $\frac{1}{2}$, $\frac{2}{4}$ and $\frac{4}{8}$ are all equivalent fractions



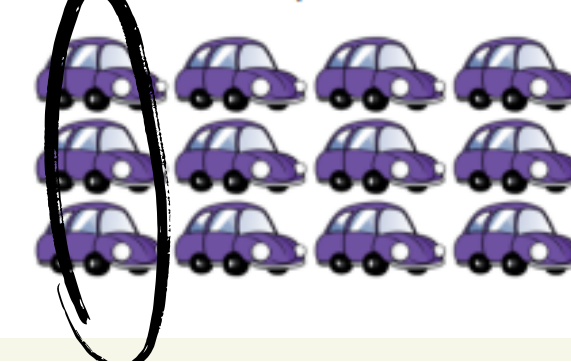
Problem Solving



Which pictures show $\frac{1}{2}$?



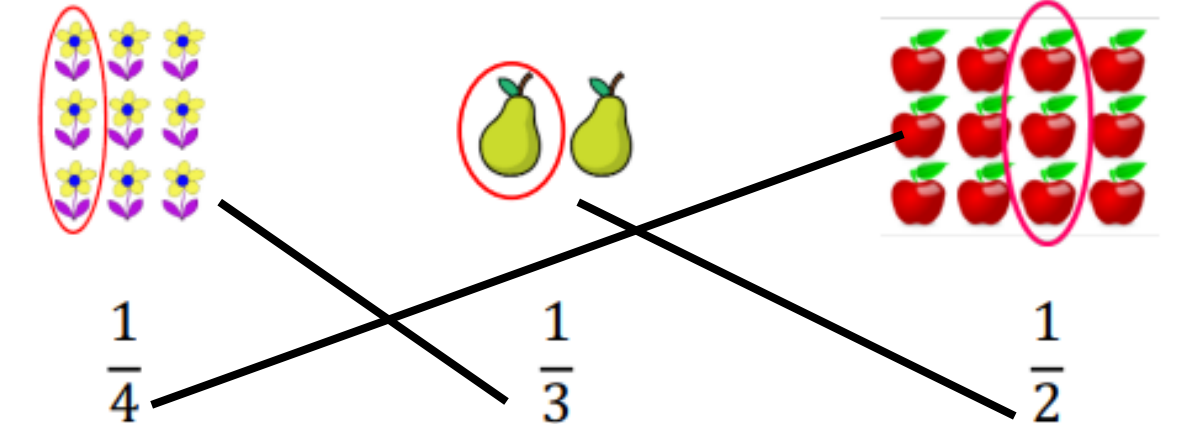
Circle one quarter of the cars.



One quarter of 12 is 3

3 is $\frac{1}{4}$ of 12

Match the unit fraction to the correct picture.



VOCABULARY

fraction

part

whole

half 1/2

quarter 1/4

third 1/3

2 quarters 2/4

equivalent

amount

numerator

denominator

share