



ST. ANNE'S
R.C. HIGH SCHOOL

Year 9

NAME:

Form Group:

SUMMER TERM

SUBJECT KNOWLEDGE ORGANISERS

You will definitely enjoy what you've worked hard for—
you'll be happy; and things will go well for you

Proverbs 128:2

History / Information

Graffiti art is a form of street art where artists create images or words on walls and public spaces, often using spray paint. It grew in popularity in the 1970s in New York City and is now seen around the world. Graffiti can be used to share messages, express identity, or make bold statements. Some artists use it to challenge rules or bring attention to social issues. Famous graffiti artists include Banksy, known for his secret identity and political art, and Jean-Michel Basquiat, who started with graffiti before becoming a gallery artist. While some see graffiti as vandalism, many now view it as a powerful and creative art form. It continues to shape modern culture and inspire new generations.

Key Words

1. **Tag** – A graffiti artist's personalised signature, usually written quickly in a unique style to mark their identity or presence.
2. **Throw-up** – A more developed form of a tag, often using bubble letters and two or more colours, designed to be completed quickly.
3. **Piece** – Short for "masterpiece", this is a large, detailed graffiti artwork that involves more planning, colour, and artistic skill.
4. **Street Art** – A broader term that includes graffiti and other forms of public art (like stencils or murals), often used to convey social or political messages.
5. **Spray Paint** – The main medium used in graffiti, allowing for fast application, blending, and coverage on walls and other surfaces.
6. **Urban Environment** – The setting where graffiti is most commonly found, such as city walls, alleyways, subways, and abandoned buildings.
7. **Vandalism** – The illegal or unwanted defacement of property; graffiti is sometimes viewed this way, especially when done without permission.

Graffiti Art Characteristics

1. **Urban Expression** – Graffiti is commonly found in cities and urban environments, acting as a form of self-expression for artists in public spaces.
2. **Bold Colour** – Graffiti often features bright, eye-catching colours designed to grab attention and make a statement.
3. **Lettering Styles** – Unique and stylised typography is a key feature, especially in graffiti "tags" and "pieces", where artists create distinctive letterforms.
4. **Spray Paint Technique** – The primary tool for graffiti is spray paint, allowing for quick application, blending, and large-scale works.
5. **Tagging** – A tag is a graffiti artist's signature or nickname, often written quickly in a consistent style to mark their presence.
6. **Street Culture** – Graffiti is closely linked with hip-hop and street culture, often reflecting social issues, rebellion, or identity.
7. **Layering and Overlapping** – Many graffiti walls are layered with multiple tags and artworks, showing an ongoing conversation or competition between artists.



Year 9 Computing- Digital Citizenship



ST. ANNE'S
R.C. VOLUNTARY ACADEMY

Keyword	Definition
Digital Footprint	A permanent record of your online activity
Mis-information	Inaccurate information shared online but not meant to cause harm
Dis-information	Inaccurate information shared online, with the purpose of causing harm or distress
Mal-information	Accurate information shared online with the purpose of causing harm or distress
Audience	The users we design our digital assets for
Purpose	The aim of creating the digital asset – e.g entertain, inform, persuade
Digital Citizenship	the responsible and respectful use of digital technologies to participate actively and positively in both online and offline communities

What do you think?

Why do you need to protect your digital footprint?

How can you protect your digital footprint?

What should you do if you come across mis, dis or mal information?

Scan the QR Code to visit CEOP website and find out more

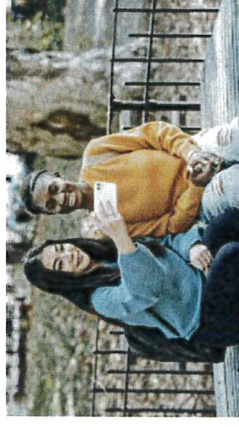


Critical thinking online

Not everything online is real or true, read about how to tell what is fact and what is fiction.

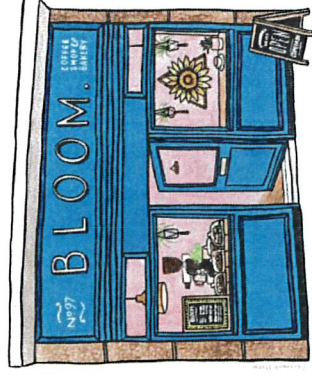
Being a positive bystander

Learn about when and how you can take positive action to help others.



Sharing pictures and videos

Y9 Construction Knowledge Organiser



Postcard questions!

- What is the difference between all 3 stop buttons around the room?
- What does sustainability mean?
- Which way does an oscillating motion go? Can you think of an example?

Types of Motion! Scan the QR code to revise some information -



What are the four line types we use to draw in 2-point perspective?

When drawing in one- point perspective you should stick with four main line types:

Example types of line:	Name	Example types of line:	Name
	V _ _ _ _ _		C _ _ _ _ _
	P _ _ _ _ _		H _ _ _ _ _

Skills you will learn & develop

Marking and measuring
Cutting Skills (Coping/Tenon and/or Scroll Saw)
Drilling with the Pillar/Bench Drill
Sanding/Finishing your material
Safety in the workshop
Painting your shop front
Theory work & drawing in 2 point perspective
Use of CAD/CAM (laser cutter) in your model

Name generator!
Struggling to come up with a name for your homework? Use this QR code to help!



Struggling to come up with an idea? Think of a hobby you enjoy and how you could create a shop out of that!


Year 9 Drama - Mask

Keywords	Understanding Mask
Clocking - This is a technique intrinsic to mask acting, where the mask looks straight at the audience. It is a moment of connection between the mask and the audience and gives the viewer a chance to interpret what the mask is thinking.	<p>Through the mask, the individual has the potential to challenge the understanding of whom they are through their body now being separated from the visual identifier of their face. This challenge can be personal or with the audience.</p> <p>The definitions of mask demonstrate this, from the Arabic maskhahra: to falsify or transform to the English form of mask to conceal. The human mind focuses clearly on the face of the individual, and thus through the concealment of this core identifier, the mask allows the individual to be separated from their "id" and their movements to be interpreted as separate to the individual.</p>
Counter Mask - This is when the actor plays the opposite emotion to the one written on the mask. Why? A mask that plays the same emotion will soon become boring and predictable. For example, a joyous mask can be sad, an elderly mask can be quickly paced, an aggressive mask can be submissive, all through the actor's body.	
Giving focus - As a basic rule, only one mask should have the focus at once on stage. To give the focus as an actor, look at where you want the focus of the audience to be. If you want to go unnoticed then you need to "disappear" so not to steal focus, for example; look down, keep still or even hide your mask behind a newspaper.	
Moments of stillness - Like music or dance, mask work needs moments of stillness. These moments give the audience time to interpret and absorb the action and story; it gives mask work definition, punctuation and clarity.	
Moments of isolation - If the whole body is moving all the time, there will be no clarity or focus. Bringing movement down to a tiny detail, such as the tapping of a toe, can be extremely effective in creating focus.	
Keeping the mask alive - A mask becomes lifeless if it is kept still for too long - it needs regular movement, even if this is tiny.	




Mask in Theatre History		
Greek theatre originated from a festival in honour of Dionysus; the god of wine, ritual madness and ecstasy. Masks were used in performance to exaggerate and accentuate the characters' features, as well as to make the actors more visible to the audience. Greek theatre used full- face masks, but they were not neutral. They had fixed, exaggerated expressions.	Commedia dell'arte (originates from 1500s Italy) actors used half-masks to portray stock characters—characters all the audience knew, thus separating the performer's individuality from the role. The features of the masks highlighted the comic aspects of these characters, through shape and colour.	Vsevolod Meyerhold re-habilitated the mask in modern theatre, both as a performative object, but also a training for his actors. Meyerhold's awareness of the role of the mask in performance and increasing underlying desire to explore the "grotesque" of the inner person that the mask represents was explored in detail within his works.


Support		
 <p>Working with a Trestle Mask</p>	 <p>'A Brave Face' Vamos theatre</p>	 <p>How Hard is Waving? Vamos</p>

English Year 9 Knowledge Organiser – Othello

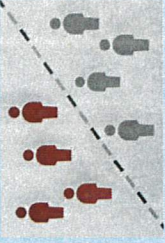
Key words		Unit Overview Othello is a Shakespeare play. It follows the story of Othello, a well-respected army officer whose tragic downfall is constructed by the villainous Iago. During our study of the play, we will explore themes of patriarchy, discrimination and masculinity. We will also produce a narrative piece of writing exploring our own understanding of the tragic hero.
Patriarchal		
Noble		
Duplicitous		
Hamartia		
Anagnorisis		

What do you think?
Why is Othello presented as a tragic hero?
What are the problems with having to live up to societal expectations?
Is Shakespeare still relevant in our modern world?


A summary of Othello	
Racism in the Shakesperean era	
Iago character analysis	



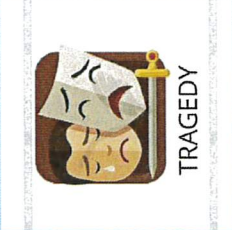
Patriarchy




racism



jealousy



TRAGEDY



honour

Key themes

KEYWORDS

Versatile -Ability to be used for more than one purpose.

Proving the fermentation action of the yeast causing the dough to rise and create an airy texture.

Food Choice how people decide on what to buy and eat.

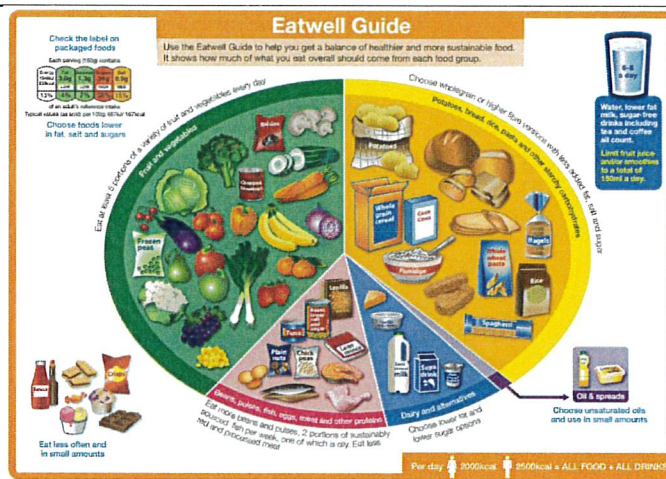
Sensory-Human testing of the taste, smell, texture and appearance of a food product.

Seasonal the times of the year when the harvest or the flavour of a given type of food is at its peak.

Cross Contamination-

The transfer of bacteria from one food to another, from humans, animals other food or equipment.

Heat Transfer – The way heat moves from one area to another through conduction, convection and radiation.



CLEANING

Cleaning kills bacteria

- Wash hands before, during and after food preparation
- Wash all worktops, utensils, chopping boards and equipment
- Rinse unwashed salad, fruit and vegetables

CHILLING

Chilling prevents microbial growth.

- Cool food to below 5 degrees Celsius as quickly as possible and defrost food in the fridge
- Fridge =- 0 degrees – 5 degrees
- Freezer – 15 degrees or below

COOKING

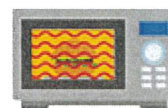
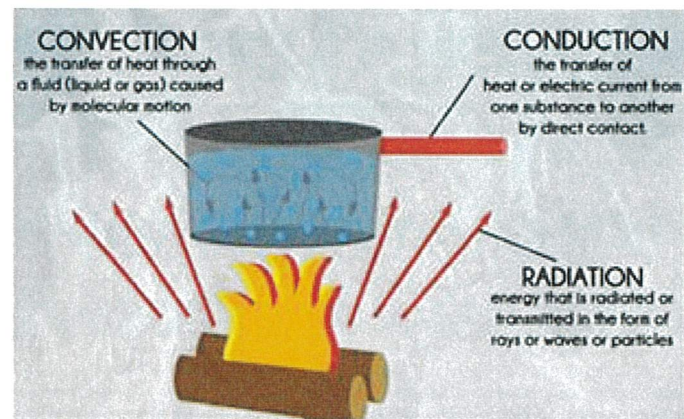
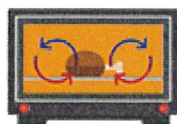
Cooking kills bacteria
Food needs to be heated till steaming hot with the core temperature reaching

- 60 degrees Celsius for 45 minutes
- 65 degrees Celsius for 10 mins
- 70 degrees Celsius for 2 minutes
- 75 degrees Celsius for 30 seconds
- 80 degrees Celsius for 6 seconds

CROSS CONTAMINATION

Bacteria are transferred from one object to another

- Keep raw and cooked food separate
- Never was raw meat
- Keep raw meat and shellfish on the bottom shelf of the fridge



QR CODE: Methods of Heat transfer video/website

WHAT DO YOU THINK?

What are the main impacts on food choices in todays society?

Why are staple foods versatile? How can a recipe be modified?

What does the term 'seasonal foods' mean? What impact does this have on a persons diet?

What are the different methods of heat transfer? Can you identify which ones you have used in food technology?

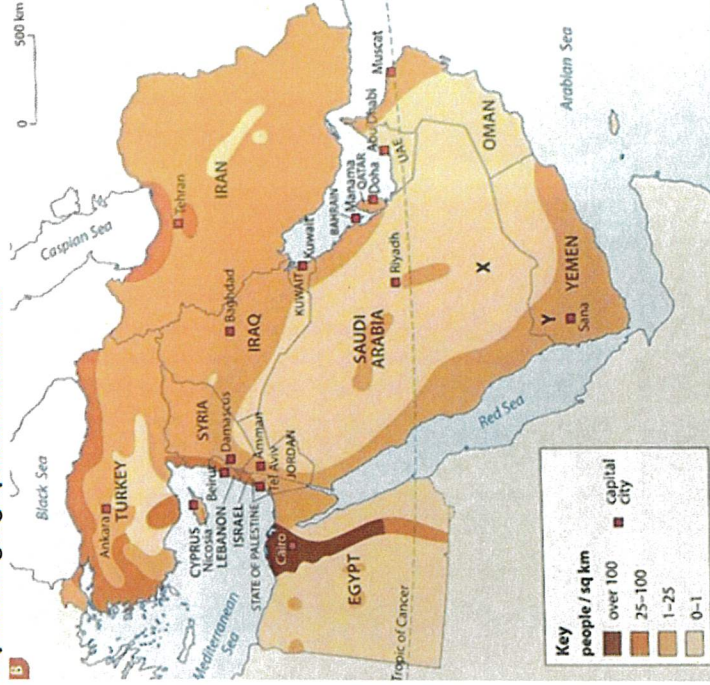


The Middle East

The Middle East is a geographical and culturally similar region made up of 17 countries (although this varies) located mostly in south-western Asia on the Arabian Peninsula, but also in parts of northern Africa and south-eastern Europe. Most of the Middle East region has a hot, arid and semi-arid desert climate. The Arabian Desert is the largest sand-only desert on the planet and receives as little as 30 millimetres of rainfall per year). The coastal regions of the North have Mediterranean climate, much like Greece and Italy, and the higher altitude regions are more like the cooler grasslands of the Russian Steppe.

More than half of the world's known oil reserves are found in the region, although they are not equally distributed. This has created a disparity of wealth and power in the Middle East. Gulf countries with relatively small populations have the most oil. Qatar is the wealthiest nation and has GDP per capita of 124,000 USD whereas Yemen is the poorest nation with a GDP of 2,500 USD per capita.

Key human geographical information:



The Middle East is the region around the southern and eastern shores of the Mediterranean Sea. It includes the countries that are located where the continents of Europe, Asia, and Africa meet. Geographers and historians do not always agree on which countries should be included in the Middle East. People commonly include the following countries: Turkey, Syria, Lebanon, Israel, Jordan Iraq, Iran, Afghanistan, Saudi Arabia, Yemen, Oman, the United Arab Emirates, Qatar, Bahrain, Kuwait, Egypt, Libya, and Sudan.

The Middle East is the historic birthplace of three of the world's major monotheistic religions: Judaism, Christianity, and Islam. These religions have had a profound impact on the region's history, culture, and geopolitics, and they continue to be central to the identity of many Middle Eastern countries and their people.



Russia

- Russia is the largest country in the world by area and it lies in the Northern Hemisphere and spans the continents of Asia and Europe.
- Russia is the ninth most *populous* country in the world, with a population of approximately 144 million people. The major language is Russian.
- The capital city is Moscow. It lies to the west of the country and is home to around 13 million people.
- Russia contains several biomes, including tundra, taiga, temperate woodland, steppe and desert

Population distribution

Most people live in the west of the country. This is where the *capital city* of Moscow and is located, as well as many other larger cities, such as St Petersburg and Kazan. Around 75 per cent of Russia's population live in cities, where there are jobs and opportunities. Few people live in the far north, where temperatures are very low.



Russia has large reserves of oil and gas. The country has more natural gas than any other nation, with approximately 21 per cent of the world's total supply. It also has large reserves of oil, equating to around six per cent of the world's total.



In February and March 2014, Russia invaded Crimea, a region that was part of Ukraine, and later annexed it. This event marked the beginning of the ongoing Russo-Ukrainian War. The invasion followed political unrest in Ukraine, including the ousting of its president, Viktor Yanukovich. Pro-Russian demonstrations in Crimea and discussions by Russian leaders led to military operations in the area¹. Russia's actions were controversial and widely condemned internationally. The annexation was formalized on March 18, 2014, with Russian President Vladimir Putin signing a treaty to make Crimea part of Russia. The situation remains a significant point of tension in global politics.





The Holocaust

1933 - The Nazis introduce non violent persecution of Jews e.g. boycotting of Jewish businesses.



1935 - The Nuremberg Laws - Jewish people no longer German citizens and cannot marry non Jews.



9 November 1938 - Kristallnacht. Night of the Broken Glass - Jewish businesses and synagogues targeted - Jews are killed in the violence.



1938-1942 - many Jewish people moved to Ghettoes. Einsatzgruppen start murdering Jews and minorities.



1942 - The Wannsee Conference where the Final Solution was decided.



1944-45 - Death marches and liberation of Death camps by the Allies.

Key Terms:

Anti-Semitism – hatred of Jewish people.

Boycott – to stop buying something or going somewhere to make a point about something.

Persecution – targeting a group for harsh treatment.

Kristallnacht – the violent events of 9 November 1938 where Jewish businesses and synagogues were burnt down. Many Jewish men were murdered or sent to Concentration camps.

Synagogue – the buildings where Jewish people worship.

Ghetto – a walled part of a City where Jewish people were sent to live in exile. Conditions were extremely harsh.

Einsatzgruppen - squadrons whose purpose was to shoot dead Jews and other undesirable minorities after the Nazis invaded the USSR in 1941 and advanced into Eastern Europe.

The Final Solution – the systematic gassing and killing of Jews and other undesirable minorities in Death Camps such as Auschwitz.

Holocaust – the name given to the Jewish Genocide by the Nazis.

Genocide – an attempt to kill an entire race – in this case all of the Jews in Europe.

Aryans – the German so called 'Master Race' characterised by having blonde hair and blue eyes.

Untermenschen – German for 'sub human' – used to describe Jewish people and other undesirable minorities such as Blacks, homosexuals, gypsies and disabled.



Where can I
find out
more?

The Story: In the 1933 the Nazis took charge of Germany and began to persecute Jewish people and other 'undesirable' minorities. This persecution started off in a non violent manner – for example with the boycotting of Jewish businesses. However, it grew to be more sinister and violent with turning points in 1935 (Nuremberg Laws) and 1938 (Kristallnacht). After the outbreak of WW2, the Nazis invaded more parts of Europe to conquer territory and with that territory came a higher number of Jewish people. Getting rid of these Jews and other minorities became what the Nazis called 'The Final Solution'. Death camps were built where Jews were systematically gassed. Over 6 million Jews were murdered in this way.

Year 9 – reasoning with geometry...

Recognise enlargement &

Shapes are similar if all pairs of corresponding sides are in the same ratio

These shapes are similar because all sides are increased by the same ratio



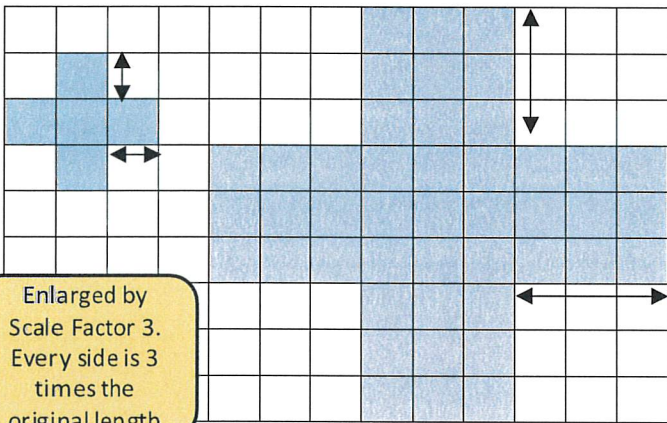
Enlargements are similar shapes with a ratio other than 1

Keywords - Similar Shapes: shapes of different sizes that have corresponding sides in equal

proportion and identical corresponding angles

Enlarge by a positive scale

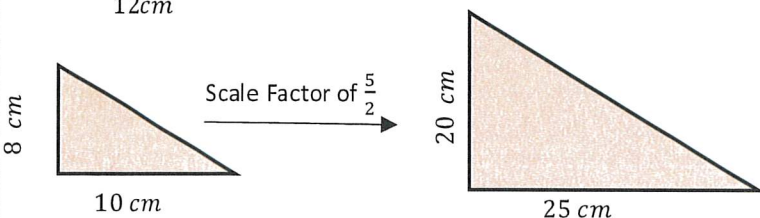
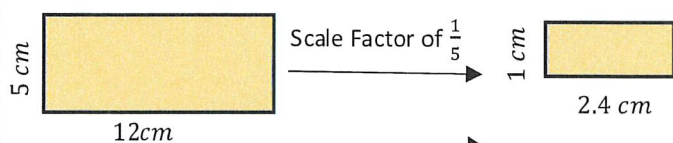
With a scale factor larger than 1 it makes the shape bigger



Keywords - Scale Factor: the multiple describing how much a shape has been enlarged

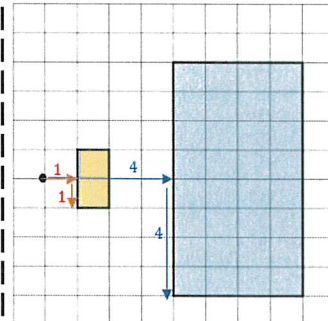
Positive fractional scale factor

With a scale factor between 0 and 1 it makes the shape smaller



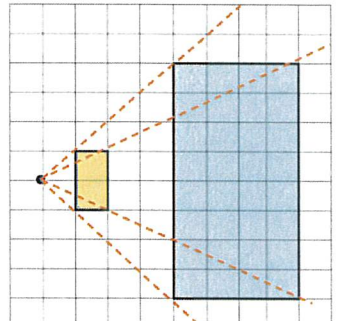
Enlarge a shape from a point

Scaled distances method



Scale the distance between the point of enlargement and each corresponding vertices

Rays method



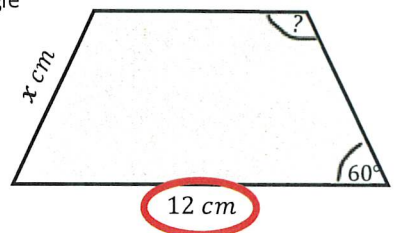
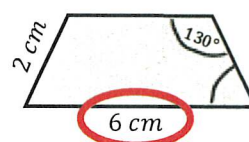
Multiply the distance from the centre of corresponding vertices by the scale factor along the ray

Keywords - Enlarge: to change the size of a shape (enlargement is not always making a shape bigger)

Calculations in similar shapes

Don't forget that properties of shapes don't change with enlargements or in similar shapes

The two trapezium are similar find the missing side and angle



Corresponding sides
identify the scale factor

$$\frac{12}{6} = 2 \quad \text{Scale Factor} = 2$$

Calculate the missing side

$$\text{Length (corresponding side)} \times \text{scale factor} \\ 2 \text{ cm} \times 2 \\ x = 4 \text{ cm}$$

Enlargement does not change angle size

Calculate the missing angle

Corresponding angles remain the same
130°

Keywords - Corresponding: object (or sides) that appear in the same place in two similar situations.
Image: the picture or visual

Year 9 – reasoning with geometry

Solving ratio & proportion problems

Direct

As one variable changes the other changes at the same rate.

R



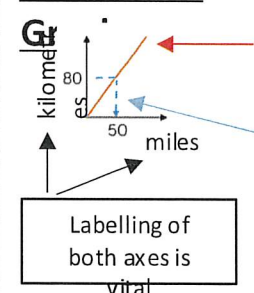
4 cans of pop = £2.40
 $\times 0.5$
 2 cans of pop = £1.20
 This multiplier is the same in the same way that this would be

This is a multiplicative change
 4 cans of pop = £2.40
 $\times 3$
 12 cans of pop = £7.20
 Sometimes this is easiest if you work out how much one unit is worth first
 e.g. 1 can of pop = £0.60

Conversion

Compare two variables

R



This is a straight line because as one variable increases so does the other at the same rate

To make conversions between units you need to find the point to compare – then find the associated point by using your graph. Using a ruler helps for accuracy. Showing your conversion lines help as a “check” for solutions

Keywords - Direct proportion: as one variable is multiplied by a scale factor the other variable is multiplied by the same scale factor.

Inverse

As one variable is multiplied by a scale factor the other is divided by the same scale factor

Examples of inversely proportional relationships
 Time taken to fill a pool and the number of taps running.
 Time taken to paint a room and the number of workers

T is inversely proportional to G. When T=2 then G=20

	1	2	8
T			
G	40	20	5

Arrows indicate: 1 to 2 is $\times 2$, 2 to 8 is $\times 4$, 40 to 20 is $\div 2$, 20 to 5 is $\div 4$.

Keywords - Inverse proportion::

as one variable is multiplied by a scale factor the other is divided by the same scale factor.

Keywords - Proportion: a comparison between two numbers

Ratio: a ratio shows the relative size of two variables

Sharing a whole into a given ratio
 Ratio: a ratio shows the relative size of two variables

Finding a value given 1:n (or n:1)
 Proportion: a comparison between two numbers

James and Lucy share £350 in the ratio 3:4.

Work out how much each person earns

Model the Question
 James: 3
 Lucy: 4
3 : 4

Find the value of one part
 £350 ÷ 7 = £50
 7 parts to share between (3 James, 4 Lucy)

Put back into the question
 James: Lucy
 3 : 4
 £150 : £200

James = 3 x £50 = £150
 Lucy = 4 x £50 = £200

Inside a box are blue and red pens in the ratio 5:1. If there are 10 red pens how many blue pens are there?

Model the Question
 Blue pens: 5
 Red pens: 1
5 : 1

Put back into the question
 Blue : Red
 5 : 1
 50 : 10
 There are 50 Blue pens

One unit = 10 pens
 Blue pens = 5 x 10 = 50
 Red pens = 1 x 10 = 10

Best Buys

Have a directly proportional relationship
 To calculate best buys you need to be able to compare the cost of one unit or units of equal amounts

	Shop A	Shop B
	4 cans for £1.20	3 cans for 93p
	£1.20 ÷ 4	£0.93 ÷ 3
Cost per item	1 can is £0.30 Or 30p	1 can is £0.31 Or 31p
Shop A is the best value as it is 1p cheaper per can of pop		

	Shop A
	4 cans for £1.20
	4 ÷ £1.20
Cost per pound	£1 buys 3.333 cans of pop
Shop A is still shown as being the best value but pay attention to the unit you are calculating, per item or per pound.	
Best value is the most product for the lowest price per unit	

Year 9 – reasoning with Rates

geometry...

Keywords - Substitute: putting numbers where letters are – replacing numbers into a formula

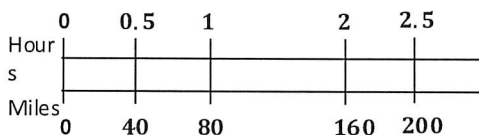
Speed, Distance, Time

Time for every

e.g. 80 miles per hour (mph)

Travel 80 miles every hour

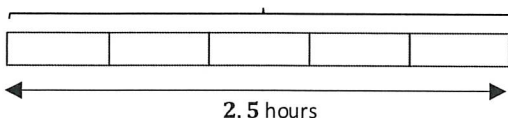
You can use a double number line to help you calculate distance



e.g. A boat travels at a constant speed for 2.5 hours

It travels 300 miles

Bar models can help to calculate
mph
Each part is half an hour
Each part is 60 miles

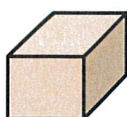


Density, Mass, Volume

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

$$\text{volume} = \frac{\text{mass}}{\text{density}}$$

$$\text{mass} = \text{volume} \times \text{density}$$



$$\text{volume of prism} = \text{Area of cross section} \times \text{Depth}$$

R

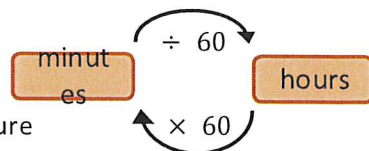


Speed, Distance, Time

Before calculations – make sure you are working in the same units as the speed

Learn or learn how to rearrange the formula for speed, distance and time

Substitute in the variables given



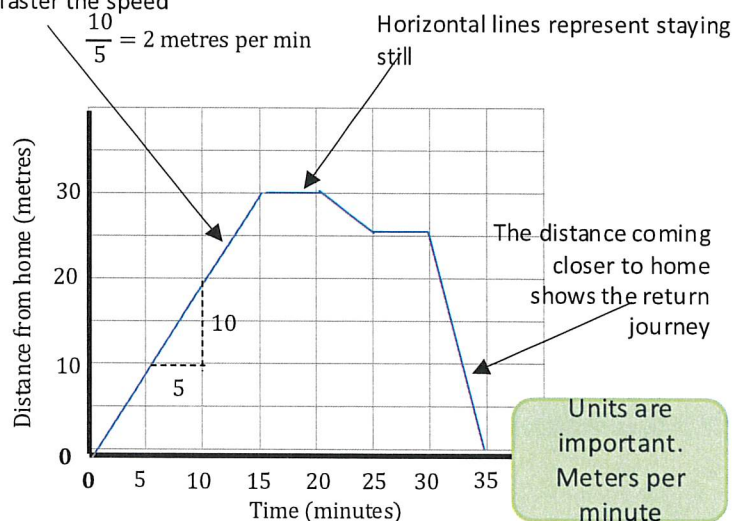
$$\text{time} = \frac{\text{distance}}{\text{speed}}$$

$$\text{distance} = \text{speed} \times \text{time}$$

Distance – Time graphs

Interpret a gradient the faster the speed

Gradient = speed



Keywords - Convert: change

Keywords - Mass: a measure of how much matter is in an object. Commonly measured by weight.

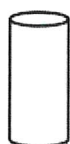
Keywords - Volume: the amount of 3D space a shape takes up

Keywords - Origin: the coordinate (0, 0)

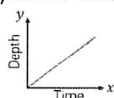
Flow problems &



This will fill at a constant rate, then as the space decreases it will speed up and the neck of the bottle fill at a faster constant speed



The cylinder will fill at a constant rate



Units are important. Ensure any volume calculations are the same unit as the rate of flow

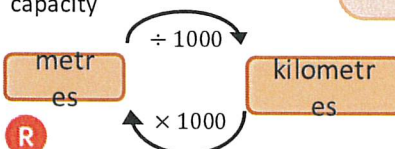
Rates of change &

units in rates of change relationships. Revisit your conversions between units of length and capacity

Speed: miles per hour

Exchange rates: euros per pounds

Density: mass per volume

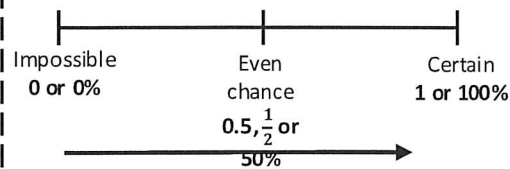


Year 9 – representations... Probability

Keywords - Probability: the chance that something

will happen

The probability scale



The more likely an event the further up the probability it will be in comparison to another event

(It will have a probability closer to 1)



There are 2 pink and 2 yellow balls, so they have the same probability

There are 5 possible outcomes
So 5 intervals on this scale, each interval value is =

Expected outcomes

Expected outcomes are estimations. It is a long term average rather than a prediction.

Dark	Milk	White
0.15	0.35	0.5

The sum of the probabilities is 1

An experiment is carried out 400 times.

Show that dark chocolate is expected to be selected 60 times

$$0.15 \times 400 = 60$$

Single event probability



Probability is always a value between 0 and 1

The probability of getting a blue ball is $\frac{1}{5}$

\therefore The probability of NOT getting a blue ball is $\frac{4}{5}$

The sum of the probabilities is 1

The table shows the probability of selecting a type of chocolate

Dark	Milk	White
0.15	0.35	0.5

$$P(\text{white chocolate}) = 1 - 0.15 - 0.35 = 0.5$$

Relative Frequency

$$\frac{\text{Frequency of event}}{\text{Total number of outcomes}}$$

Remember to calculate or identify the overall number of outcomes!

Colour	Frequency	Relative Frequency
Green	6	0.3
Yellow	12	0.6
Blue	2	0.1

20

Relative frequency can be used to find expected outcomes

e.g. Use the relative probability to find the expected outcome for green if there are 100 selections.

Relative frequency \times Number of times

$$0.3 \times 100 = 30$$

Keywords - Chance: the likelihood of a particular outcome.

Keywords - Biased: a built in error that makes

all values wrong by a certain amount

Independent



The rolling of one dice has no impact on the rolling of the other. The individual probabilities should be calculated separately.

$$\text{Probability of event 1} \times \text{Probability of event 2}$$



$$P(5) = \frac{1}{6}$$

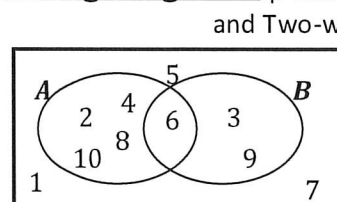
$$P(R) = \frac{1}{4}$$

Find the probability of getting a 5 and a red

$$P(5 \text{ and } R) = \frac{1}{6} \times \frac{1}{4} = \frac{1}{24}$$

Keywords - Independent: an event that is not effected by

Using diagrams



The possible outcomes from tossing a

	1	2	3	4	5	6
H	1, H	2, H	3, H	4, H	5, H	6, H
T	1, T	2, T	3, T	4, T	5, T	6, T

Keywords - Relative

Frequency: how often something happens divided by the

outcomes

	Car	Bus	Walk	Total
Boys	15	24	14	53
Girls	6	20	21	47
Total	21	44	35	100

The possible outcomes from rolling a dice

Keywords - Event: the outcome of a probability – a set of possible

Year 9 – representations...

Algebraic Representation

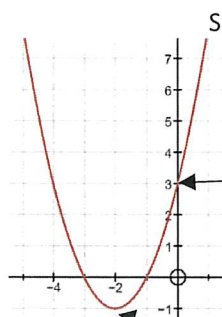
Keywords - Quadratic: a curved graph with the highest power being 2.

Quadratic
Square power.

Graph
 $y = x^2 + 4x + 3$

If x^2 is the highest power in your equation then you have a quadratic graph.

It will have a parabola shape



Substitute the x values into the equation of your line to find the

x	-4	-3	-2	-1	0	1
y	3	0	-1	0	3	8

Intersection with the y axis

Coordinate pairs for plotting
(-3, 0)

Plot all of the coordinate pairs and join the points with a curve (freehand)
Quadratic graphs are always symmetrical with the turning point in the middle

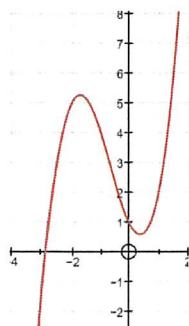
Keywords - Cubic: a curved graph with the highest power being 3.

Cubic
Cubic power.

Keywords - Reciprocal: a reciprocal is 1 divided by the number

graphs

$y = x^3 + 2x^2 - 2x + 1$



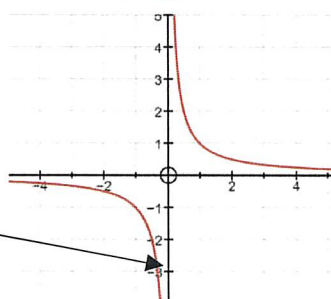
If x^3 is the highest power in your equation then you have a cubic graph

Reciprocal graphs never touch the y axis.
This is because x cannot be 0

This is an asymptote

Reciprocal
Graphs

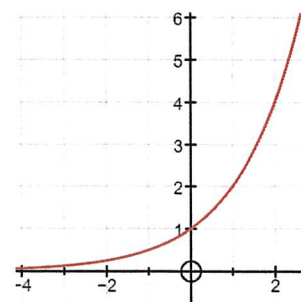
$y = \frac{1}{x}$



Exponential
Graph

$y = 2^x$

Exponential graphs have a power of x



Keywords - Origin: the coordinate (0, 0)

Keywords - Parabola: a 'u' shaped curve that has mirror symmetry

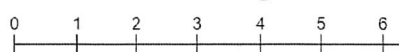
Represent

Inequalities

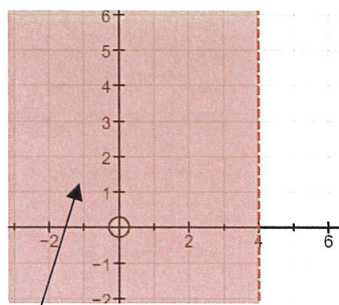
Multiple methods of representing inequalities

$x < 4$

All values are less than 4



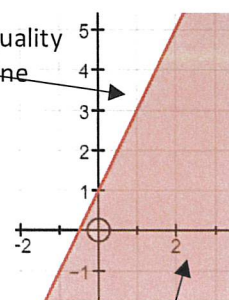
The shaded area indicates all possible values of x



The dotted line shows that the inequality does not include these points

The solid line shows that the inequality includes all the points on this line

$y \geq 2x + 1$



The shaded area indicates all possible solutions to this inequality

Keywords - Inequality: makes a non equal comparison between



The Classical Period (1750-1820)

Yr 9 Music

The classical period followed the Baroque period (1600-1750). Baroque music was highly ornamental and decorated whereas classical music was much clearer. The style emphasises the melody and shape in the music and was well-balanced, ordered, symmetrical and elegant.

Dynamics and Articulation

- Contrasting moods
- Dynamic markings used on music
- **Crescendos** (gradually getting louder) and **Diminuendos** (gradually getting quieter) used in music for the first time
- Articulation markings used: **accents** (>), **sforzando** (sfz.), **slurs**, **staccatos** (.)

Harmony and Tonality

- Simple, **diatonic** harmony
- **Modulations** to related keys
- **Chromatic** harmony used to create tension
- Use of **cadences** to finish phrases
- **Tonic** and **Dominant** pedals in the bass line

Harmony and Tonality

- **Modulations** (change of key) to related keys
- **Chromatic** (notes out of the key) harmony used to create tension
- Use of **cadences** to finish phrases
- **Tonic** (note 1) and **Dominant** (note 5) **pedal** (long notes) in the bass line

Melody and Texture

- Emphasis on elegance and balance
- Baroque music was polyphonic with complex textures
- Classical music was **clearer**, lighter and **less complicated**
- Clear melodic lines
- Short, **well-balanced** melodies
- Clear cut question and answer phrases
- Use of **imitation** and rising and falling sequences
- Mainly **melody and accompaniment**
- Some use of counterpoint (combining two or more ideas)
- **Homophonic** texture often used at the end of a **phrase** or section of music

The Pianoforte

- The Harpsichord fell out of favour after the Baroque period
- The Pianoforte was invented in 1698 by Cristofori in Italy
- The piano was more expressive and allowed for more contrasts and a range of dynamics
- Right hand parts were written to play the expressive melody
- Left hand parts were written to play a quieter accompaniment
- Popular accompaniment styles used in the classical period was the **alberti bass** (broken chords repeated in the left hand)

Instruments, Timbres and Sonorities

- The orchestra expanded during the classical period
- The strings were 'the backbone of the orchestra' and played the melodic line
- The woodwind became more important
- Brass section expanded to contain newly invented instruments
- Percussion section only contained Timpani
- The orchestra was directed by a conductor

Classical Composers



Gluck
(1714-1787)



C. P. E. Bach
(1714-1788)



Haydn
(1732-1809)



J. C. Bach
(1735-1782)



Clementi
(1752-1832)



Mozart
(1756-1791)



Beethoven
(1770-1827)

PE Knowledge Organiser- Athletics



Sprints

When sprinting drive knees high, keep eyes close to the body and move them hip lip. Look forwards with chest up and shoulders relaxed. When finishing dip forwards slightly as you cross the line.



SCAN ME



Long Distance

Remember to breathe in through your nose and out through your mouth. Run in a fashion, with shoulders relaxed, taking nice long strides to cover more. Build up distances to try and run continuously.



SCAN ME



Long Jump

Measure run up-start with dominant foot on the board, run 7, 9 or 11 steps at a sprint. Take off- plant foot on (but not over the board), eyes up, hips up and focus on driving up into the air. Flight-stretch both legs forwards and reach towards your feet with hands. Landing- aim to land feet together, and body forwards/sideways (not backwards).



SCAN ME



High Jump

Run up- a curved run up which brings you sideways to the mat. This should be a sprint. Take off- drive knee closest to the mat up high. Lift hips, lean back, and flick heels into the air as you go over the bar. Landing- land on your back, lifting feet into the air to avoid hitting the bar.



SCAN ME



Shot Putt

Sideways stance with weight on back leg- toe, knee and chin all in alignment. Shot held in fingers, not touching palm, and pushed into neck with elbow raised. Transfer weight from back leg to front, twisting torso. Push shot up and out at a 45-degree angle.



SCAN ME






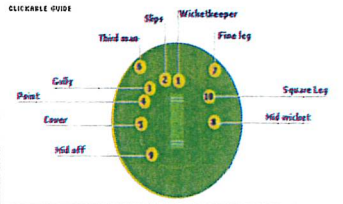
Discus

Sideways stance with weight on the back leg, discus held with very ends of fingertips. Non discus hand outstretched at 45-degree angle. Swing discus (palm towards the ground) up to reach non discus hand several times. As discus reaches 45-degree angle straight back leg. After 3-4 wind up swings release the discus forwards off your index finger.



SCAN ME

PE Knowledge Organiser- Cricket

KEYWORDS		Rules of Play
<p><i>Bat- a flat, wooden piece of equipment used by the batter to strike the ball and attempt the score runs.</i></p>		<ul style="list-style-type: none">Cricket is played between two teams each made up of eleven players.Games comprise of at least one innings where each team will take turns in batting and fielding.The fielding team will try to get the batsmen out by trying to hit the wicket with the ball when bowling, catching a shot from the batter, hitting the batsman's leg in front of the wicket or hitting the wicket before the batter gets to the wicket.The batsmen try to score as many runs as possible before getting out byEach time you run one full length of the pitch it equals 1 run. Hitting the ball to the boundary along the ground is 4 runs. Hitting the ball over the boundary on the full equals 6 runs. The fielding team must get 10 batsmen out before they can change over and start batting.The aim of the game is to score as many runs as possible before the fielding team takes 10 wickets. The team with the most runs wins.
<p><i>Wicket- consists of three stumps and two bails. It is a target for the bowler to hit and the batter must protect. Knocking this off means the batter is out.</i></p>		
<p><i>Bowler- the player delivering the ball with the aim of trying to get the batter out.</i></p>		
<p><i>Run- the main way of scoring in cricket. Runs are made by two batters running between the wickets after hitting the ball.</i></p>		
<p><i>Over- a set of six legal deliveries bowled by one bowler. After one over, a different bowler takes over from the opposite end of the pitch.</i></p>	  	

Bowling



- Place your thumb and index finger on the seam of the ball, on opposite sides of the ball. Place your middle finger on the other edge of the seam near your index finger.
- Carry the ball close to your chin. Coil your body then lean back, drop your elbow as you plant your leading leg. Straighten your elbow and your arm then shift your weight to the lead leg.
- Thrust your bowling arm forward and rotate your arm past your ear, snapping your wrist to release the ball.

Batting



- Stand side on to the bowler, feet should be width apart with knees slightly bent. Hold the bat with both hands close together on the handle, maintaining a firm but relaxed grip.
- As the bowler approaches, the bat should be close to the body. Move the front foot towards the ball, keeping the back leg straight and foot planted.
- Make sure your head and eyes are aligned with the ball throughout the swing. The bat should be angled so the face is towards the ground. When swinging, keep the elbows bent and locked. Follow through and strike the ball by swinging in a straight line.

Wicket keeping



To be an effective wicket keeper, the sportsperson needs to master catching and stumping techniques (presenting their hands in a way which maximises catching, quick reaction time to the batsman's movement), develop proper footwork and body positioning (crouched position, ready to move quickly whilst maintaining stability behind the stumps), and practice clear and effective communication with the bowler (allows for coordinating strategies and making necessary adjustments).

Overarm throw



Step One
Stand shoulder width apart, sideways to the target with the throwing arm taken back behind the head at a 90-degree angle. Point the non-throwing arm at the target.

Step Two
Transfer weight from back foot to the front foot by rotating hips and torso towards target. Pull throwing arm towards the target, leading with the elbow. Release the ball in front of head. Follow through with your throwing arm pointing toward the target.

Breakdown

of
Cricket
Rules



Where would be best to hit the ball to outwit my opponents?

Why would I want to use different bowls when bowling?

Why is spacing so important to consider when fielding?

PE Knowledge Organiser- Tennis

KEYWORDS

Backhand- a stroke in which the ball is struck on the opposite side of the body to the racquet hand.

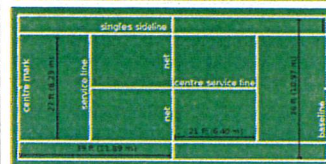
Drop shot- a gentle shot that just lands over the net.

Forehand- a shot hit from the racket arm side of the body.

Serve- the shot that begins each point, in which the server hits the ball after tossing it into the air. The serve must go diagonally across the court and bounce in the serving box.

Rally- a long series of shots.

Grip- how to hold the racket in tennis that is hit in a high arc, usually over the opponent's head.



Scoring

A player or team has to win four points to win a game. Any game starts at 0-0 and the zero point in tennis is called love. The progression of points occurs as follows:

First point - 15

Second point - 30

Third point - 40

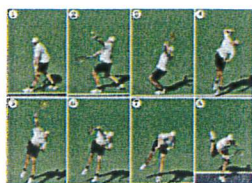
Fourth point - Game

However, if both players win three points each in a game (i.e score is 40-40), then it's called a deuce.

After deuce, the player who wins the next point has advantage. If the player/team who has advantage wins the next point, then they win the game.

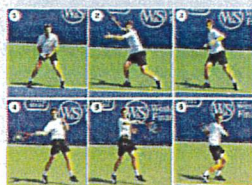
However, if the opposing player wins the next point after advantage, then the score moves back to deuce. A player/team needs to win two consecutive points after deuce to win a game.

Serving



1. Face sideways at an angle to the baseline. Fully extend the elbow down so the racket is pointing to the floor and fully extend the other elbow downwards and hold the ball in the palm of your hand facing up.
2. Separate the arms, extending the right elbow backwards and left elbow upwards whilst transferring body weight from front to back foot.
3. The left arm throws up the ball and arm stay straight with the ball slightly in front of you.
4. When the ball reaches the highest point, accelerate the racket head at the ball in a throwing action, strike the ball as the elbow is fully extended and aim the racket downwards.

Forehand

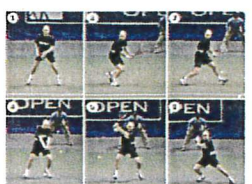


Step One- stand on the balls of feet with the knees slightly bent whilst facing sideways with shoulder and arm pointing towards opponent. The racket arm should be at a 45-degree angle with the face of the racket at head height.

Step two- transfer body weight from back to front foot and rotate the body quickly to face forwards. The racket head lowers and the forward swing travels from low to high, aiming to hit the ball at its highest point.

Step three- contact ball around waist height, beginning to rotate the racket at impact then follow through with the racket.

Backhand



The weaker hand should be on the top of the racket handle whilst racket is at waist height. Hands and trunk should turn to the side, so the shoulder of right arm is pointing to the ball. The right elbow should be fully extended whilst you transfer body weight from front to back foot.

The body should rotate quickly facing forward, transferring weight from back to front foot and the racket head should lower as accelerating forward. The swing should be low to high aiming to hit the ball at its highest point.

Make contact with the ball at around waist height and begin rotating the racket at impact. The racket should follow through to finish at the right shoulder.

Ready Position



Both hands start on the racket. Feet should be shoulder width apart with head forwards into the court. The knees should be slightly bent so centre of gravity is lowered. When the opponent hits the ball, go onto toes for extra spring in legs. Always return to the centre of the court when striking the ball.

Breakdown

of

Tennis

Rules



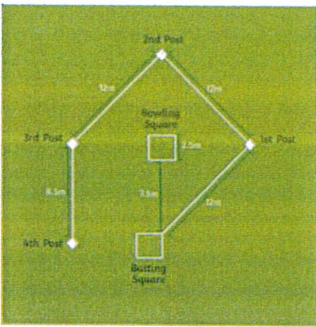

SCAN ME





Where would be best to hit the ball to outwit my opponents?

Why is it important to go back to the middle of the court when hitting the ball?

What happens during a serve if the ball hits the net but goes over, landing in the service box?

PE Knowledge Organiser- Rounders

KEYWORDS	 	Rules of Play
Underarm- technique of throw when you are bowling to the batter.		1. You must start in the batting box and not step out of it.
Batting-the player trying to score rounders for their team. They do this by hitting a bowled ball and running around the bases without stopping.		2. You only get 1 ball bowled at you, after which you must run whether you hit it or not.
Overarm Short- A throw that is used between the bases. This is when the fielding team are trying to get a player out by stumping the base.		3. You must keep in contact with a post once you have decided to stop running.
Overarm Long- A throw that is from the field to someone at a post or the bowler. It is travelling a further distance than overarm short.		4. A no ball means you get another attempt at hitting the ball.
Long Barrier- a technique to control a rounders ball that is travelling along the ground.		5. You must run around the outside of the post to the last post where you must hit the stump to get all the way round.
No Ball- the ball has been bowled above the batter's head, below the knee, wrong side of the body, too wide or too close to the body.		6. If you get to the second post you score half, if you get all the way past the fourth post, you get a full rounder.

Batting 	<ul style="list-style-type: none"> Stand sideways on to the bowler with the bat up and behind you. The arm will be on a 90-degree angle. Step in with the opposite leg. Swing through with the hips and follow through with the bat to contact the ball. Move body and arm position to hit the ball in a different direction but always in front of you. DO NOT DROP THE BAT, unless the umpire shouts no ball you must run.
Underarm Throw 	<p>Hand ball in dominant hand, step forward with the opposite leg, swing arm and release the ball before shoulder height. The ball must reach the batter between their knee and head. Aim for the backstop's hands.</p> <p>Types of bowls- straight bowl, donkey drop, spin bowl</p>
Long Barrier 	<p>STEP ONE: Approach the ball at speed and as you get into line with the ball, twist your upper body, leading with the shoulder furthest from the ball.</p> <p>STEP TWO: Bend both knees, so that the knee of the leg nearest to the ball touches the ground, but it is also next to the back of the heel of the other leg.</p> <p>STEP THREE: With fingers down and head forward, pick up the ball and then stand back up ready to deliver an overarm throw.</p>
Catching 	<ul style="list-style-type: none"> You can get someone out by catching their hit or by stumping them at a post after catching the ball. Get into position under the ball, hands in a cup shape. Bring the ball closer to the body to ensure it is not dropped.

Breakdown
of
Rounders
Rules



SCAN ME

Where would be best to hit the ball to outwit my opponents?

Why would I want to use different bowls when bowling?

Do I have to run on the inside of outside of the posts when batting?



Year 9: Introduction to Judaism

Knowledge Organiser

Key Knowledge:

Judaism basics:

Judaism is a monotheistic religion, it was founded by a man called Abraham around 2000 BC. Abraham was special to God as he believed in the one true God, not the multiple nature gods that the rest of his town worshipped. This is called polytheism.

Just like Christianity has many denominations, such as Catholic and Protestant, Judaism too has different understandings of the same religion. The most common are Orthodox Jews and Reform Jews. Same core beliefs, different interpretations.

The Family in Judaism

The home and the concept of family is central to Judaism. Many Jews will have objects in their homes which have religious significance. A Mezuzah is a case which is hung outside doorposts and contains prayers. This shows that God is always with them.

Jewish couples get married under a chuppah. This is a canopy which covers the couple, signifying the home they will have together.

Jewish couples get married under a chuppah. This is a canopy which covers the couple, signifying the home they will have together.

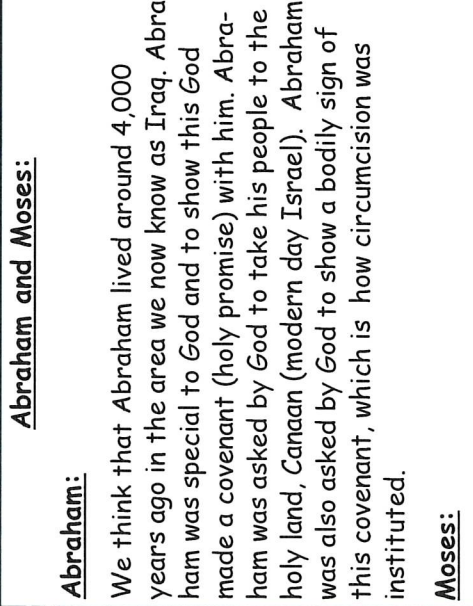
Abraham and Moses:

Abraham:

We think that Abraham lived around 4,000 years ago in the area we now know as Iraq. Abraham was special to God and to show this God made a covenant (holy promise) with him. Abraham was asked by God to take his people to the holy land, Canaan (modern day Israel). Abraham was also asked by God to show a bodily sign of this covenant, which is how circumcision was instituted.

Moses:

Hundreds of years later the Jews became enslaved by the Egyptians. Moses was a Jewish man who had been raised as an Egyptian prince his whole life. When Moses discovered his true heritage he was chosen by God to lead the Jews to freedom. Once free, Moses received the Ten Commandments from God, making a covenant between God, Moses and all the Jewish people.



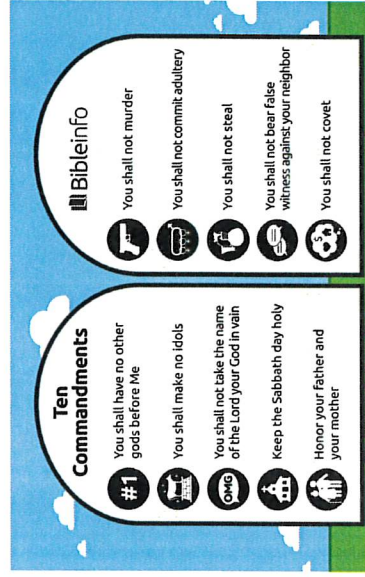
Jewish rituals




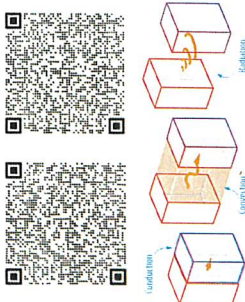

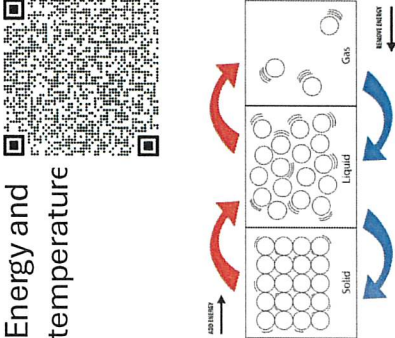

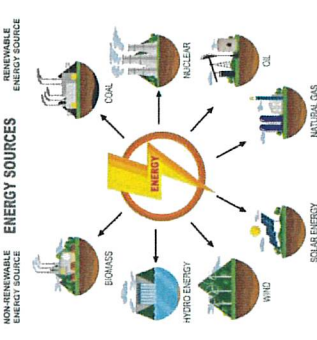

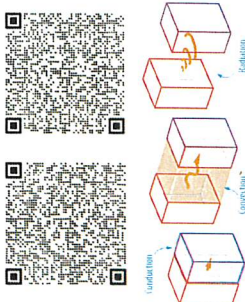

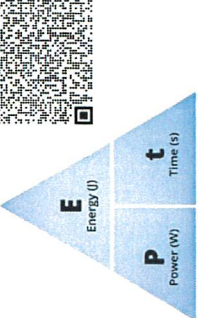

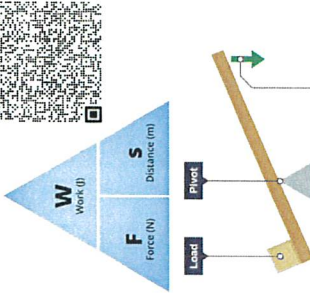


Brit Milah: a Jewish baby boy at 8 days old is circumcised (the foreskin of the penis is removed) to show that the baby is now part of the covenant. It is part of Jewish cultural identity.

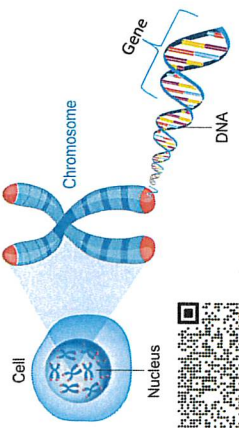
Brit Chayim—Reform Jews have this ceremony to welcome baby girls into the covenant since they cannot have a bodily sign like the boys.

Bar Mitzvah— This is a coming of age ritual for Jewish boys aged around 13. The boys will prepare for this by learning Hebrew to give a reading at the ceremony. After their Bar Mitzvah a boy is seen as morally responsible for living by the mitzvahs and can participate in group prayers at the synagogue.

Bat Mitzvah— This is a coming of age ceremony for Reform Jewish girls aged around 12. Girls prepare for this by learning Hebrew to give a reading at the ceremony. After this girls are seen as morally responsible for living by the mitzvahs and can participate in group prayers at the synagogue (these are known as a minyan)


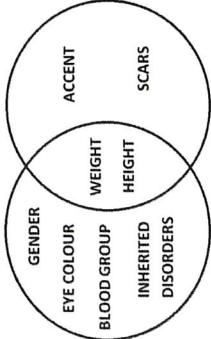
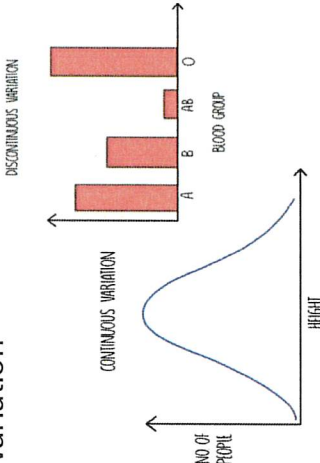
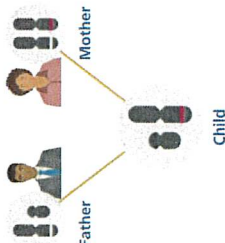
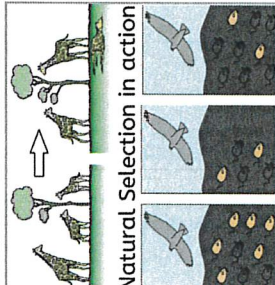

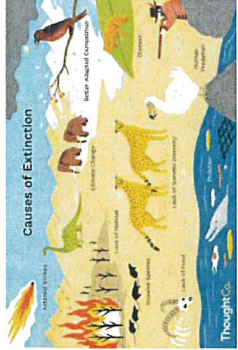


KEYWORDS		UNIT OVERVIEW	
CONDUCTION – A way energy is transferred through a material	INFRARED RADIATION – Radiation given off by the Sun and other objects that brings about energy transfer	 The law of the conservation of energy states that energy cannot be created or destroyed, only transferred. 	Science Year 9- Energy Knowledge Understanding Equipment In this unit you will learn: The law of conservation of energy Energy transfer (radiation, conduction, convection) Energy and temperature Energy and power Energy resources Energy transfer by force Food and fuels Link to Kerboodle
CONVECTION – The transfer of energy through liquids and gases	NON-RENEWABLE – An energy resource that can not be replaced faster or as fast as it is being used		
ENERGY STORE – A way in which energy can be kept in a system e.g. thermal energy in hot food	RENEWABLE – An energy resource that can be replaced faster or as fast as it is being used		
FOSSIL FUEL – Coal, oil and gas made from the remains of trees and sea creatures millions of years ago	WORK – A way of transferring energy that does not involve heating		
SUPPORT			
Energy transfer Conduction convection Infrared radiation	 	Energy and temperature  	Energy resources  
Energy transfer Conduction convection Infrared radiation	 	Energy and power  	Energy transfer by force  
Food and fuels <p>The energy in food varies. For example:</p> <ul style="list-style-type: none">• apple – 200kJ per 100g• chips – 1000kJ per 100g <p>The energy used when we do things varies too. For example:</p> <ul style="list-style-type: none">• sitting – 6kJ per minute• running – 60kJ per minute 			
WHAT DO YOU THINK?			
Do you know the difference in renewable and non-renewable resources? Give examples of both.	Do you know the energy stores?	Can you calculate the energy values in foods?	Can you explain conduction, convection and infrared radiation?
Do you know that the term 'work' means transferring energy in physics? Work done = force x distance	How does temperature relate to the kinetic energy of particles?	Do you know that the term 'work' means transferring energy in physics? Work done = force x distance	

KEYWORDS		UNIT OVERVIEW	
ADAPTATION – Characteristics of an organism that help it to survive in its environment	EVOLUTION – Development of a species over time	 <p>ST. ANNE'S R.C. VOLUNTARY ACADEMY</p>	Science Year 9- Inheritance Knowledge Understanding Equipment In this unit you will learn: Variation (including continuous and discontinuous) Inheritance Natural selection Extinction
BIODIVERSITY – The variety of organisms living in an area	FOSSIL – The remains of plants and animals		
CHROMOSOME – Long strand of DNA that contains genes	SPECIES – Organisms that can breed together and produce fertile offspring		
EXTINCT – When there are no members of a species left	VARIATION – Differences in characteristics of the same organisms.		

Link to
Kerboodle

SUPPORT

<p>Variation</p>   <p>GENETIC BOTH ENVIRONMENTAL</p>	<p>Continuous and discontinuous variation</p>  <p>CONTINUOUS VARIATION DISCONTINUOUS VARIATION</p> <p>HEIGHT</p> <p>NO. OF PEOPLE</p> <p>BLOOD GROUP</p> <p>A B AB O</p>	<p>Inheritance</p>  <p>Father Mother Child</p>	<p>Natural selection</p>  <p>Natural Selection in action</p>	<p>Extinction</p>   <p>Causes of Extinction</p> <p>ThoughtCo</p>
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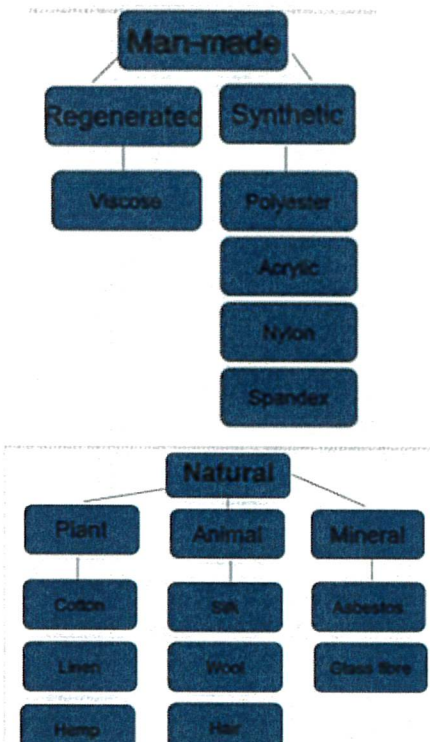

WHAT DO YOU THINK?




Can you define variation and, do you know the difference between inherited and environmental variation?	Can you describe the difference in continuous and discontinuous variation and represent variation using a graph?	Can you describe the process of natural selection and how species evolve through this?	Can you describe how characteristics are inherited?	Can you state why fossils are evidence for evolution?	Do you know what DNA, chromosomes and genes are?
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KEYWORDS		UNIT OVERVIEW	
<p>PEED – A measure of how far something travels in a given time</p>	<p>PRESSURE – A force exerted on an area</p>	<p>ST. ANNE'S RC VOLUNTARY ACADEMY</p> <p>Equations: Speed (m/s) = distance (m) / time (s) Pressure (N/m²) = force (N) / Area (m²) Moment (Nm) = force (N) x distance (m)</p> <p>Pressure</p> <p>In this unit you will learn:</p> <ul style="list-style-type: none"> •Speed •Motion graphs •Pressure in gases •Pressure in liquids •Pressure on solids •Turning forces <p>Knowledge Understanding Equippe</p> <p>Link to Kerboodle</p>	<p>Science Year 9 – Motion and Pressure</p>
<p>ISTANCE – TIME GRAPH – A graph showing how far an object travels per unit of time</p>	<p>MOMENT – The measure of the ability of a force to rotate an object around a pivot</p>		
<p>IVOT – The point at which a lever or a see-saw balances</p>	<p>LAW OF MOMENTS – An object is in equilibrium if the clockwise moment equals the anticlockwise moment</p>		
<p>AS PRESSURE – The force exerted by air particles when they collide with a surface</p>	<p>LIQUID PRESSURE – The pressure caused by the collision of particles in a liquid</p>		

SUPPORT			
<p>Motion Graphs</p> <p>Calculate the average speed from a distance-time graph you find the distance covered, and divide it by the time taken</p>	<p>Gas Pressure</p> <p>Gas Pressure is the force of the gas particles colliding with the walls of its container</p> <p>If you heat a gas, the particles will have more energy. This means they will move more quickly and collide with the container more often, so the pressure will be greater.</p> <p>Atmospheric pressure is the pressure acting on us from the air around us.</p>	<p>Pressure in Liquids and Solids</p> <p>The pressure at the bottom of a liquid is bigger than at the top, because the weight of the water pushing down increases with depth.</p>	<p>Moments</p> <p>If the centre of gravity is above the pivot there is no turning force.</p> <p>clockwise moment = force x distance on the right = 1000 N x 0.5 m = 500 Nm anticlockwise moment = force x distance on the left = 500 N x 1 m = 500 Nm</p>

WHAT DO YOU THINK?			
How would reducing the volume of a container affect gas pressure?	How do objects float?	How do snow shoes help you walk on snow?	Using the distance time graph given above – what is Lucy's speed in the first 10 minutes of her journey?
What other units can be used for pressure besides N/m ² ?			

KEYWORDS	Year 9 Knowledge Organiser-Textiles.	Unit Overview
<i>Fabrics-Are made up of yarns and yarn is made up of fibres.</i>		Create a drawstring bag, adding additional features such as logos, zips, pockets etc.
<i>Fibres-A material in a thin and continuous strand.</i>		You will use the running stitch or the blanket stitch to hand sew your work.
<i>Man made/Natural made. Synthetic or non-synthetic-If something is man made, it isn't natural and can't be found in the world around us.</i>		The bag must be aimed at a particular target audience.
<i>Analysing (An existing product)</i>		
<i>Sew on the spot/tie off</i>		
<i>Seam allowance-The area between sewing and the raw cut of the fabric.</i>		
<i>Properties and uses of fibres-le. Cotton is strong and easy to care for, making it useful to use when making clothes.</i>		

SUPPORT		
Textiles and materials		 SCAN ME
Sources and origins of fabrics and materials		 SCAN ME
Synthetic Fibres Types, Properties and Uses		

WHAT DO YOU THINK?
Can you identify which material is the best one to use for a particular product?
Do you understand the process of stopping your work from unravelling?
Which stitch would work best for this project and why?