Need To Know Book

Year 9

Autumn 2023

Name:_____

Form Group: _____

Helping every person achieve things they never thought they could.

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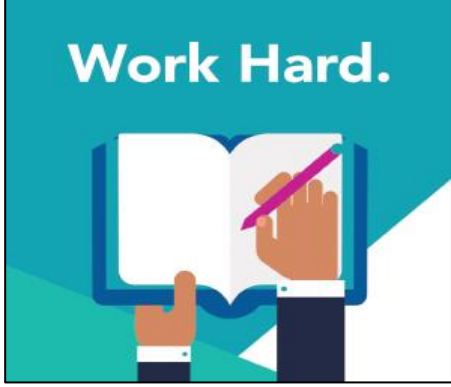
Contents Page

Knowledge Retrieval Sheet



What are knowledge retrieval sheets?

Here at Little Lever School, we think it is really important that you know what the essential knowledge is for each subject that you study. Learning takes place not only in the classroom, but in all areas of the school building, and at home. These knowledge retrieval sheets contain all the essential knowledge you will need to help revise and make progress towards achieving your best in all of your subjects.

By using your knowledge retrieval sheets each week you will be able to transfer your knowledge from your short-term memory, and make it stick. Within all your lessons, you will be asked to retrieve knowledge from your long-term memory. This might be in the form of quizzes or longer responses. These might require you to use lots of information you have already stored from previous lessons and from your own life experiences. These Need to Know Books will help you to check how much you can remember.

We have designed your knowledge retrieval sheets so that they are simple for you to use both in school and at home. You can even get others to help you. Below are some options for how you might use each sheet to make the knowledge stick in your brain so that you will be able to remember it.

Using Knowledge Retrieval Sheets- 5 Top Tips:

1. **'Look, Cover, Say, Write, Check'-** Look at a fact on your sheet, cover it up with your hand or a piece of paper. Say it out loud, write the fact down without checking and then uncover and check if you were correct.
2. **'If this is the answer, what is the question?'-** Quiz yourself by covering up facts on your sheet. For example, you could cover up the definition of key vocabulary and try to remember what the key vocabulary means.
3. **Independent low-stakes quizzing-** Use the questions on the back of each sheet to test yourself. You should write the answers on a separate sheet of paper so that you can use the question sheet again in future.
4. **Paired low-stakes quizzing-** Give your book or a sheet to someone else. (Could be a friend, teacher or family). They can ask you the questions on the back of any sheet and use the facts on the front to check if you are correct.
5. **Flashcard Revision-** Make flashcards using your knowledge sheets. Can you summarise the essential knowledge into your own words to put onto a pocket-sized revision card?

Art

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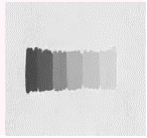
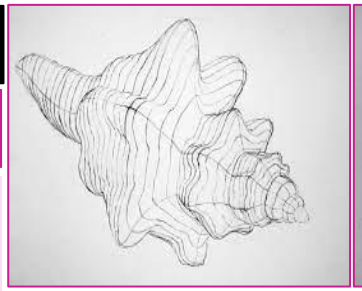
Year 9 Art: The Formal Elements

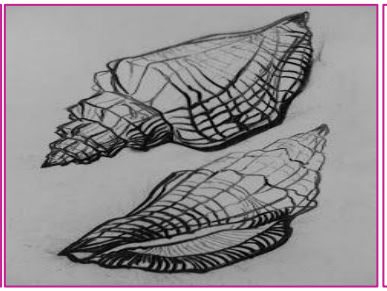
The Formal Elements of Art

	**Line**	A **line** is an identifiable path created by a point moving in **space**. It is one-dimensional and can vary in width, direction, and length. **Lines** can be horizontal, vertical, or diagonal, straight or curved, thick or thin.
	**Tone**	T**one** refers to the relative lightness or darkness of a colour. One colour can have an almost infinite number of different **tones**.
	**Colour**	Made up of three properties: hue, value, and intensity. Red, yellow and blue are primary colours, which means they can't be mixed using any other colours. Two primary colours mixed make a secondary colour. A primary and a secondary colour mixed make a tertiary colour
	**Shape**	A shape is an area enclosed by a line. It could be just an outline or it could be shaded in. Shapes can be either geometric, like a circle, square or triangle, or irregular.
	**Texture**	**Texture** refers to the surface quality in a work of **art**. We associate **textures** with the way that things look or feel.
	**Pattern**	Pattern is created by repeating lines, shapes, tones or colours. The design used to create a pattern is often referred to as a motif. Motifs can be simple shapes or complex arrangements.
	**Form**	Form is a three-dimensional shape, such as a cube, sphere or cone. Sculpture and 3D design are about creating forms.



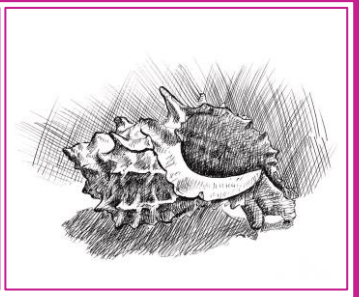
Contour Lines

Lines that are used to define the shape or form of an object or to show key details are called outlines or contour lines.



Descriptive Lines

Descriptive lines tell us more about a subject. They help make a shape look more like a three-dimensional object by showing light, shade and texture.



Expressive Lines

The way lines are created can be used to express emotions and to create mood.

Jason Scarpace

Jason Scarpace was born in 1972 in New York and is best known for his abstract fish art.

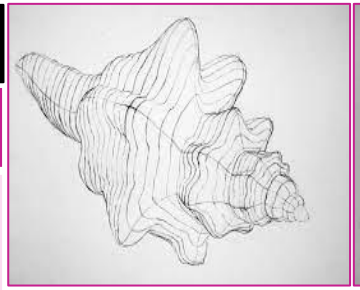
Scarpace's fish paintings are created in acrylic, oil, watercolour, pastel and a variety of other media on canvas, board and paper.

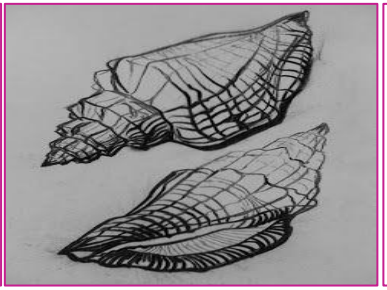
Widely regarded as colourful, completely original, and whimsical, the works of Jason Scarpace represent in his own words, "a personal journey through the use of basic art elements: line, shape and colour."

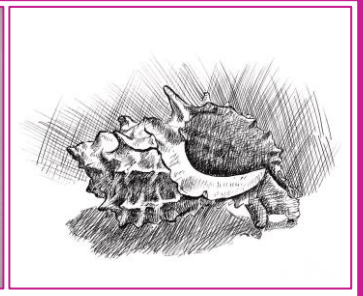
Year 9 Art: The Formal Elements

The Formal Elements of Art

What do you know about **line?**	
What do you know about **tone?**	
What do you know about **colour?**	
What do you know about **shape**?	
What do you know about **texture**?	
What do you know about **pattern**?	
What do you know about **form**?	







What are contour lines?	What are descriptive lines?	What are expressive lines?

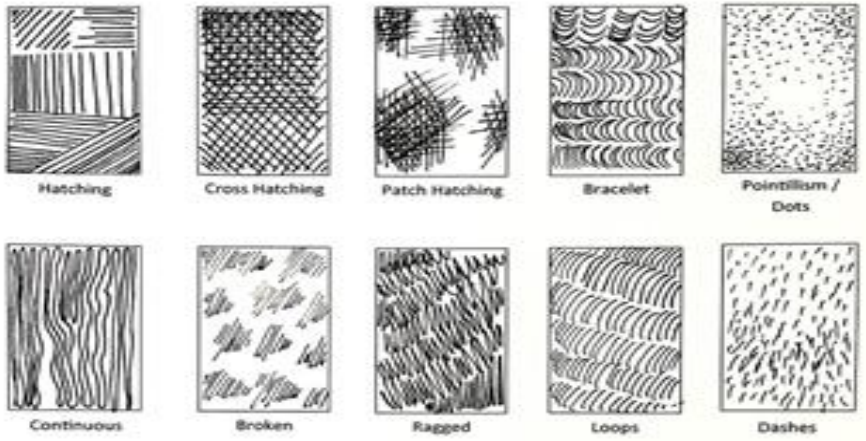
Jason Scarpace

Jason Scarpace was born in:

Scarpace's fish paintings are created in

Widely regarded as colourful, completely original, and whimsical, the works of Jason Scarpace represent in his own words...

Year 9 Art: The Formal Elements



Natural Forms

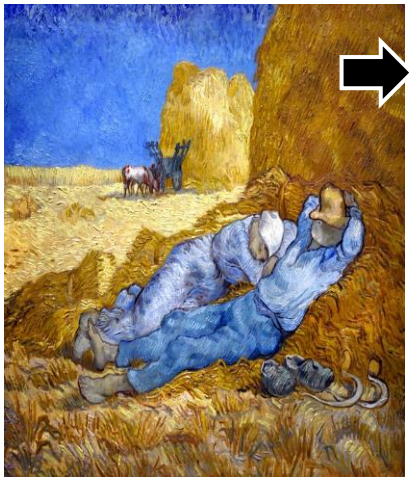
Natural form is an object in nature in its original form.

For example: leaves, flowers, pinecones, seaweed, shells, bones, insects, stones, fossils, crystals, feathers, birds, fish, animals – in fact, anything you can find in nature – complete or part of it.

Mark Making

Mark making describes the different lines, dots, marks, patterns, and textures we create in an artwork. It can be loose and gestural or controlled and neat.

It can apply to any material used on any surface: paint on canvas, ink or pencil on paper, a scratched mark on plaster, a digital paint tool on a screen... Artists can also use mark-making to express feelings and emotions.



Implied Texture

Rather than accurately copying the appearance of their subject, many artists use texture to show their technique and to express emotion. Vincent Van Gogh created many heavily textured artworks. using thick application of oil paint in an expressive manner.

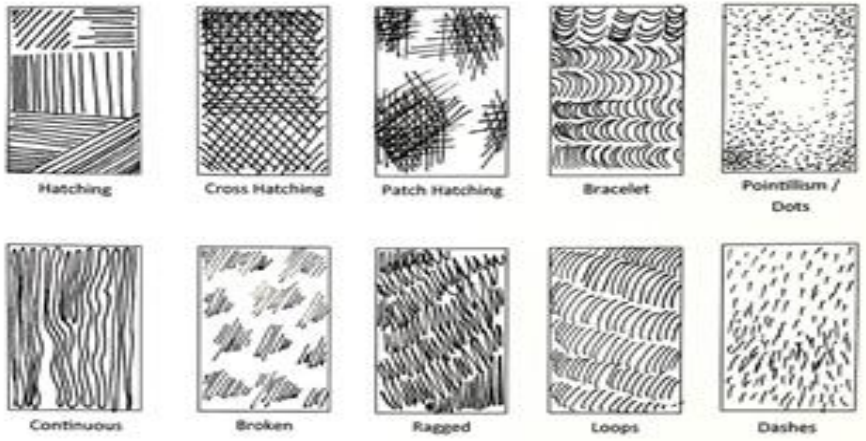
This creates an artwork that has a rough texture as well as a raised surface. Applying thick areas of paint on a canvas like this is known as impasto. This layered, thick paint creates a visual effect that allows you to see the individual brushstrokes the artist has used.

Actual Texture

Actual texture, or physical texture, means the actual physical surface of an artwork or design. It describes the tactile feeling you would get if you were able to run your hand over an artwork.

This feeling can vary depending on the materials the artist used to create the piece of work. It could be smooth, bumpy, coarse, rough or many other textures.
Actual texture is the result of the materials used and the artist or designer's technique.

Year 9 Art: The Formal Elements



Natural Forms

Natural form is _____

_____ .

For example: leaves, flowers, pinecones, seaweed, shells, bones, insects, stones, fossils, crystals, feathers, birds, fish, animals – in fact, anything you can find in nature – complete or part of it.

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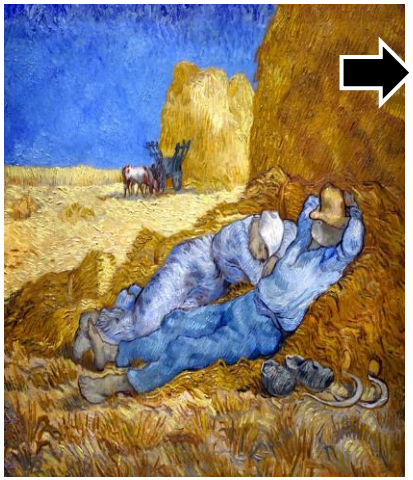

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Actual texture is the result of the_____

_____ .

Computing

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Year 9 Computing

E Safety

Definition: Sharing nude images

Sending, receiving, or forwarding sexually explicit messages, photographs or images, usually between mobile phones but could be any digital device.

The law states the following things are illegal when involving any person under the age of 18:

- It is illegal to take naked photographs of yourself.
- It is illegal for you to send those photographs to someone else.
- It is illegal to receive inappropriate images of someone under the age of 18.
- It is illegal to forward an inappropriate image of someone under the age of 18 to someone else.
- It is illegal to persuade someone under the age of 18 to create a sexual image of themself.

Cyber Security

You and Your Data

Data is raw facts and figures. E.g.: John: 28, Claire: 49

Information is created when that data has been processed and becomes meaningful: John needs to resit the test.

The following **personal data** may be collected about you: Name, date of birth, address

All organisations and people using and storing personal data must abide by the following **Data Protection Act** principles.

Data must be:

Social Engineering

- **Social engineering** is a set of methods used by cybercriminals to deceive individuals into handing over information that they can use for fraudulent purposes.
- **Phishing** - A phishing attack is an attack in which the victim receives an email disguised to look as if it has come from a reputable source, in order to trick them into giving up valuable data.
- **Blagging** - Blagging (also known as pretexting) is an attack in which the attacker invents a scenario in order to convince the victim to give them data or money.
- **Name generator attacks** - These are attacks in which the victim is asked in an app or a social media post to combine a few pieces of information or complete a short quiz to produce a name. Attackers do this to find out key pieces of information that can help them to answer the security questions that protect people's other accounts.
- **Shouldering** - Shouldering (also known as shoulder surfing) is an attack designed to steal a victim's password or other sensitive data. It involves the attacker watching the victim while they provide sensitive information, for example, over their shoulder.

Year 9 Computing

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Cyber Security

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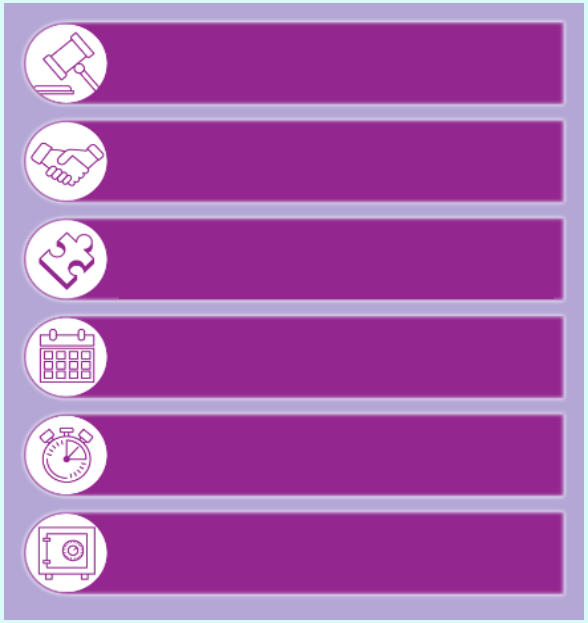

Social Engineering

- **What is social engineering?**
- **What is phishing?**
- **What is blagging?**
- **What are name generator attacks?**
- **What is shouldering?**

Year 9 Computing

Cyber Security (continued)

What is 'hacking'? Gaining unauthorised access to or control of a computer system.

Why might people want to hack?

- To steal data
- To disrupt services
- For financial gain
- For political reasons (espionage and activism)
- For fun (planting the flag)
- For ethical reasons

What are 'penetration testers'?

People who are paid to legally hack into computer systems with the sole purpose of helping a company identify weaknesses in their system.

What is the difference between a 'denial of service DoS' attack and a 'distributed denial of service DDoS' attack?

A DoS is a cyberattack in which the criminal makes a network resource unavailable to its intended users. This is done by flooding the targeted machine or website with lots of requests in an attempt to overload the system. A DDoS is the same as DoS attack, only this time multiple computers are making attacks at the same time.

What is a 'brute force' attack?

This is a form of attack that makes multiple attempts to discover something (such as a password).

What is Malware?

Malware (malicious software) is software that is designed to gain access to your computer with malicious intent.

What is a virus?

Viruses are a malicious form of self-replicating software. Once on a computer or network, a virus will replicate itself by maliciously modifying other computer programs and inserting code.

What is a 'worm'?

Worms replicate (copy) themselves but do not attach themselves to files as a virus does. Instead, worms spread through the network and use the system's resources. Most worms cause problems by slowing down the network significantly.

What is a 'Trojan'?

A Trojan is a piece of software that appears to perform a useful function (such as a game) but unbeknown to the user it also performs malicious actions. For example, it might open a 'back door' to give an attacker remote access to your computer.

Methods to protect networks from cyber attacks:

- Secure passwords (password managers)
- A maximum number of attempts to log in before an account is locked
- CAPTCHA
- Biometrics
- Two-factor authentication (2FA)
- User permissions
- Firewall
- Anti malware
- Auto updates

Year 9 Computing

Cyber Security (continued)

What is 'hacking'?

Why might people want to hack?

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What are 'penetration testers'?

What is the difference between a 'denial of service DoS' attack and a 'distributed denial of service DDoS' attack?

What is a 'brute force' attack?

What is Malware?

What is a virus?

What is a 'worm'?

What is a 'Trojan'?

What are methods to protect networks from cyber attacks?

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Year 9 Computing

Cyber Security

Computer Misuse Act:

This law covers an individuals use of computers.

It covers:

- Unauthorised access to computer material
- Unauthorised access with intent to commit or facilitate the commission of further offences
- Unauthorised acts with intent to impair, or with recklessness as to impairing, the operation of a computer

Firewall

A firewall checks incoming and outgoing network traffic. It scans the data to make sure it doesn't contain anything malicious and that it follows the rules set by the network.

Anti-Malware

Anti-malware is software that scans any file that is able to execute code. If anti-malware spots anything suspicious in the code, the files are quarantined.

Auto Updates

Auto-updates refers to software that automatically checks for available updates for the software you have on your computer. Once it finds an update, the software can be set either to alert the user or to install it automatically.

User Authentication

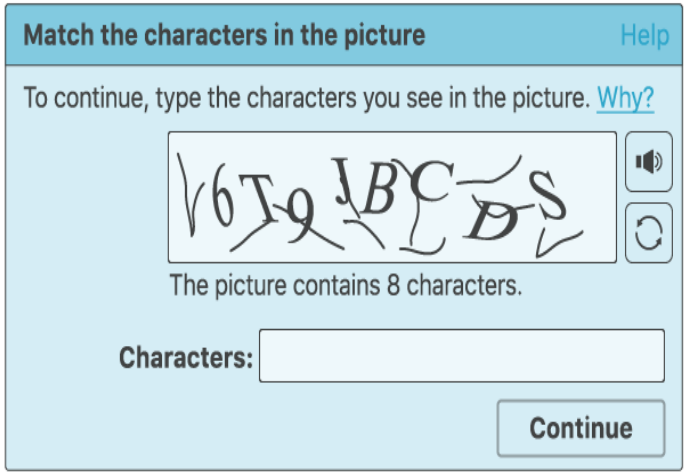
Only authorised users identified with the correct username and password will be allowed access. Different users will have access to different parts of the network.

Two factor Authentication

User authentication that provides an extra layer of security of online accounts. In addition to a username and password, a one time passcode or a PIN number may be sent to the user to input.

Captcha

A type of user authentication that proves the user is a real person, not a computer.



Year 9 Computing

Cyber Security

Computer Misuse Act:

This law covers an individuals use of computers.

What does it cover?

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What is a firewall?

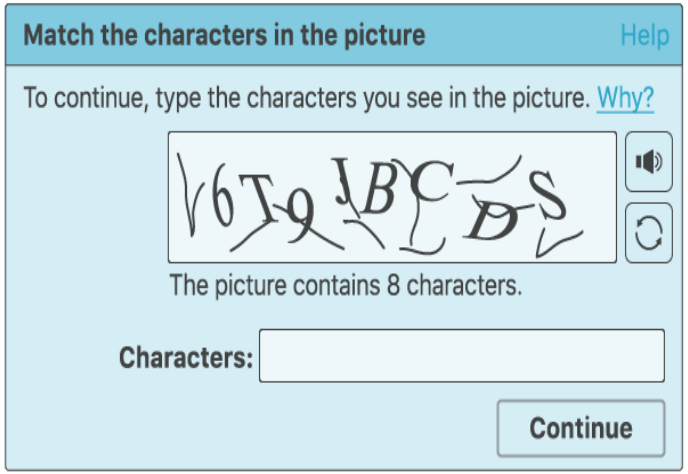
What is anti-malware?

What are auto updates?

What is user authentication?

What is two factor authentication?

What is captcha?



Design and Technology

Year 9 Catering

What are seasonal foods?

Fruit and vegetables naturally grow in cycles, and ripen during a certain season each year. When they are in season they are harvested.

We mostly think of fruit and vegetables as seasonal however, some fish and meat can also be seasonal.

Advantages to using seasonal foods:

- Food is very fresh
- Food has the best flavour, texture and colour
- Nutrients have not been lost over time
- Food is cheaper than importing from other countries
- More support for local producers
- Food travels less distance

Disadvantages of using seasonal foods:

- Less choice at different times of the year
- Favourite products are not always available
- Reduced trade to other countries

What are Food Miles?

Food miles are a way of attempting to measure how far food has travelled before it reaches the consumer.

It is a good way of looking at the environmental impact of foods and their ingredients.

It includes getting foods to you, but also getting waste foods away from you, and to the landfill!

Fairtrade:

Ensuring that farmers in less economically developed countries get a fair deal;

Local foods:

Buying locally supports local business and farmers and some believe that food produced locally is more sustainable;

Genetically modified (GM) food:

Scientific intervention is used to change a plant, animal or micro-organism's genes or to insert one gene from another organism

Effects of Heat on Food

- Proteins **coagulate** – they 'set' and become firm e.g. an egg setting when fried
- Starches **gelatinise-** this helps to thicken foods e.g. flour in a cheese sauce
- Sugars **caramelise** – they become sweet and brown e.g. sugar melted on the top of a crème brulée
- Water **evaporates** – this explains why foods become dry when they cook e.g. bread toasted
- Fats **melt** – e.g. the fat that comes out of sausages when you grill them
- Surfaces **brown** – e.g. the surface of a piece of meat or the crust of a loaf of bread

To sauté a dish means to cook it in a small amount of fat over high heat, making sure that the food doesn't stick to the pan.

To simmer means to cook something liquid, or something with liquid in it, at a temperature slightly below boiling

To boil is the cooking of food by immersion in water that has been heated to near its boiling point

To reduce a liquid means to simmer it until some of the water in it has evaporated, which intensifies the flavours and thickens the liquid

Why do we cook food?

- To make it nicer to eat e.g. add flavour, improve texture, enhance colour
- To make it safe to eat by destroying food poisoning bacteria
- To destroy bacteria which cause food spoil (go off)
- To make food easier to digest

Year 9 Catering

What are seasonal foods?

What are the advantages to using seasonal foods?

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What are the disadvantages of using seasonal foods?

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What are Food Miles?

What is Fairtrade?

What are local foods and what are the benefits?

What is genetically modified (GM) food?

What are the different effects of heat on food?

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To sauté a dish means to cook it in a…

To simmer means

To boil is the cooking of food by…

To reduce a liquid means to

Why do we cook food?

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Year 9 Catering

Convection

Convection is used in many situations, for example boiling eggs in a pan.

The water molecules closest to the bottom of the pan will gain kinetic (movement) energy and spread out.

This area of water will become less dense and rise.

Cooler water at the top of the pan moves down to take its place.

This causes a convection current, the boiled water circulates around the food, cooking it.

Conduction

During conduction heat energy is passed to the food from the heat source by **direct contact** e.g. frying bacon.

Heat energy is **transferred** from the hob to the outside of the pan and pass on this energy to any other molecules they are in contact with.

Food that comes into contact with the inside of the pan will also gain this energy.

Radiation

All warm objects give off infra-red radiation that travels as waves.

Food that is cooked by grilling or toasting is cooked by radiation.

The infra-red radiation which is absorbed by the food increasing its temperature.

Microwaves

Microwaves use a different type radiation to cook food. The radiation is high-energy radio waves given the name microwaves.

The microwaves penetrate the food and are absorbed by the water in the food, causing the molecules to vibrate, increasing its temperature.

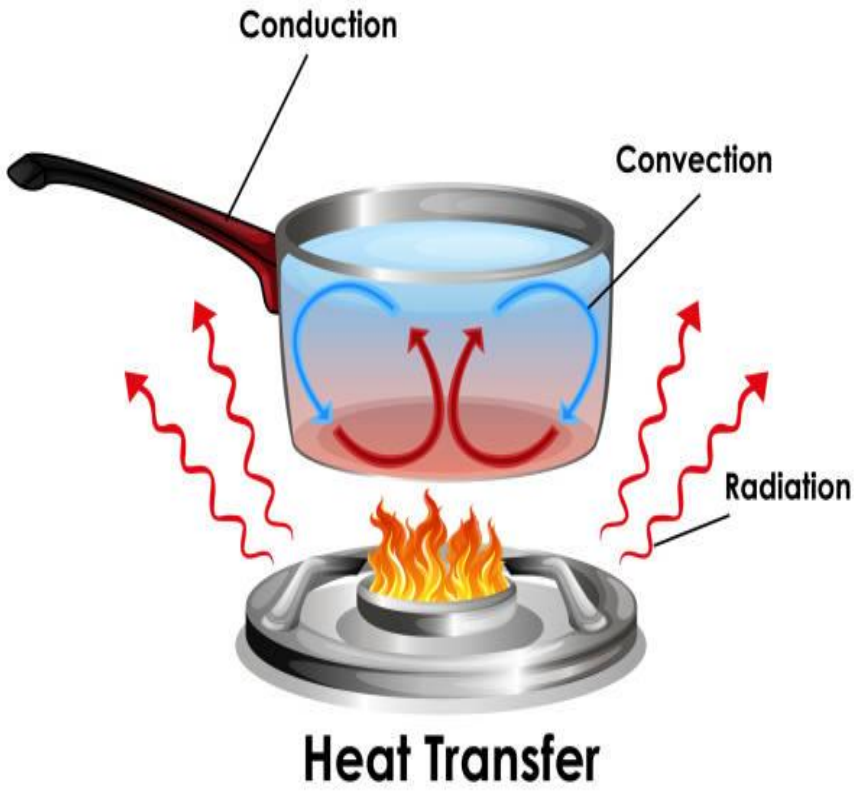
This heat energy cooks the food.

Food preservation

Known “as the science which deals with the process of prevention of decay or spoilage of food thus allowing it to be stored in a fit condition for future use”.

Convenience foods

A food, typically a complete meal, that has been pre-prepared commercially and so requires minimum further preparation by the consumer



Year 9 Catering

What is convection?

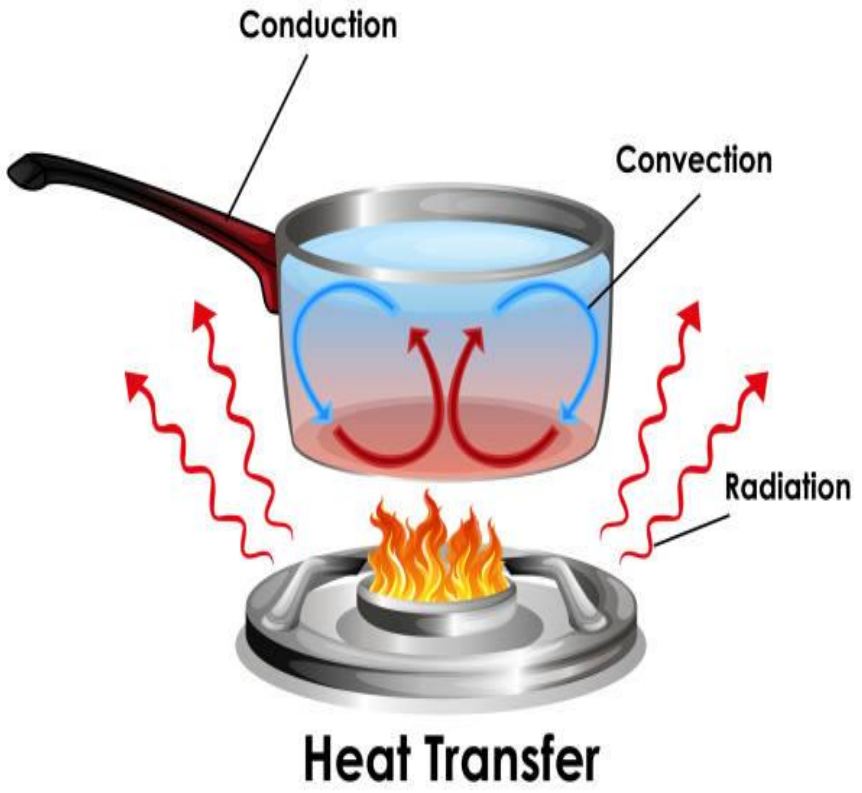
What is conduction?

What is radiation?

What are microwaves?

What is food preservation?

What are convenience foods?



Year 9 Design and Technology

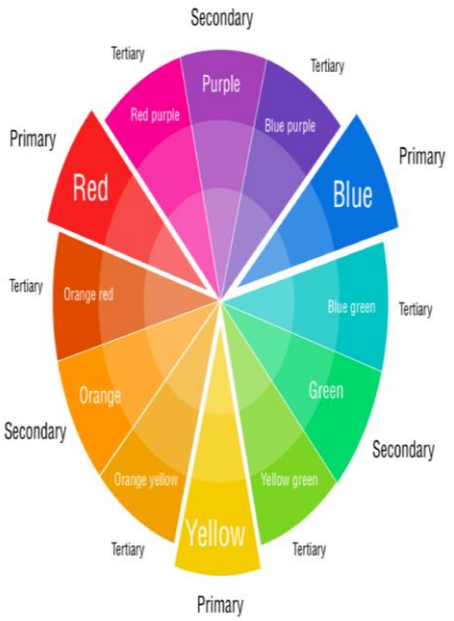
Colours

Complementary Colours

These are the ones that are directly opposite each other on the colour wheel and provide good contrast when used together.

Analogous Colours

Colours are called analogous colours when they are very similar to each other, especially when they are next to each other on a colour wheel.



Smart materials

A 'smart material' can be defined as a material whose physical properties change in response to an input e.g. making them simpler or safer to use.

Live edge acrylic sheets have a vivid fluorescent edge which 'glows' under ambient light

QTC (quantum tunnelling composite) smart materials used as the switch becomes conductive when under pressure.

Classification of Plastics (polymers)

- Thermoforming polymers
- Can be softened with the use of heat and moulded into shapes.
- Thermosetting polymers
- Once moulded into shape, cannot be remoulded with the use of heat.

Characteristics of Polymers

- Polymers are mainly made from crude oil.
- Polymers can be produced from synthetic sources.
- Most thermoforming polymers are recyclable.
- Most thermosetting polymers are not recyclable.
- Generally, polymers have good resistance to corrosion/degradation.
- Polymers can be moulded into shape relatively easily.
- Polymers are self-coloured.
- Polymers are sold as sheets, film, bar, rod and tubes.

Joining Plastics

Tapping is the process of making an internal thread in a material.

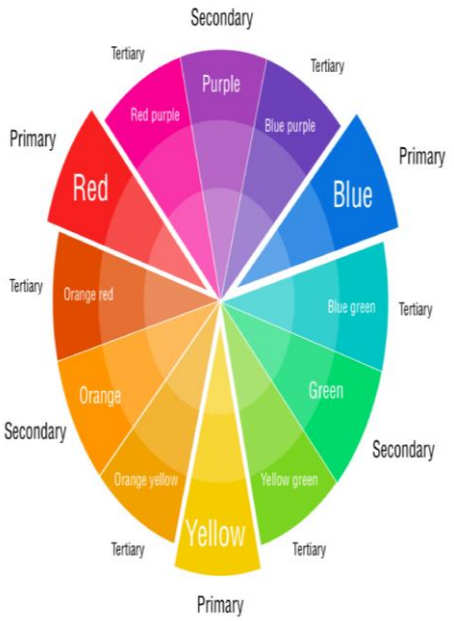
Gluing using solvent cement. Fuse the two layers of acrylic together.

Year 9 Design and Technology

Colours

What are complementary colours?

What are analogous colours?



Smart materials

A 'smart material' can be defined as a…

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What are the classifications of plastics? (polymers)

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What are the characteristics of polymers?

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-

Joining Plastics

Tapping is

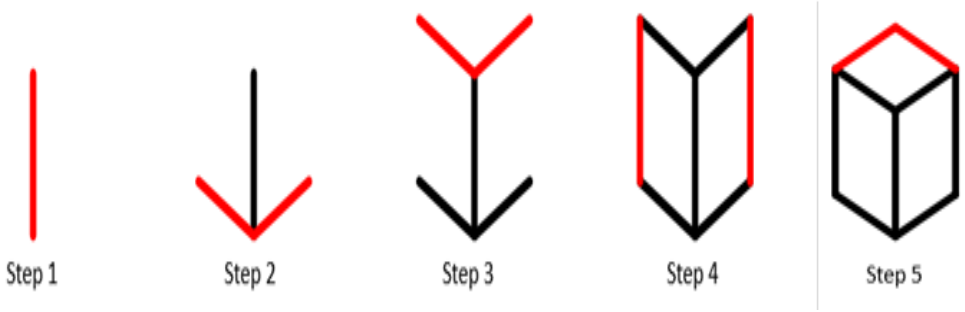
Gluing means

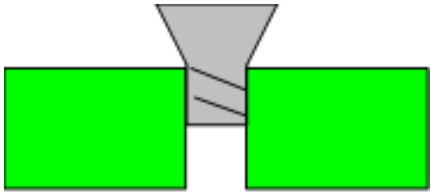
Year 9 Design and Technology

Isometric Drawing

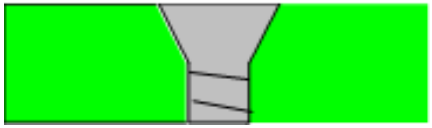
Isometric is a basic form of drawing objects in 3d (think Minecraft style!!!)

The better you get at drawing the more realistic you can make your design look.





Not Countersunk



Countersunk

Recycling Plastics

Plastics are accumulating in the natural environment and threatening wildlife, damaging ecosystems and causing large scale littering. This has a devastating impact on our oceans and marine life.

The benefits of reducing plastic consumption include: Preventing pollution by lessening the amount of new raw materials used. Saves energy. Reduces greenhouse gas emissions, which contribute towards climate change.

Shaping & Finishing Acrylic

1. **Saw**
2. **File**
3. **Sand**
4. **Polish**

Year 9 Design and Technology

Explain what isometric drawing is:

Draw your initials in isometric projection:

Explain the difference between a not countersunk and a counter sunk screw below. Draw a sketch if it helps.

Why is it important to reduce the use of single use plastic and recycle where possible?

Identify the tools for shaping and finishing acrylic

1.

2.

3.

4.

Drama

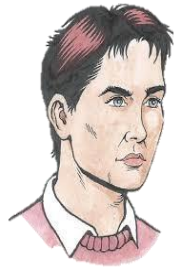
Helping every person achieve things they never thought they could.

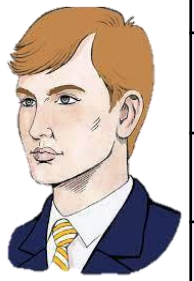
Little Lever School
be kind | work hard | take responsibility

Year 9 Drama: Blood Brothers

Characters

Mickey Johnstone	The lower-class twin. He is honest, sincere and goodhearted. He impregnates Linda, gets laid off, is arrested for Sammy's crime and ends up in prison and addicted to anti-depressants. His rage at Linda & Edward for having an affair drives the play's finale.
Edward Lyons	Is also good-natured but the higher-class twin. His sheltered upbringing makes him innocent but because of class he gets good opportunities e.g. university and a good job. His good- natured manner leads to the play's final scene.
Mrs Johnstone	Biological mother of the twins and a horde of other children. Left by her husband she gets a job as a cleaner. She is the moral centre of the play; is tortured by guilt and regret.
Mrs Lyons	Opposite of Mrs J whom she employs as a cleaner. She adopts Edward as her own child. Is haunted by the original act of a mother giving up her child. The guilt turns into suspicion and paranoia. She announces the affair and contributes to the murder of her adopted son.
Linda	Begins as a tomboyish young girl but both twins fancy her from an early stage. She only has eyes for Mickey as a teenager but later turns to Edward for comfort and support, which turns into an affair. Despite this, she loves both twins and is a sympathetic character.
Narrator	All-knowing and always slightly menacing- takes many roles throughout the play. Narrator constantly reminds the audience of the terrible choice that began this chain of events. Frequent mentions of fate and superstition but the Narrator claims it was class, not fate.
Sammy	When they are younger, Mickey just wants to be like Sammy. Quickly becomes a juvenile delinquent; even attempting to rob a bus as a teenager- he ends up in prison with Mickey.
Mr Lyons	Married to Mrs Lyons- away so Mrs L can adopt Edward. Grows increasingly concerned about his wife's mental health and wellbeing.





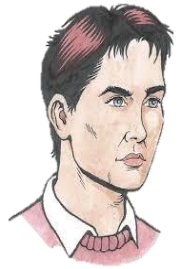
Key Words

Protagonist	the leading character or one of the major characters in a play, film, novel
Theme	An idea or subject that is repeated throughout a piece of writing or speech
Injustice	Lack of fairness
Stigmatized	Describe or regard someone or something as worthy of disgrace
Juxtaposition	Two or more contrasting ideas placed near each other.
Dramatic Irony	When the audience understands something that the characters in a play do not
Tension	A feeling of nervousness or unease before an important or difficult event
Foreshadowing	A warning or hint about a future event.
Prejudice	A preconceived opinion that is not based on reason or actual experience
Playwright	The person who writes a play
Tragedy	A genre of drama based on human suffering and, mainly, the terrible or sorrowful events that befall a main character
Vulnerable	Exposed to the possibility of being attacked or harmed, either physically or emotionally

Year 9 Drama: Blood Brothers

Characters

Write down 5 characteristics or facts about **Mickey Johnstone**:



Write down 5 characteristics or facts about **Edward Lyo**ns:

Write down 5 characteristics or facts about **Mrs Johnstone:**

Write down 5 characteristics or facts about **Mrs Lyons**:

Write down 5 characteristics or facts about **Linda**:

Write down 5 characteristics or facts about the **narrator**:

Write down 2 characteristics or facts about **Sammy**:

Write down 2 characteristics or facts about **Mr Lyons**:

Key Words- what are their definitions?	
Protagonist	
Theme	
Injustice	
Stigmatized	
Juxtaposition	
Dramatic Irony	
Tension	
Foreshadowing	
Prejudice	
Playwright	
Tragedy	
Vulnerable	

Year 9 Drama: Blood Brothers

Key Terms	Definitions
Brief Biography	Willy Russell was born in 1947 into a working-class family near Liverpool. He left school at the age of 15 without academic qualifications and became a hairdresser. By the age of 20, he felt the need to return to education and after leaving university, he became a teacher in his home city.
Social	There was a large gap between working and middle class in Britain during this time. The Johnstones and Lyons families are class stereotypes. Many working class families struggled financially and to find work. There was also a class divide in education; this is shown when Mickey goes to secondary school and Edward attends a private boarding school.
Margaret Thatcher	The first female Prime Minister in power during that time. She was responsible for lots of working-class people losing their jobs. During her time in power, unemployment rates were raised higher than ever before. She believed everyone can be successful if they work hard.
Marilyn Monroe	A famous Hollywood movie star from the 1950s who Mrs J is compared to. She is known for being glamorous, but also struggled with depression which led her to commit suicide (by painkillers).

Themes

Superstition: The audience is constantly reminded of this. The narrator asks us if superstition is to blame for boys' fate.

Class: Russell shows us the injustice of the class divide with the Johnstones and Lyons, as well as M and E. Related to education, opportunity and power.

Nature vs. Nurture: Splitting up the twins shows us how the environment can have a huge impact on life chances.

Relationship: The development and change in friendship between M, E, and Linda. The interaction between Mr and Mrs L, mother and son, and Mrs J and society.

Key Quotations

- ❑ "Don't you know what a dictionary is?"
- ❑ "Y'know the devil's got y' number"
- ❑ "A debt is a debt and must be paid"
- ❑ "How come you got everything and I got nothin'?"
- ❑ "A mother, so cruel,/ There's a stone in place of her heart"
- ❑ "If either twin learns that he was once a pair, they shall both immediately die"
- ❑ "You've got to have an ending, if a start's been made./ No-one gets off without the price being paid"
- ❑ "I could have been him"
- ❑ "Do we blame superstition for what came to pass/ Or could it be what we, the English, have come to know as class?"
- ❑ "She's cooing and cuddling as if she were his mother. It's a, it's a thingy, innit?"
- ❑ "That's what's going to happen if I have anymore trouble from one of yours. I warned you last time"
- ❑ "It was more of a prank, really, Mr Lyons. I'd just dock his pocket money if I was you"

Year 9 Drama: Blood Brothers

Key Terms	Definitions
List 4 facts about Willy Russell	
Where do we see a social class divide in the play?	
List 4 facts about Margaret Thatcher	
List 4 facts about Marilyn Monroe	

Themes

Where do we see the theme of superstition in the play?

Where do we see the theme of nature vs. nurture in the play?

Key Quotations- fill in the missing word:

- ❑ "Don't you know what a _____ is?"
- ❑ "Y'know the devil's got y' _____ "
- ❑ "A debt is a _____ and must be paid"
- ❑ "How come you got _____ and I got nothin'?"
- ❑ "A mother, so cruel,/ There's a _____ in place of her heart"
- ❑ "If either twin learns that he was once a ____ , they shall both immediately die"
- ❑ "You've got to have an _____ , if a start's been made./ No-one gets off without the price being paid"
- ❑ "I could have been _____ "
- ❑ "Do we blame _____ for what came to pass/ Or could it be what we, the English, have come to know as class?"
- ❑ "She's cooing and _____ as if she were his mother. It's a, it's a thingy, innit?"
- ❑ "That's what's going to happen if I have anymore trouble from one of yours. I _____ you last time"
- ❑ "It was more of a _____ , really, Mr Lyons. I'd just dock his pocket money if I was you"

Year 9 Drama: Blood Brothers

Plot

Act 1: before birth	Act 1- 7 years old	Act 2- 14 years old
The play starts with the narrator talking about a 'story about the Johnstone twins' and two men laid dead on the stage.	Mickey and Eddie meet for the first time at the park and become 'blood brothers' when they find out they share the same birthday.	Both boys have become interested in girls but feel awkward.
We go back in time where we learn Mrs Johnstone's husband has just left her; she is very poor and already has 7 children.	When Mrs J realises the two have met, she is horrified.	Edward attends boarding school.
She starts a new job cleaning Mrs Lyons' house and finds out she's expecting twins.	Mrs L reacts more violently and slaps Edward when he swears at her. She even contemplates uprooting her entire family in order to escape.	Mickey and Linda have romantic feelings for each other but Mickey's lack of confidence is getting in the way.
She strikes up a deal with Mrs L as she can't afford to keep both so Mrs L convinces Mrs J to give her one of the babies as her husband is currently away on business and she can't have a child of her own.	Despite their mothers' disapproval, the boys continue to see each other and play with their friend, Linda. They play various pranks and end up getting caught by the police.	Mickey and Eddie both struggle at school- Mickey insults a teacher and Edward refuses to take off the locket. When Mrs L finds out, she's appalled but is more upset when she sees the content of the locket.
The babies are born and Mrs J begrudgingly hands one of the babies over for Mrs L to later fire her.	Mrs L decides they should move.	Mickey and Edward meet, by circumstance again- Mickey takes Edward back to his but they are not aware that Mrs L is following them.
	Before Edward leaves Mrs J gives him a locket with a picture of herself and Mickey. The Johnstones also find out they are being relocated.	Once the boys leave the house, Mrs L attacks Mrs J with a knife and curses her, calling her a witch.
		The boys meet with Linda and spend the summer together- an idyllic sequence follows as the trio age from 14 to 18.

Year 9 Drama: Blood Brothers Plot

Act 1: before birth	Act 1- 7 years old	Act 2- 14 years old
1. Who is first to appear on the stage?	6. Where do Mickey and Edward meet for the first time?	13. What are both boys interested in at the beginning of this act?
2. How many children does Mrs Johnstone have at the beginning of the play?	7. How does Mrs Johnstone feel when she finds out the boys have met?	14. What kind of school does Edward attend?
3. What job does Mrs Johnstone begin?	8. How does Mrs Lyons react when she finds out the boys have met each other?	15. What gets in the way of Mickey and Linda's relationship?
4. What deal does Mrs Johnstone make with Mrs Lyons and why?	9. Who is Mickey and Edward's friend?	16. How do both Mickey and Edward individually struggle at school?
5. What does Mrs Lyons do to Mrs Johnstone at the end of the act?	10. What dramatic decision does Mrs Lyons make for her family?	17. When Mickey and Edward meet again, what are they not aware of?
	11. What does Mrs Johnstone give Edward before he leaves?	18. What does Mrs Lyons call Mrs Johnstone?
	12. What do the Johnstone family find out at the end of the act?	19. Who do Mickey and Edward spend the summer with?

Year 9 Drama: Blood Brothers

Plot

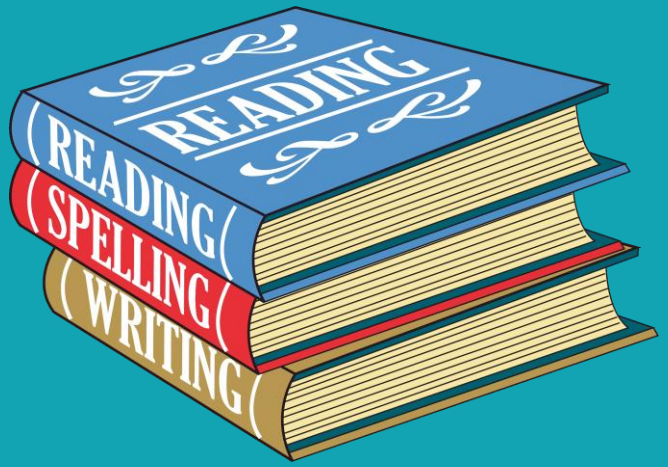
Act 2- 18 years old	Act 2- the end
At 18 in the sequence, the narrator warns that soon, both their joy and childhood will end.	Mickey continues to take the pills despite Mrs J & Linda's pleas.
Edward has developed feelings for Linda and is at university whilst Mickey works in a factory.	Linda, desperate, asks Edward, now a city councilman, to find them an apartment and getting Mickey a job.
Edward self-sacrifices his feelings and encourages Mickey to ask Linda to be his girlfriend and she accepts.	Mickey is angry about this and a devastated Linda seeks comfort with Edward and begins an affair with him.
In October, Mickey tells his mum that Linda is pregnant and the two will be getting married. Their wedding coincides with a huge economic downturn resulting in Mickey getting paid off.	The affair continues and Mickey stops taking his pills for Linda's sake.
When Edward returns from Christmas, Mickey is downtrodden and claims 'blood brothers' is childish.	Mrs Lyons reveals Linda and Edward's affair to Mickey. Enraged, he takes Sammy's gun out of the floorboards and confronts Edward, with a distraught Mrs J and Linda trying to get him to stop.
Edward confesses his love to Linda but she tells him she is married and pregnant.	Mickey finds and confronts Edward at the town hall about the affair, as well as whether Mickey's daughter is actually his. Edward denies fathering Mickey's child.
A desperate Mickey participates in a burglary with Sammy that goes wrong resulting in Sammy killing a man.	The police surround the area and Mrs J bursts in and tells the boys they are twins separated at birth. Mickey asks why he couldn't have been Edward and then accidentally pulls the trigger of the gun, shooting and immediately killing Edward, the police then shoot Mickey.
They are both sentenced to prison and Mickey becomes depressed and is prescribed antidepressants which he becomes addicted to, even after he's been released.	The play ends with the boys led on the stage and the narrator wonders what really killed the twins: superstition or the class system?

Year 9 Drama: Blood Brothers

Plot

Act 2- 18 years old	Act 2- the end
20. What does the narrator warn at the beginning of the act?	28. What does Mickey do against Linda's wishes?
21. Where does Mickey work?	29. What help does Linda ask Edward for?
22. What does Edward encourage Mickey to do?	30. What happens next between Edward and Linda?
23. What is happening at the same time as Mickey and Linda getting married?	31. What who tells Mickey about the new relationship and what does Mickey do when he finds out?
24. How is Mickey feeling when Edward returns from university?	32. Why does Mickey find Edward?
25. What does Edward tell Linda when he returns?	33. How do each of the brothers die?
26. What happens when Sammy and Mickey complete a burglary?	34. What is the narrator's question at the end of the play?
27. What happens to Mickey in prison?	

English



Helping every person achieve things they never thought they could.

Little Lever School
be kind | work hard | take responsibility

Year 9 English: 'Boys Don't Cry' and Transactional Writing

An **idiom** is a metaphor we use so much it is common in speech e.g. 'over the moon', 'see the light'.

An **extended metaphor** is a metaphor that continues over a number of sentences, rather than just in one.

An **allusion** is a reference to something outside of the text that the reader would recognise. (A famous person, place or event).

Symbolism is where an object, character or event represents something else, in the text or in real life.

A **colloquial tone** is chatty and informal, almost like spoken language.

A **semantic field** is a group of words linked by meaning e.g. 'battle, platoon, death, destruction, grief and honour all form the semantic field of war.

Knowledge for Reading

Writing about Literature

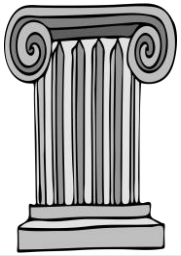
P	Point	Answer the question
E	Evidence	Include a quote
A	Analyse	Explain the inferences behind the quote in detail
Z	Zoom	Explain what a powerful word or technique suggests
E	Effect	Explain what the writer wants us to feel or think
L	Link	Explain how these ideas link to the real world

Knowledge for Writing

We use a new paragraph when we change the **time, place, topic or person** we are writing about. (TiP ToP) The first line of every paragraph should be a **topic sentence**, which gives a clue about what the paragraph with focus on.

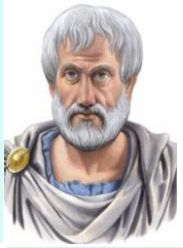
Connectives are words and phrases that connect ideas together in writing. They often appear in the first line (**topic sentence**) of a paragraph, to link the paragraphs together.

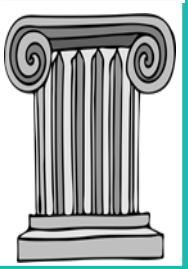
Type of Connective	Examples		
Adding	Also	In addition	Furthermore
Sequencing	Firstly	Finally	Meanwhile
Emphasising	Above all	Especially	Most importantly
Comparing	Similarly	Likewise	In the same way
Contrasting	In contrast	Conversely	On the other hand
Illustrating	For example	For instance	This can be seen in
Introduce an attitude	I believe	In my view	Some might argue



Aristotle's Three Pillars of Rhetoric (Persuasion) : Aristotle was an Ancient Greek philosopher who argued that you must include three types of persuasion in your writing/speech to effectively convince an audience.

Logos – Your reasons and arguments make logical sense (explained, proved and factual)
Pathos – Provoke an emotional reaction in your audience (emotive language, exaggeration, adjectives)
Ethos – Prove you are credible, trustworthy and you know your stuff! (use statistics , research and evidence)





Year 9 English: 'Boys Don't Cry' and Transactional Writing

What is an **idiom?**

What is an **extended metaphor**?

What is an **allusion?**

What is **symbolism?**

What is a **colloquial tone?**

What is a **semantic field?**

Knowledge for Reading

Writing about Literature

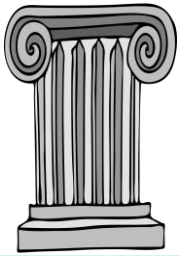
P	Point	Answer the question
E	Evidence	Include a quote
A	Analyse	Explain the inferences behind the quote in detail
Z	Zoom	Explain what a powerful word or technique suggests
E	Effect	Explain what the writer wants us to feel or think
L	Link	Explain how these ideas link to the real world

Knowledge for Writing

When do we use a new paragraph?

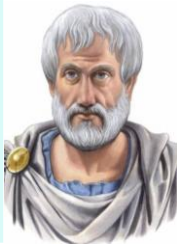
What are **connectives**?

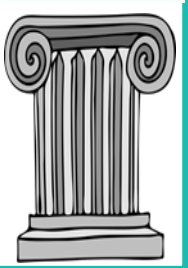
Type of Connective	Examples		
Adding			
Sequencing			
Emphasising			
Comparing			
Contrasting			
Illustrating			
Introduce an attitude			



Aristotle's Three Pillars of Rhetoric (Persuasion) : Aristotle was an Ancient Greek philosopher who argued that you must include three types of persuasion in your writing/speech to effectively convince an audience.

What is logos?
What is pathos?
What is ethos?





Year 9 English:

Vocabulary	Definition	Example
1. Intrigue	Make someone curious and interested to find something out.	*The opening of a narrative must intrigue the reader.*
2. Tension	Where a writer builds an expectation that something frightening or dramatic is going to happen.	*The horror film built tension as the characters walked through the graveyard.*
3. Powerless	Something has no power.	*The flowers were powerless in the wind.*
4. Equality	Fair rights and opportunities for everyone.	*The rules created equality for all people.*
5. Aspiration	An aim or ambition for the future.	*It is my aspiration to travel the world.*
6. Tone	The attitude or emotion behind a piece of speech or writing.	*She spoke with a sarcastic tone.*
7. Responsibility	Having a duty to perform a task or take care of something, because you have power and control over it.	*It is everyone's responsibility to care for the environment.*
8. Inner Conflict	A character has a mental struggle over a decision or what is right or wrong.	*Dante suffered an inner conflict as he couldn't decide what to do for the best.*
9. Identity	The parts of your character, personality, interests, culture and background that make a person who they are.	*His family traditions were an important part of his identity.*
10. Theme	A subject or topic that occurs throughout a text.	*The theme of family is central to the novel 'Boys Don't Cry'.*

Grammar

11. Main Clause

A phrase that makes sense on its own, as it has a subject and a verb

Dante loved his child.

12. Subordinate clause

A phrase that doesn't make sense on its own. It adds information to the main clause.

In the middle of the night,

13. Parenthesis

Extra explanations added into sentences

The novel is set in America.

14. Fronted Adverbial

An adverb, or adverbial phrase, used at the beginning of the sentence to suggest how, when or where something happened.

Yesterday, Dante's life changed forever.

15. Prepositional phrase

A phrase that tells you when or where something is in relation to something else.

On, at, in next to, yesterday, after, during, before, sometimes

16. Minor Sentence

A sentence that does not make grammatical sense on it's own (as it doesn't have both a subject and verb) but is used as a sentence

Oh no!

Punctuation

17. Dashes - -

Add extra information to a sentence

Dante's life changed forever - in just a matter of seconds

18. Brackets ( )

Add parenthesis *(extra information)* to a sentence

19. Comma ,

Add extra information to a sentence

Dante's life changed forever, in just a matter of seconds.

Year 9 English:

Vocabulary	Definition	Example
1. Define ***intrigue***		*The opening of a narrative must intrigue the reader.*
2. Define ***tension***		*The horror film built tension as the characters walked through the graveyard.*
3. Define ***powerless***		*The flowers were powerless in the wind.*
4. Define ***equality***		*The rules created equality for all people.*
5. Define ***aspiration***		*It is my aspiration to travel the world.*
6. Define ***tone***		*She spoke with a sarcastic tone.*
7. Define ***responsibility***		*It is everyone's responsibility to care for the environment.*
8. Define ***inner conflict***		*Dante suffered an inner conflict as he couldn't decide what to do for the best.*
9. Define ***identity***		*His family traditions were an important part of his identity.*
10. Define ***theme***		*The theme of family is central to the novel 'Boys Don't Cry'.*

Grammar

11. What is a main clause?	12. What is a subordinate clause?	13. What is parenthesis?	14. What is a fronted adverbial?	15. What is a prepositional phrase?	16. What is a minor sentence?

Punctuation

17. What do dashes do?

18. What do brackets do?

19. What do commas do?

English: Spelling Challenge- Most commonly misspelled words.

1. Acceptable	11. Believe	21. Disappear	31. Foreign	41. Ignorance
2. Accidentally	12. Calendar	22. Disappoint	32. Fourth	42. Immediate
3. Accommodate	13. Category	23. Drought	33. Gauge	43. Independent
4. Acquire	14. Cemetery	24. Embarrass	34. Generally	44. Indispensable
5. Acquit	15. Changeable	25. Equipment	35. Grammar	45. Intelligence
6. A lot	16. Collectible	26. Exceed	36. Grateful	46. Interrupt
7. Amateur	17. Committed	27. Excite	37. Guarantee	47. Judgement
8. Apparent	18. Conscience	28. Existence	38. Harass	48. Knowledge
9. Argument	19. Conscientious	29. Experience	39. Height	49. Leisure
10. Because	20.Definitely	30. February	40. Hierarchy	50. Library

English: Spelling Challenge- Most commonly misspelled words.

1.	11.	21.	31.	41.
2.	12.	22.	32.	42.
3.	13.	23.	33.	43.
4.	14.	24.	34.	44.
5.	15.	25.	35.	45.
6.	16.	26.	36.	46.
7.	17.	27.	37.	47.
8.	18.	28.	38.	48.
9.	19.	29.	39.	49.
10.	20.	30.	40.	50.

English: Spelling Challenge- Most commonly misspelled words.

51. Lightning	61. Occurrence	71. Questionnaire	81. Rhythm	91. Umbrella
52. Maintenance	62. Official	72. Receive	82. Schedule	92. Vacuum
53. Manoeuvre	63. Parallel	73. Recommend	83. Scissors	93. Vicious
54. Millennium	64. Parliament	74. Referred	84. Sensible	94. Whether
55. Miniature	65. Particle	75. Reference	85. Separate	95. Weigh
56. Minute	66. Pigeon	76. Relevant	86. Special	96. Weird
57. Mischievous	67. Possession	77. Religious	87. Success	97. Whistle
58. Noticeable	68. Preferable	78. Restaurant	88. Tomorrow	98. Wonderful
59. Occasion	69. Principle	79. Ridiculous	89. Twelfth	99. Yoghurt
60. Occur	70. Privilege	80. Rhyme	90. Tyranny	100. Youth

English: Spelling Challenge- Most commonly misspelled words.

51.	61.	71.	81.	91.
52.	62.	72.	82.	92.
53.	63.	73.	83.	93.
54.	64.	74.	84.	94.
55.	65.	75.	85.	95.
56.	66.	76.	86.	96.
57.	67.	77.	87.	97.
58.	68.	78.	88.	98.
59.	69.	79.	89.	99.
60.	70.	80.	90.	100.

Geography

Helping every person achieve things they never thought they could.

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Year 9 Geography: Vulnerable Landscapes

Key Vocabulary		
1	**What is adaptation?**	How plants and animals change their bodies to survive in different locations.
2	**What is altitude?**	The height of an object or point in relation to sea level or ground level.
3	**What is climate change?**	A long-term, large-scale change in the planet's average temperatures and weather patterns
4	**What is a coral reef?**	An underwater ecosystem, consisting of corals that create the reef. Coral are marine invertebrate, and reefs are ridges of jagged material just above or below the surface of the sea.
5	**What are fold mountains?**	Where two or more of Earth's tectonic plates are pushed together
6	**What is mitigation?**	To reduce or prevent the effects of something from happening.
7	**What are plate tectonics?**	The Earth's crust and upper part of the mantle are broken into large pieces called tectonic plates. These are constantly moving at a few centimetres each year and are known as plate tectonics.
8	**What is a Sherpa?**	A member of a Tibetan people living on the high southern slopes of the Himalayas in eastern Nepal and known for providing support for foreign trekkers and mountain climbers.
9	**What is a storm surge?**	A storm surge is a change in sea level that is caused by a storm. They can lead to extensive flooding and are dangerous for people living in many coastal areas.
10	**What is tourism?**	Tourism is when people travel away from home for pleasure.
11	**What is a tsunami?**	A series of extremely long waves caused by a large and sudden displacement of the ocean, usually the result of an earthquake below or near the ocean floor.
12	**What do we mean by vulnerable?**	A vulnerable landscape is an area which is at risk from natural or human damage. It could be permanent or temporary but will have a negative effect on the environment and its people.

13. Explain the formation of the Himalayan mountains.

- The Indian-Australian plate moved towards the Eurasian plate due to convection currents in the mantle.
- The plates smashed into each other.
- The land crumples and mountains starts to form.
- This continues to happen and the mountain grows.
- Mount Everest continues to grow today

Year 9 Geography: Vulnerable Landscapes

Key Vocabulary		
1	What is adaptation?	
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12	What do we mean by vulnerable?	

13. Explain the formation of the Himalayan mountains.

Year 9 Geography: Vulnerable Landscapes

How does tourism impact the Himalayas?

14	**What is a social impact of tourism on the Himalayas and the people who live there?**	There have now been traffic jams of people on Mount Everest trying to reach the summit.
15	**What is an economic impact of tourism on the Himalayas and the people who live there?**	Tourism is a major source of income for many of the locals.
16	**What is an environmental impact of tourism on the Himalayas and the people who live there?**	Pollution has increased as people leave unwanted items along the mountain range.

The location of the Maldives

19. What four strategies are proposed by the Maldives and UNESCO to protect the islands?

1. Build sea walls around the most populated islands.
2. Build artificial (man-made) islands that are higher than the current natural islands.
3. Preserve mangrove forests and coral reefs.
4. Build more hotels to increase tourism to earn extra money to build man-made islands.

The location of the Maldives

17	**Describe the location of the Maldives** 	The Maldives are located in the Indian Ocean in southern Asia. India is to the north of the Maldives and Somalia is to the west. The Maldives are located just above the equator.

Why are the Maldives vulnerable?

18	**What makes the Maldives a vulnerable landscape?**	• The Maldives are 1600 km from the nearest country - India. • Due to the Maldives location in the Indian Ocean, there is little protection from major storms. • The Maldives are very low lying islands that are expected to be submerged in the future.

Year 9 Geography: Vulnerable Landscapes

How does tourism impact the Himalayas?

14	What is a social impact of tourism on the Himalayas and the people who live there?	
15	What is an economic impact of tourism on the Himalayas and the people who live there?	
16	What is an environmental impact of tourism on the Himalayas and the people who live there?	

The location of the Maldives

17	Describe the location of the Maldives 	

The location of the Maldives

19. What four strategies are proposed by the Maldives and UNESCO to protect the islands?	

Why are the Maldives vulnerable?

18	What makes the Maldives a vulnerable landscape?	

Year 9 Geography: Globalisation

	Key Vocabulary	
1	**What is air freight?**	The carriage of goods by air.
2	**What is containerisation?**	A system of transportation to carry goods around the world in containers.
3	**What do we mean by de-industrialised?**	The reduction of manufacturing within an economy.
4	**What is digital workplace?**	The digital workplace is a work environment which will be dominated by new communications technology. It means workers will collaborate over the internet from many places around the world and some people may never meet these colleagues in person or leave their home office for work.
5	**What is a franchise?**	A type of agreement that entails reproducing a successful business model across multiple locations.
6	**What is globalisation?**	The increasing connections between places and people across the planet, established through trade, politics and cultural exchanges, and helped by technology and transport
7	**What do we mean by industrialised?**	The transformation of economies to those that are dominated by manufacturing and services.
8	**What is Panamax?**	The maximum ship size that can transit the Panama Canal.
9	**What is post-Panamax?**	Ships larger than Panamax that do not fit in the original canal locks.
10	**What is a production base?**	The total national industrial production capacity available for the manufacture of items to meet materiel requirements.
11	**What is a transnational corporation?**	A company that is controlled from its home country but has large operations in many different countries
12	**What is world trade?**	The purchase and sale of goods and services by companies in different countries

Year 9 Geography: Globalisation

Key Vocabulary		
1	What is air freight?	
2	What is containerisation?	
3	What do we mean by de-industrialised?	
4	What is digital workplace?	
5	What is a franchise?	
6	What is globalisation?	
7	What do we mean by industrialised?	
8	What is panamax?	
9	What is post-panamax?	
10	What is a production base?	
11	What is a transnational corporation?	
12	What is world trade?	

Year 9 Geography: Globalisation

Introduction to Globalisation

13	**What are the advantages of globalisation?**	1. Life expectancy in many developing countries has risen to over 70 years old. 2. Since 1990, the population of developing countries living in extreme poverty has halved to 21% 3. We have seen the fastest reduction in poverty in human history, this coincides with rising levels of global trade and investment.
14	**What are the disadvantages of globalisation?**	1. 1.4 billion people still live in poverty, both in rural areas and slums of cities. 2. Polluting industries have moved from Europe and North America to Asia and Africa. 3. Many factory and farm workers in Asia and Africa endure hard working conditions for low pay.

TNC Case studies

15	**How does cotton production have a negative impact on the Aral Sea?**	Global demand for cotton means that the farms around the Aral Sea need massive volumes of water. They have been draining the sea for 50 years and it is now around 1/5th of its original size. The fertilisers and pesticides which have washed from the farms have crystalised with the salts of the former sea creating a toxic poisoning dust which blows into the towns and villages causing lung diseases and cancers.

Losers of Globalisation

16	**Who are the winners of globalisation?**	· Workers who are able to move to higher income countries. · Multinationals who gain from tax avoidance and outsourcing cheaper labour. · Educated skilled workers who have power to gain higher wages. · Families who receive remittance money from relative working in global industries e.g. shipping crews.
17	**Who are the losers of globalisation?**	· Land-locked countries unable to develop exporting industries. · Countries who suffer from a 'brain drain' as skilled workers move abroad and leave e.g. scientists, doctors, teachers. · Manufacturing detector in high labour cost countries. · Structural unemployment amongst former manual workers due to lack of training in tertiary jobs.

How bad are bananas?

18	**What do we mean by a carbon footprint?**	The amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organisation, or community This is measured in CO_2e or Carbon Dioxide equivalents

TNC Case studies

19	**What are the positives of a digital workplace?**	· Lower operating costs as you need to pay for less offices, meals, hotel stays, flights etc. · Increased collaboration from around the world bringing more experts together. · More profits into your business meaning more tax income for governments. · Better for the environment as less travel is reducing air/noise/water pollution.

Year 9 Geography: Globalisation

Introduction to Globalisation

13	What are the advantages of globalisation?	
14	What are the disadvantages of globalisation?	

TNC Case studies

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Losers of Globalisation

16	Who are the winners of globalisation?	
17	Who are the losers of globalisation?	

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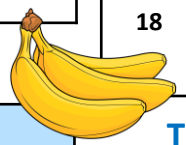

18	What do we mean by a carbon footprint?	

TNC Case studies

19	What are the positives of a digital workplace?	

History

Year 9 History:

Topic		Question	Answer
End of World War I	1	Which COUNTRIES are referred to as 'the big three?'	USA, Great Britain and USSR
	2	How did Hitler kill himself?	Hitler took poison capsules and shot himself.
	3	Which LEADERS were in charge of the Big Three when Germany surrendered?	Roosevelt, Churchill, Stalin
	4	Why did USA begin to distrust the USSR?	USA thought USSR was spreading Communism in Europe
	5	Why did USSR begin to distrust USA?	They wondered why America had kept the atom bomb a secret from them.
Intro to Cold War	6	What was the Cold War?	A rivalry between USA and USSR from 1945-1990
	7	What is Capitalism?	A system where goods and property are owned privately.
	8	What is Communism?	A system where goods and property are owned by the state.
	9	What is a superpower?	A very powerful and influential country e.g. USA or USSR
Arms Race and Propaganda	10	What is an arms race?	Where countries compete to build up weapons.
	11	How many times have atom bombs been used in war?	Twice - USA attacked Hiroshima and Nagasaki in 1945
	12	What does M.A.D. stand for?	Mutually Assured Destruction
	13	What is an ICBM?	A missile that can be fired from ground rather than dropped from a plane.

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Year 9 History:

Topic		Question	Answer
Berlin Blockade and airlift	14	How were Germany and Berlin controlled after World War II	They were divided in to 4 zones each. (American, British, French and Soviet).
	15	Who succeeded Roosevelt in becoming America President?	Harry S Truman
	16	Why did Stalin blockade Berlin?	He felt threatened by USA, Britain and France joining their zones.
	17	What did Stalin hope to accomplish by blockading Berlin?	Stalin hoped the allies would give him complete control of Berlin.
	18	What did the blockade end?	The allies airlifted supplies into Berlin and Stalin did not want to start a war
Berlin Wall	19	Which 3 countries had joined their zones in Germany?	USA, Great Britain and France
	20	Why was West Berlin more prosperous than the East?	America had invested lots of money in it.
	21	Why did USSR **SAY** it built the Berlin Wall?	To stop Western agents entering the East
	22	Why did USSR really build the Berlin Wall?	To stop Eastern citizens from leaving

Year 9 History:

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Year 9 History:

Topic		Question	Answer
Korean War	23	What is domino theory?	If one country was allowed to fall to communism, then communism could quickly spread to neighbouring countries
	24	Who supported North Korea's invasion of the South?	China and USSR
	25	Who joined the war to help South Korea?	United Nations (mostly USA)
	26	How did the Korean War end?	With Korea divided into tow countries.
	27	What is the line that separates North and South Korea	38th Parallel
Cuban Missile Crisis	28	Why was USA threatened by the island of Cuba?	Cuba had turned Communist under Fidel Castro
	29	Why did Cuba feel threatened by USA?	USA had unsuccessfully tried to overthrow the Communist regime with the Bay of Pigs fiasco.
	30	What started the Cuban Missile Crisis?	USA spy planes spotted nuclear missile sites in Cuba
	31	What made the Cuban Missile Crisis worse?	Soviet ships were spotted carrying nuclear missiles to Cuba.
	32	How did the crisis end?	USA placed a 'quarantine' around Cuba, whilst talking to USSR in private.

Year 9 History:

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	29	Why did Cuba feel threatened by USA?	
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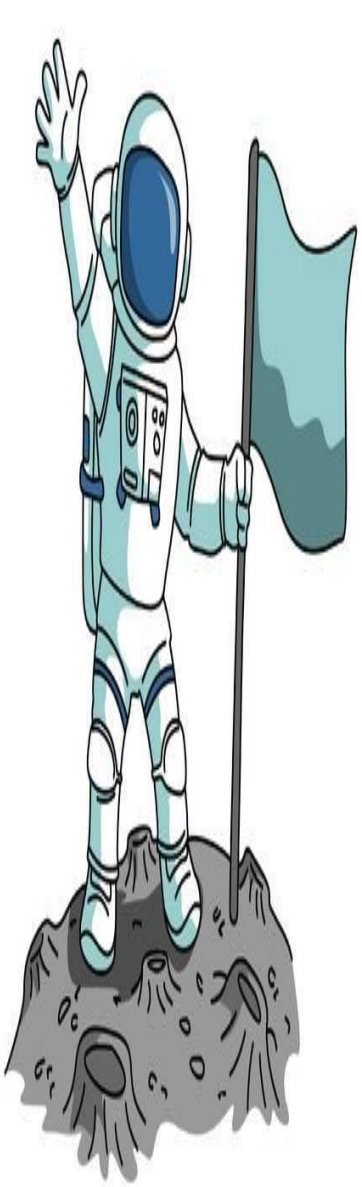
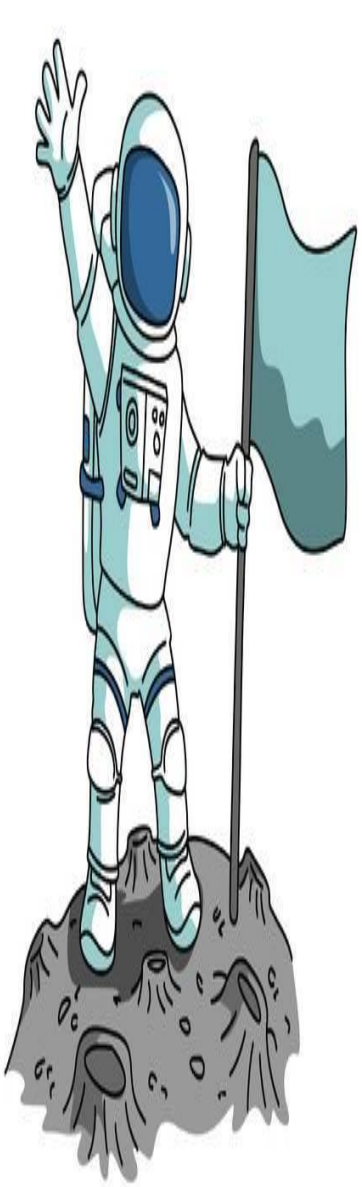
	31	What made the Cuban Missile Crisis worse?	
	32	How did the crisis end?	

Year 9 History:



Topic		Question	Answer
Moon Landings	33	Who put the first man in space?	USSR
	34	What was the purpose of the Space Race?	Propaganda. Whoever got to the moon first would have bragging rights.
	35	What is the name of the USA space programme	Apollo
	36	Who were the first men on the moon?	Neil Armstrong and Buzz Aldrin
	37	What is a conspiracy theory?	The belief that an event or situation is the result of a secret plan made by powerful people.
Vietnam War	38	Why did USA become involved in the Vietnam War?	To prevent the spread of Communism. (Domino Theory)
	39	Which incident led to USA sending troops to Vietnam	An American warship patrolling the North Vietnamese coast was allegedly fired on by Communist troops. (The Gulf of Tonkin Incident).
	40	Who did the USA fight in Vietnam?	The Viet Cong (Communist guerrillas)
	41	Who type of tactics did Viet Cong use?	Guerrilla tactics - ambush, traps, tunnels, snipers, hit and run.
	42	Why was the Vietnam war unpopular back in the USA	Many saw negative reports on TV, which led to anti war movements and protests.

Year 9 History:



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Year 9 History:

Topic		Question	Answer
Cold War sports	43	How was sport used by USA and USSR	Propaganda. Victory in sports was thought to show which country was best, without going to war.
	44	How was USSR able to dominate the Olympic games?	USSR invested heavily to ensure success. Stadiums and swimming pools doubled between 1960-80.
	45	Which other Communist country achieved sporting success in the 1970s and 80s?	East Germany
	46	Which sports are famous for Cold war rivalries?	Chess, Ice Hockey, Table Tennis.
	47	Which famous 1980s movie demonstrates Cold war rivalries in sport?	Rocky IV
End of the Cold War	48	Who was appointed USSR's youngest ever leader in 1985?	Mikhail Gorbachev
	49	What problems did USSR face in the 1980s?	Low standard of living, no freedom of speech, high cost of war and defence, environmental and health problems.
	50	What was Glasnost?	Free speech, more openness and free elections in Russia.
	51	Why is Gorbachev seen as a hero in the USA?	He is seen as ending the Cold War
	52	Why was Gorbachev seen as a failure in Russia?	Rising prices, falling wages, unemployment, crime and black markets appeared. The USSR also fell apart

Year 9 History:

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Life Chances

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Year 9 Life Chances: CEIAG (careers)

Technology is one of the biggest **influences** on the changing opportunities in the world of work.

- **Artificial intelligence (AI)** is the development of machines that can mimic human behaviours such as learning, reasoning and self-correction.
- **Robots** can help humans do physical tasks. Not all robots are physical robots. Robotic process automation (RPA) is software that can be configured to do specific tasks that humans do on computers.
- **Automation** are tasks done by machines instead of humans to increase efficiency and reduce mistakes.

800,000 jobs have been lost but nearly **3.5 million new ones have been created** due to technology.

Technology has boosted employment in knowledge-intensive sectors such as **medicine**, **accounting** and **professional services**.

Career or Job?

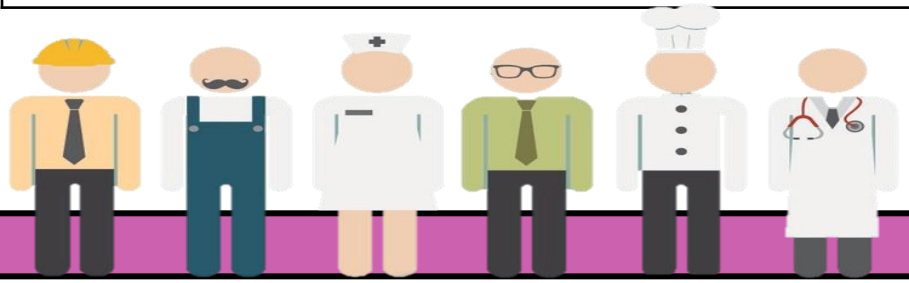
What is a job?

Your job is the role you have at your place of work. **Firefighter, airline pilot, teacher, politician** – these are all jobs.
In a nutshell, a job is about the here and now.

A job can be something you do just to earn money. But it can also be part of something much bigger. This is called a "career".

What is a career?

A career is about more than just earning a wage. It is to do with your long-term **aims** and **ambitions**, and what you want to achieve in your life. In a career, each job you have helps you achieve this goal.
This is called your career path.



Your Journey Through Education…

Institution	Age	Year Group	Qualification	Level	Status
Primary School	4-11 years	Reception – Year 6	SATs (In year 6)	N/A	Compulsory
Secondary School	11-16 years	Year 7 – Year 11	GCSEs (taken in year 11)	Level 2	Compulsory
Further Education (College/Sixth Form)	16+	Year 12 – Year 13	A Levels / T Levels / BTECs / Apprenticeships	Level 3	Compulsory
Higher Education (University/College)	18+	Undergraduate	Degree / Foundation degree / Degree apprenticeships	Level 4 - 6	Optional

Year 9 Life Chances: CEIAG (careers)

Technology is one of the biggest **influences** on the changing opportunities in the world of work.

- **Artificial intelligence (AI)** is…
- **Robots** can…
- **Automation** are..

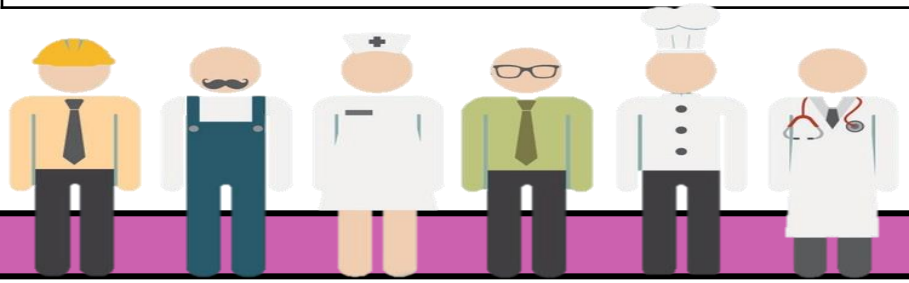
800,000 jobs have been lost but nearly _____ due to technology.

Technology has boosted employment in knowledge-intensive sectors such as _____ , _____ and _____.

Career or Job?

What is a job?

What is a career?



Your Journey Through Education…

Institution	Age	Year Group	Qualification	Level	Status
	4-11 years	Reception – Year 6		N/A	
	11-16 years	Year 7 – Year 11		Level 2	
	16+	Year 12 – Year 13		Level 3	
	18+	Undergraduate		Level 4 - 6	

Year 9 Life Chances: Wellbeing

Healthy Living

What is a diet?

A diet is the type and range of food that you regularly eat.
A diet could be unhealthy or well-balanced.

It is all about the types of food someone chooses to eat and the roles different foods have on the body.

It is NOT a weight loss programme or type of food restriction.

How are children affected by food marketing?

- Product placement by the tills, often at child's level to get them interested at a young age.
- Offers such as buy one get one free are very tempting and can mean people eat more than they intended.
- Shops often price products cheaply, making them more convenient so that it's cheaper and easier to make fast food rather then fresh. E.g. Ready meals, fast food restaurants.
- Sending emails and text messages with offers e.g. Pizza hut.

Bowel

This needs fibre (roughage) to help it remove waste such as fats and toxins from your body.

Heart

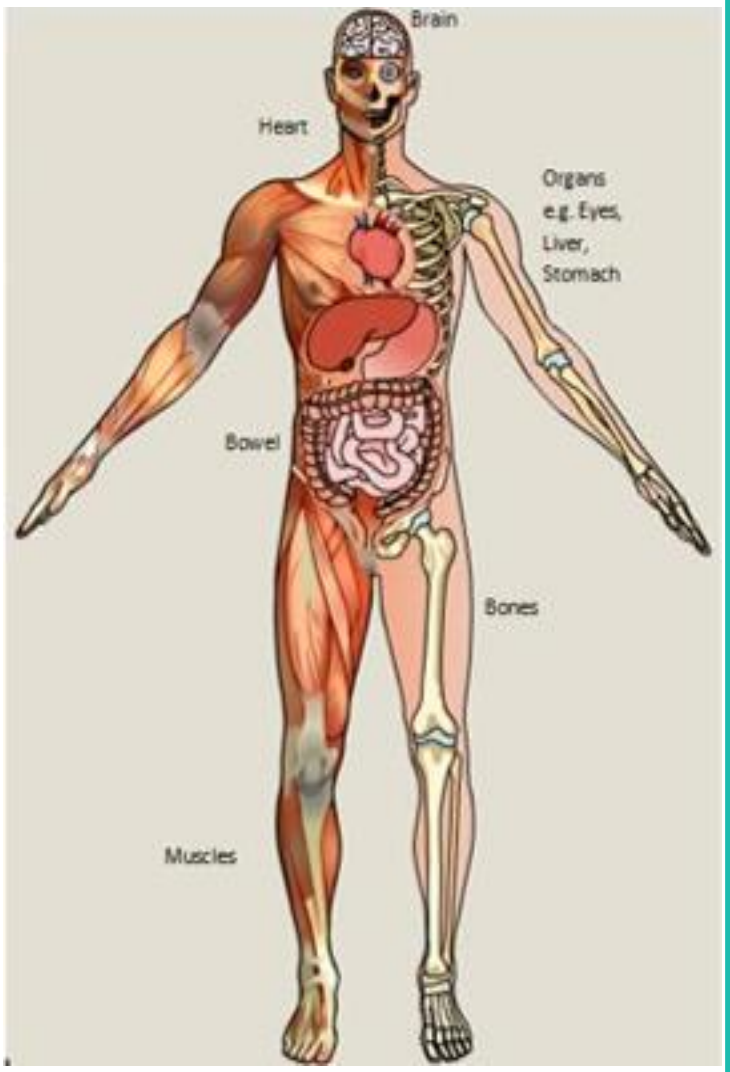
This needs certain types of fat to keep it healthy. Fat is also an essential source of energy.

Brain

This needs plenty of water to keep the body functioning properly

Muscles

These get most of their energy from carbohydrates. They also need protein in order for them to grow and repair themselves.



What does a healthy, balanced diet consist of?

A balance of the different nutrition groups

Proteins, Carbohydrates, Fats, Fibres, Vitamins, Minerals and **Water**.

Year 9 Life Chances: Wellbeing

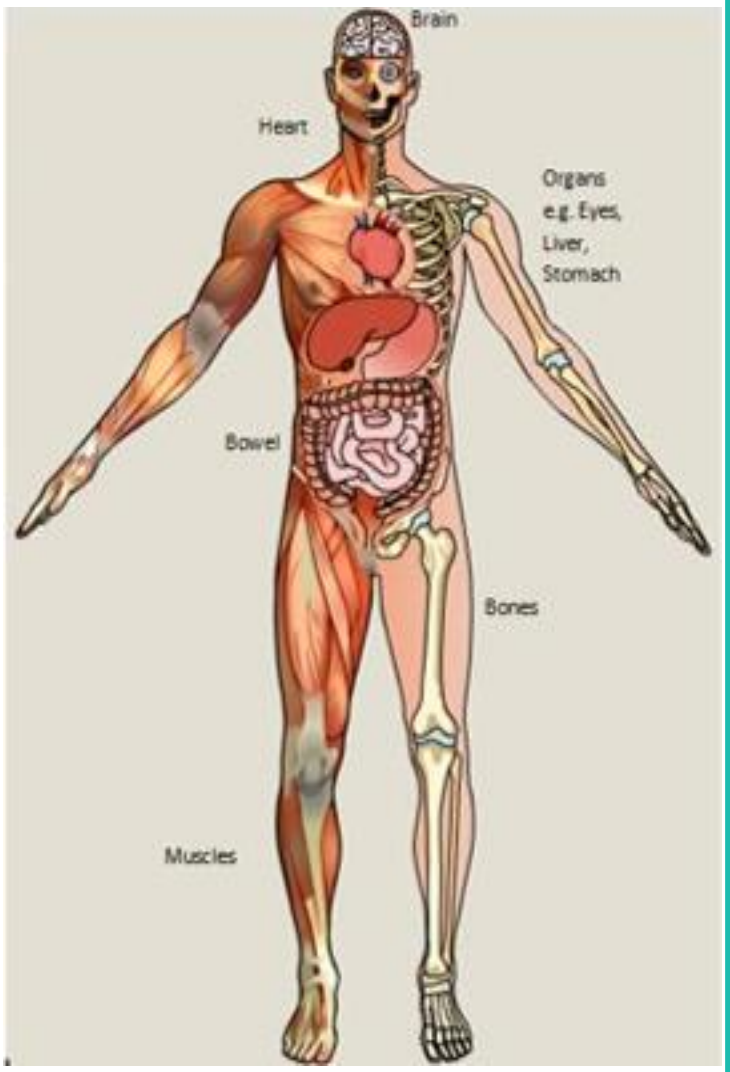
Healthy Living

What is a diet?

How are children affected by food marketing?

- -
- -
- -
- -

What does the **bowel** ned to remain healthy?
What does the **heart** need to remain healthy?
What does the **brain** need to remain healthy?
What do **muscles** need to remain healthy?



What does a healthy, balanced diet consist of?

Year 9 Life Chances: Wellbeing

Understanding the laws surrounding drugs.

Possession means that an individual is caught with a controlled drug for personal use. The person does not have to be using it, just to have it in their possession.

Possession with intent to supply means that a person is planning to give controlled drugs to someone else. This includes selling, sharing or giving for free.

Supply means that a person distributes or gives someone else controlled drugs. This can be selling, giving for a reward of some form, sharing or giving for free.

Drug	Effect 1	Effect 2
Depressants (E.G. Alcohol or solvents)	Initial feeling of pleasure or confidence before risk of losing consciousness at higher doses.	Lowers cognitive abilities, slows reactions and risks blackouts.
Stimulants (E.g. MDMA or cocaine)	Increased energy, pleasure, dilated pupils and increased confidence.	People can experience a clenched jaw and/or racing heart which increases the risk of a heart attack.
Hallucinogens (E.g. Magic mushrooms or LSD)	Altered perception or hallucinations.	Anxiety and panic, impaired decision making.
Dissociatives (E.g. Ketamine or nitrous oxide)	Disconnected from body, floaty or feeling numb.	Unable to move or protect self. Unpleasant feeling of being detached from own body.
Opioids (E.g. Heroin)	Pleasure, a sense of wellbeing and pain-relief.	Sleepiness and loss of consciousness. Risk of injury whilst feeling less pain.
Steroids (E.g. Anabolic steroids)	Over repeated doses, increased muscle mass and quicker recovery from exercise.	Linked to paranoia and aggressive behaviours.
Cannabinoids (E.g. Cannabis)	Feeling ‘chilled out’ or giggly.	Linked to paranoia and mood swings, also increased loss of memory.

Year 9 Life Chances: Wellbeing

Understanding the laws surrounding drugs.

Possession means…

Possession with intent to supply means…

Supply means…

Drug	Effect 1	Effect 2
Depressants (E.G. Alcohol or solvents)		
Stimulants (E.g. MDMA or cocaine)		
Hallucinogens (E.g. Magic mushrooms or LSD)		
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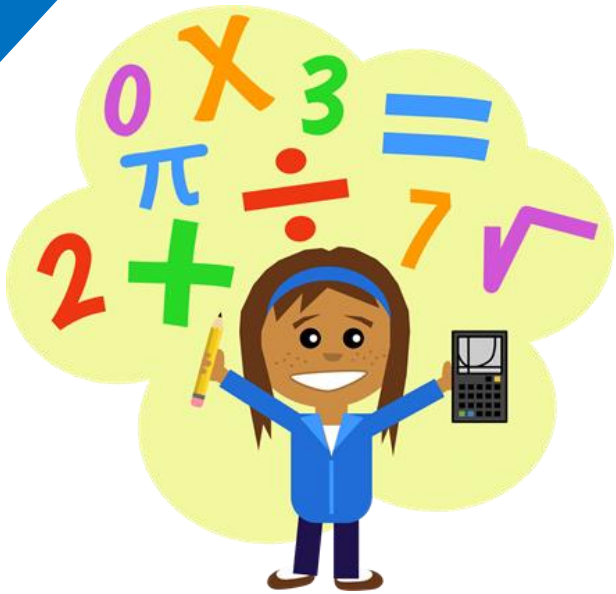
Maths



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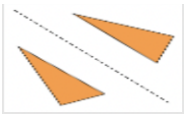
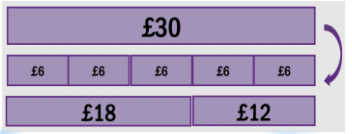
Year 9 Maths:

Key Vocabulary

1	**Line of Symmetry**	• A line where one half of the image is the mirror of the other.	
2	**Rotational Symmetry**	• The number of time the shape fits on top of itself in a 360° rotation	e.g. a square has rotational symmetry order 4
3	**Reflection**	• An image or shape as it would be seen in a mirror	
4	**Ratio**	• A relationship between two or more numbers.	The ratio of yellow counters to red counters in 2:3 
5	**Parts**	• The individual numbers that make up a ratio	The ratio 5:9 is made up of 5 parts and 9 parts. The ratio 5:9 has 14 parts in total.
6	**Unit Ratio**	• The general form of a unit ratio is 1:n or n:1.	The ratio 5:20 be written as the unit ratio 1:4.
7	**Proportion**	• A relationship between two numbers/quantities	If in a recipe for 4 people, 100g of flour is needed, then 200g would be needed for 8 people.
8	**Ratio when given one quantity**	• A method of finding the missing quantity when given a ratio and 1 quantity	Some sweets are shared between Bill and Ben in the ratio 3:2. Bill gets 30 sweets, so Ben gets 20 sweets.

Key Facts

9	**Simplifying Ratio** is to reduce ratio to its simplest form by dividing by common factors	$12:20$ $\div 4 \quad \div 4$ $3:5$ Divide by 4 as it is the HCF of 12 and 20.
10	**Fraction of a Ratio** is the proportion of the ratio of the total amount.	The ratio of blue sweets to green sweets is 4:5. Therefore $\frac{4}{9}$ of the sweets are blue and $\frac{5}{9}$ of the sweets are green.
11	**Percentage of a Ratio** is the proportion of the ratio of the total amount.	The ratio of blue sweets to green sweets is 3:2. Therefore $\frac{3}{5} = \frac{60}{100} = 60\%$ of the sweets are blue and $\frac{2}{5} = \frac{40}{100} = 40\%$ of the sweets are green.
12	**Sharing into a Ratio** is a method of sharing an amount into a given ratio	Share £30 into the ratio 3:2 

Year 9 Maths:

Key Vocabulary

1	What is a **Line of symmetry?**	
2	What is **rotational symmetry?**	
3	What is the name for a shape that is flipped as if it is seen in a mirror?	
4	What is the definition of a **ratio?**	
5	What does the word **parts** mean?	
6	What are the two general forms of an **unit ratio?**	
7	What is the definition of the word **proportion?**	
8	Some sweets are shared between Bill and Ben in the ratio 3:5. Bill gets 24 sweets, how many sweet does Ben have?	

Key Facts

9	**How do you simplify a ratio?**
10	**How do you write a fraction of a ratio?**
11	**How do you write a percentage of a ratio?**
12	**What does sharing into a ratio mean?**

Year 9 Maths:

Key Vocabulary

13	**Algebraic Expression**	• Contains numbers, variables and operations • Does nor have an equals sign	$4x + 5y$ $2a$ $y^2 - 5y$
14	**Variable**	• A symbol, or letter representing an unknown number e.g. x, y, b, a^2	**x is the variable in $3x = 18$**
15	**Coefficient**	• The number in front of the variable	**The coefficient of x in $3x$ is 3.**
16	**Term**	• A number, variable or combination of both	$5x$ ab 9
17	**Sequence**	• A set of numbers that follow a rule	**3, 6, 9, 12, 15, …** **2, 5, 8, 11, 14, …** **4, 8, 16, 32, 64, …**
18	**Term (in a sequence)**	• An individual number in the sequence	**For the sequence 1, 3, 5, 7, …** **3 is the second term**
19	**Arithmetic Sequence**	• Has the same difference between each term	**Also called a linear sequence.** **Example: 3, 5, 7, 9, 11, …**
20	**Geometric Sequence**	• Where you must multiply or divide by the same number to get the next term	**Example: 1, 3, 9, 27, 81, …**
21	**Term to Term Rule**	• How to get from one number in a sequence to the next	**Example: Add 4**
22	**Generate**	• Using the sequence rule to work out terms in the sequence.	**Generate the first 3 terms of $3n + 4$:** $3 \times (1) + 4 = 7$ $3 \times (2) + 4 = 10$ $3 \times (3) + 4 = 13$

Year 9 Maths:

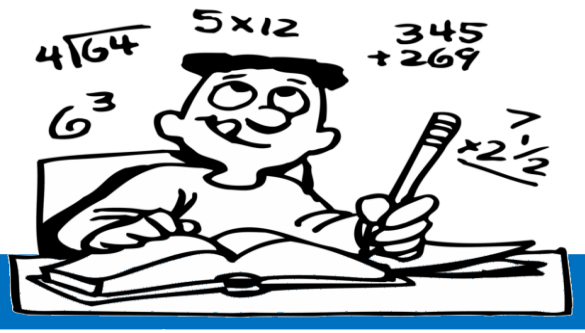
Key Vocabulary

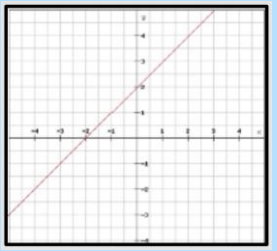
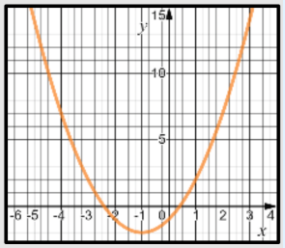
13	What is an **algebraic expression?**
14	What is a **variable?**
15	What is a **coefficient?**
16	Write down some examples of mathematical **terms**.
17	What is a **sequence?**
18	What is a **term in a sequence?**
19	How do you know **if a sequence is arithmetic?**
20	How do you know if a **sequence is geometric?**
21	What does the **term to term rule** do**?**
22	When you are asked to **generate** the first 5 numbers in a sequence, what does that mean?

Year 9 Maths:

Key Facts

23	**Index law of Multiplication**	$x^a \times x^b = x^{a+b}$ Add the powers
24	**Index law of Division**	$x^a \div x^b = x^{a-b}$ Subtract the powers
25	**Index Law for Powers of Powers**	$(x^a)^b = x^{a \times b}$ Subtract the powers
26	**Nth term** A rule that allows you to find any term in the sequence.	Remember the "n" in nth term means position in the sequence. The first term in the sequence means n = 1, second term means n = 2.

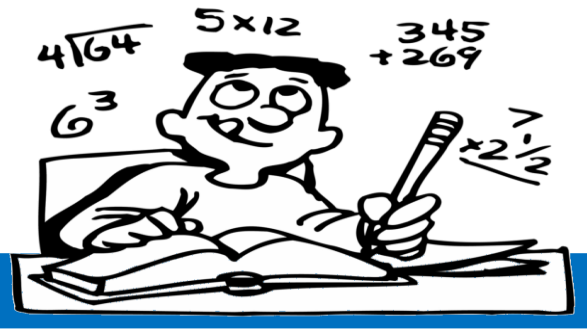


27	**Fibonacci Sequence**	Starting with 0 and 1, add the previous two terms to get the next one. 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, …
28	**Linear Graphs**	A linear graph is a straight line. 
29	**Quadratic Graphs** A quadratic equation is x^2	A U shape (or an upside down U). e.g. $y = x^2 + 2x - 1$ 

Year 9 Maths:

Key Facts

23	Write down the **Index Law of Multiplication.**
24	Write down the **Index Law of Division.**
25	Write down the **Index Law for Powers of Powers.**
26	What is **the nth term of a** sequence**?**



27	What is the **Fibonacci Sequence?**
28	What shape is a **Linear graph?**
29	What shape is a **Quadratic graph?**

Modern Foreign Languages

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Year 9 French: Recap

To have… (Verb)	
Avoir	To have
J'ai	I have…
Tu as	You have…
Il a	He has…
Elle a	She has…
On a	One has (We have)
Nous avons	We have…
Vous avez	You have (formal/plural)
Ils ont	They have… (Masculine/mixed)
Elles ont	They have… (feminine)

To live… (Verb)	
Habiter	To live
J'habite	I live…
Tu habites	You live…
Il habite	He lives…
Elle habite	She lives…
On habite	One lives (We live)
Nous habitons	We live…

To be… (Verb)	
Être	To be
Je suis	I am…
Tu es	You are…
Il est	He is…
Elle est	She is…
On est	One is (We are)
Nous sommes	We are…
Vous êtes	You are… (formal/plural)
Ils sont	They are… (Masculine/mixed)
Elles sont	They are… (feminine)

Year 9 French: Recap

To have... (Verb) Complete below:	
	To have
	I have...
	You have...
	He has...
	She has...
	One has (We have)
	We have...
	You have (formal/plural)
	They have... (Masculine/mixed)
	They have... (feminine)

To live... (Verb) Complete below:	
	To live
	I live...
	You live...
	He lives...
	She lives...
	One lives (We live)
	We live...

To be... (Verb) Complete below:	
	To be
	I am...
	You are...
	He is...
	She is...
	One is (We are)
	We are...
	You are... (formal/plural)
	They are... (Masculine/mixed)
	They are... (feminine)

Year 9 French:

Grammar Explanation

Immediate Future Tense

To use the immediate future tense, take the appropriate form of the verb **aller** (to go) and add the infinitive verb.

For example:

Je vais + manger = **je vais manger**
= I am going to eat.
Nous allons + **voyager** = **nous allons voyager**
= we are going to travel.

Below are some high frequency infinitives for you to practise with:

Aller = to go

Jouer = to play

Regarder = to watch

Visiter = to visit

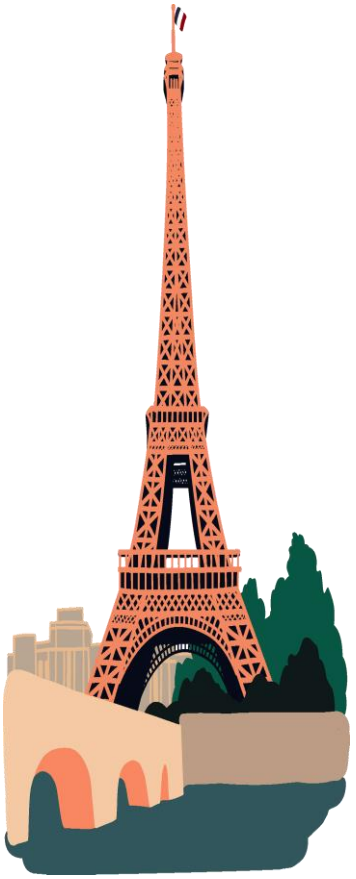
Faire = to do

Manger = to eat

Avoir = to have

Être = to be

Prendre = to take



Grammar Explanation

Perfect (past) Tense

When forming the perfect tense, you take the correct form of **avoir** and add the past participle. For most **-er** verbs, you form the past participle by taking the ER off the infinitive verb and adding an **é**. For example, **manger = mangé**. You then use the appropriate form of **avoir**, such as **j'ai mangé** = I have eaten, **il a mangé** = he has eaten

Voyager (to travel) = **voyagé** (travelled)

Manger (to eat) = **mangé** (eaten)

Loger (to stay - somewhere you have paid for) = **logé**

Forming the past participle is different for -re verbs and -ir verbs but we will learn these at a later stage.

Some verbs have irregular stems, such as:

Faire (to do) = fait (did). For example, j'ai fait = I did

However, some verbs use **être** instead of **avoir** when forming the perfect tense. One of these verbs is **aller**. For **aller**, you form the stem by taking the **er** off and adding **é**. You then use **être** to form the past tense, for example, **je suis allé** (masculine) or **je suis allée** (feminine).

The verb rester (to stay) also takes être.

Year 9 French:

Grammar Explanation

How do we use the Immediate Future Tense? For example:

Je vais + manger = _____

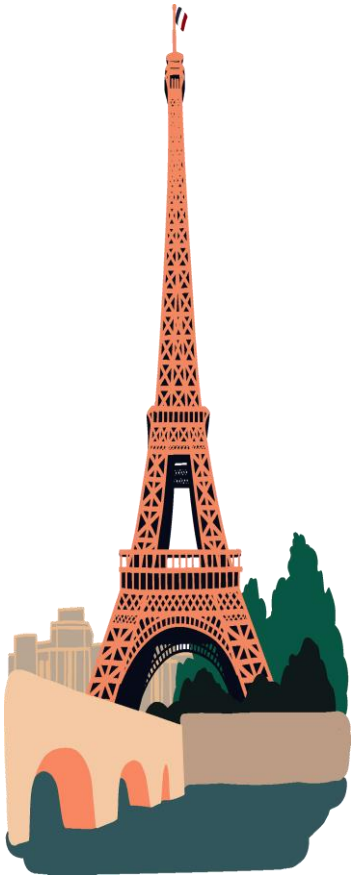
= I am going to eat.

Nous allons + **voyager** = _____

= we are going to travel.

Below are some high frequency infinitives for you to practise with:

- _____ = to go
- _____ = to play
- _____ = to watch
- _____ = to visit
- _____ = to do
- _____ = to eat
- _____ = to have
- _____ = to be
- _____ = to take



Grammar Explanation

How do we form the **Perfect (past) Tense?**

Voyager (to travel) = _____ (travelled)

Manger (to eat) = _____ (eaten)

Loger (to stay - somewhere you have paid for) = _____

Forming the past participle is different for -re verbs and -ir verbs but we will learn these at a later stage.

Some verbs have irregular stems, such as:

Faire (to do) = _____ (did). For example, _____ = I did

However, some verbs use **être** instead of **avoir** when forming the perfect tense. One of these verbs is..

Year 9 Spanish:

Tener (To have)

Tengo	I have
Tienes	You have
Tiene	He/She/It has
Tenemos	We have
Tenéis	You (plural) have
Tienen	They have

Ser (To be)

Soy	I am
Eres	You are
Es	He/She/It is
Somos	We are
Sois	You (plural) are
Son	They are

Grammar Explanation

There is a three-step method that will make conjugating regular Spanish verbs very easy for you.
In order to conjugate verbs that end with **-ar** in the preterite tense you:

- Find the infinitive (full verb)
- Cut off the **-ar**
- Add the new ending (**é, aste, ó, amos, asteis, aron**)

Ir (To go) Present tense

Fui	I went
Fuiste	You went
Fue	He/She/It wet
Fuimos	We went
Fuisteis	You (plural) went
Fueron	They went

English subject pronoun	Spanish subject pronoun	ar ending	Viajar (to travel)
I	yo	é	viaj**é**
you	tú	aste	viaj**aste**
he/she	él/ella	ó	viaj**ó**
we	nosotros/nosotras	amos	viaj**amos**
you (plural)	vosotros/vosotras	Asteis	viaj**asteis**
they	ellos/ellas	aron	viaj**aron**

Year 9 Spanish:

Tener (To have)

	I have
	You have
	He/She/It has
	We have
	You (plural) have
	They have

Ser (To be)

	I am
	You are
	He/She/It is
	We are
	You (plural) are
	They are

Grammar Explanation

There is a three-step method that will make conjugating regular Spanish verbs very easy for you.
In order to conjugate verbs that end with **-ar** in the preterite tense you:

- Find the infinitive (full verb)
- Cut off the **-ar**
- Add the new ending (**é, aste, ó, amos, asteis, aron**)

Ir (To go) Present tense

	I went
	You went
	He/She/It wet
	We went
	You (plural) went
	They went

English subject pronoun	Spanish subject pronoun Complete below:	ar ending	Viajar (to travel)
I	-	-	-
you	-	-	-
he/she	-	-	-
we	-	-	-
you (plural)	-	-	-
they	-	-	-

Year 9 Spanish:

How to form the immediate future tense:

To say what you are going to do, you can use the near immediate future tense.

This is formed by using the correct part of the verb **ir** (to go), plus the infinitive of another verb.

Voy a ir al cine
I am going to go to the cinema

Va a jugar al fútbol
He is going to play football

Ir (to go)	Preposition	Infinitive
Voy *(I am going)* **Vas** *(you are going)* **Va** *(he/she is going)* **Vamos a** *(we are going)* **Van a** *(we are going)*	a	**Jugar** - *to play* **Ver** - *to see* **Hacer** - *to do* **Montar** - *to ride* **Ser** - *to be* **Tener** - *to have*

Grammar Explanation

There is a three-step method that will make conjugating regular Spanish verbs very easy for you.

For **ER** and **IR** verbs you:

- Find the infinitive (full verb)
- Cut off the -**er** or -**ir**
- Add the new ending (**í, iste, ió, imos, isteis, ieron**)

English subject pronoun	Spanish subject pronoun	ar ending	Comer (to eat)
I	yo	í	**comí**
you	tú	iste	**comiste**
he/she	él/ella	ió	**comió**
we	nosotros/nosotras	imos	**comimos**
you (plural)	vosotros/vosotras	isteis	**comisteis**
they	ellos/ellas	ieron	**comieron**

Year 9 Spanish:

How do we form the immediate future tense?

_____
I am going to go to the cinema

_____
He is going to play football

Ir (to go)	Preposition	Infinitive
_____ *(I am going)* _____ *(you are going)* _____ *(he/she is going)* _____ *(we are going)* _____ *(we are going)*	a	_____ - *to play* _____ - *to see* _____ - *to do* _____ - *to ride* _____ - *to be* _____ - *to have*

Grammar Explanation

There is a three-step method that will make conjugating regular Spanish verbs very easy for you.

For **ER** and **IR** verbs you:

- -
- -
- -

English subject pronoun	Spanish subject pronoun	ar ending	Comer (to eat)
I	-	-	-
you	-	-	-
he/she	-	-	-
we	-	-	-
you (plural)	-	-	-
they	-	-	-

Music

Helping every person achieve things they never thought they could.

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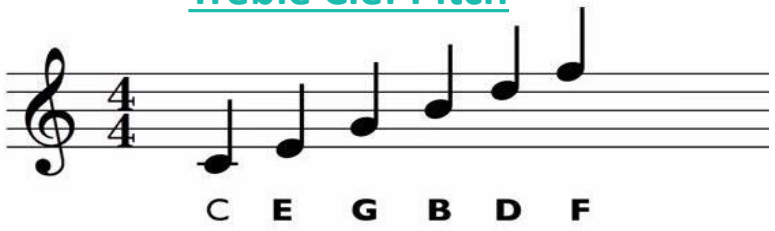
be kind | work hard | take responsibility

Year 9 Music:

Treble Clef Pitch



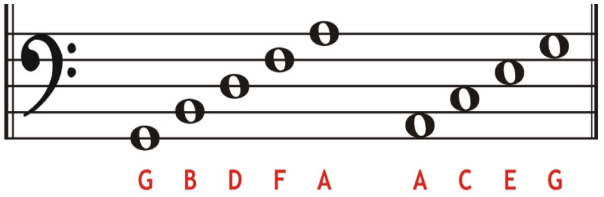
Treble Clef

Bass Clef

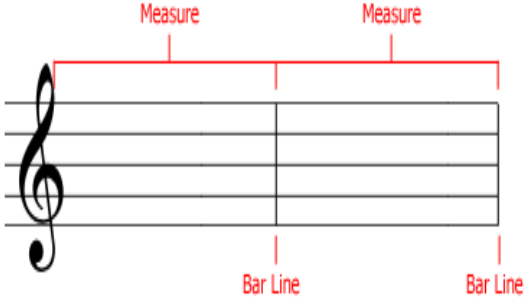
Duration of Notes

Note	Name	Beats
𝅝	Semi Breve	4 beats
𝅗𝅥	Minim	2 beats
♩	Crotchet	1 beat
♪	Quaver	½ beat
𝅘𝅥𝅯	Semi Quaver	¼ beat

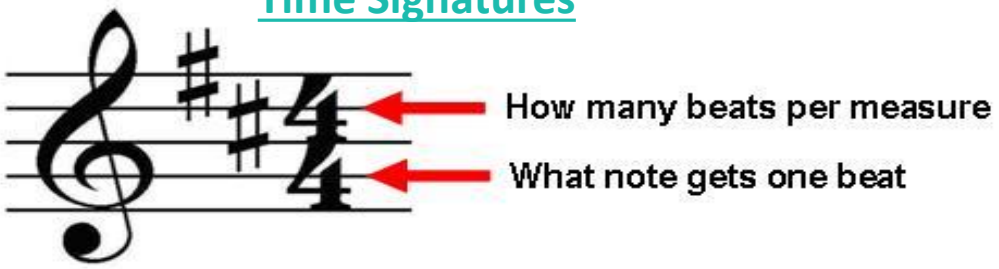
Bass Clef Pitch

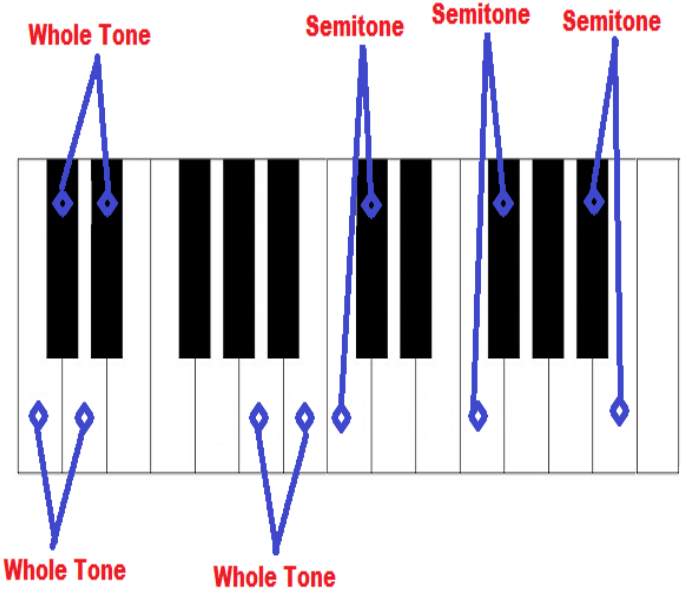


Traditional Notation



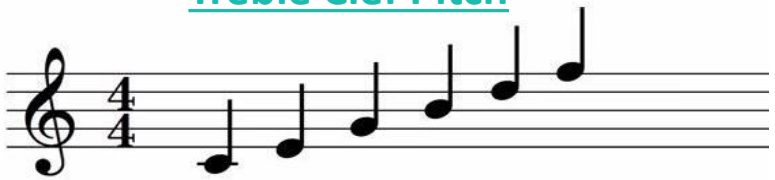
Time Signatures

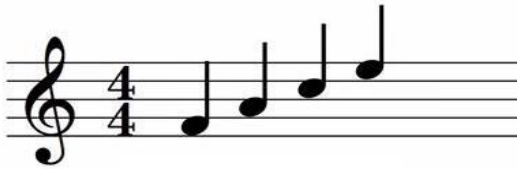




Year 9 Music:

Treble Clef Pitch





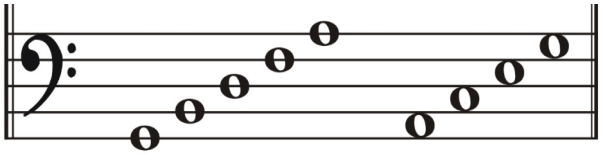
Treble Clef

Bass Clef

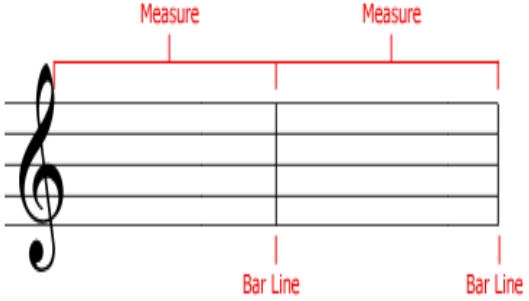
Duration of Notes

Note	Name	Beats

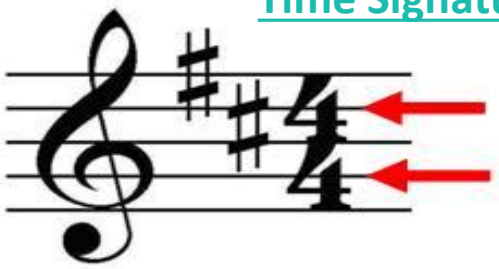
Bass Clef Pitch

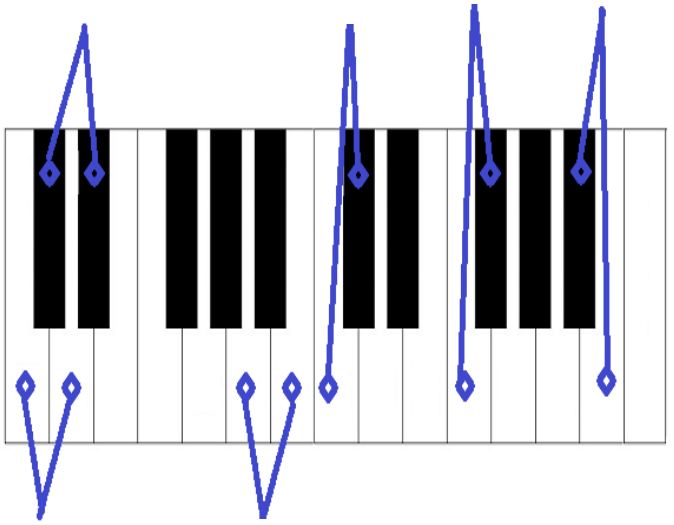


Traditional Notation



Time Signatures





PE

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be kind | work hard | take responsibility

Year 9 PE: Basketball

Motor Competence

Passing	Chest pass, bounce pass, shoulder pass
Receiving	Catching with two hands, catching whilst moving.
Dribbling	Fingertips, head up, bounce the ball in front of body
Possession	Keeping the ball away from opponents, using body to protect the ball. Dribble if there's space, pass if a teammate is in space
Defending	Rebounding, Zonal defence (marking the space rather than the player)
Shooting	Composure, accuracy and placement. Lay up - use outside arm, use fingers to create backspin, aim for the postage stamp

Rules, Strategies and Tactics

Key	The area shaped like a keyhole at both ends of the court which included the free throw line.
3-point Line	If you shoot from outside the 3 point line, it is worth 3 points instead of 2
Contact	No contact is to be made with the player touching the ball. If it does a side line is taking to the team the foul was against.
Double Dribble	Dribbling with two hands or dribbling, catching the ball, then dribbling again
3 Second Violation	The attackers can't stay in the key for more than 3 seconds.
8 Second Violation	Players have 8 seconds to get the ball over the halfway line. If they don't they lose possession of the ball.
Back Court Violation	Once over the halfway line the attackers can not pass the ball back over the halfway line otherwise they lose possession of the ball.

Healthy Participation

Muscles	Deltoids, biceps, triceps, hamstrings, quadriceps
Fitness components	Hand-eye coordination, speed, agility, reaction time

Year 9 PE: Basketball

Motor Competence

Passing	
Receiving	
Dribbling	
Possession	
Defending	
Shooting	

Rules, Strategies and Tactics

Key

3-point Line

Contact

Double Dribble

3 Second Violation

8 Second Violation

Back Court Violation

Healthy Participation

Which **muscles** are used in basketball?	
What are the **fitness components** of basketball?	

Year 9 PE: Handball

Motor Competence

Passing	Use fingertips for control, weight on front foot with dominant hand and foot at the back. See it out.
Receiving	Get in line, make space away from defender, arms out and see it in.
Dribbling	Use your fingertips, knees slightly bent, keep your head up. Try to use alternate hands as an advanced technique
Possession	Dribble if you have space, pass if a teammate is in a better position. PIVOT to look for options
Defending	Jump block and shutting down the space, communicating with teammates
Shooting	Raising the arm and moving the shoulder back, bending the elbow and rotating the body for power. Jump shot - same motion but jumping to add power

Rules, Strategies and Tactics

Contact	Contact can only be made when front-on. Any contact from the side or behind is a foul
Free Throw	A free throw is given for infringement on the rules, defenders must stand 3 metres away from the thrower
Penalty Throw	Given if a foul occurs when shooting or if a defender enters their own area
Corner Throw	Given if the ball goes behind the goal off the defender (not including the goalkeeper
Passing	You must pass with one hand
Double Dribbling	You cannot dribble with both hands, you cannot move more than 3 steps with the ball in your hand. You must pass or shoot if you stop dribbling. You cannot hold the ball for more than 3 seconds.

Healthy Participation

Muscles	Deltoids, biceps, triceps, hamstrings, quadriceps
Fitness components	Hand-eye coordination, speed, agility, reaction time

Year 9 PE: Handball

Motor Competence

Passing	
Receiving	
Dribbling	
Possession	
Defending	
Shooting	

Rules, Strategies and Tactics

- Contact
- Free Throw
- Penalty Throw
- Corner Throw
- Passing
- Double Dribbling

Healthy Participation

Muscles	
Fitness components	

Year 9 PE: Leadership

Motor Competence

Understanding what a sports leader is	Someone in charge of a team, they are creative, reliable, punctual, confident and have good communication skills
Roles of a Sports Leader	Role model, motivator, planner, Instructor, Mentor, Advisor, Councillor, Demonstrator, Organiser.
Responsibilities of a Sports Leader	Knowledge of activity, enthusiasm for activity, knowledge of safety, knowledge of child protection issues,
Designing a lesson plan	Consider a warm up, main activity and game. Consider what space will be used, what equipment will be used and the safety precautions involved.
Orienteering	Using a map and a compass to navigate between checkpoints. Leaders should find the best route to take

Rules, Strategies and Tactics

Appropriate use of equipment	We should consider what equipment we need and only use what is necessary. Equipment should be used without the risk of damaging when creating activities with them.
Planning a session	Consider the equipment available, considers the space needed and how many participants there are. Link the activity to the purpose of it. Consider timings
Delivery of a session	Be confident, organised, punctual, keep it structured and motivate participants.
Orienteering	Use map appropriately, don't move or damage any of the equipment. Try to complete the course as quickly as possible

Healthy Participation

Warm Up	Involves a pulse raiser, dynamic stretches and a skill-based activity. Prepares participants physically and mentally. Helps to prevent injury.
Muscles used when orienteering	Hamstrings, quadriceps, gastrocnemius
Cool Down	Light jog into a walk followed by static stretches. This prevents lactic acid building up in the muscles

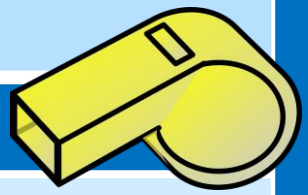
Year 9 PE: Leadership

Motor Competence

Understanding what a sports leader is	
Roles of a Sports Leader	
Responsibilities of a Sports Leader	
Designing a lesson plan	
Orienteering	

Rules, Strategies and Tactics

- Appropriate use of equipment
- Planning a session
- Delivery of a session
- Orienteering



Healthy Participation

Warm Up	
Muscles used when orienteering	
Cool Down	

Religious Education

Helping every person achieve things they never thought they could.

Little Lever School
be kind | work hard | take responsibility

Year 9 RE: Christianity

Christianity	The religion followed by Christians
Bible	The holy book of Christianity
Old Testament	The first part of the Bible
New Testament	The second part of the Bible
Creed	A statement of belief
Denominations	Groups or branches within the religion

Where do Christian teachings come from?

1. **The Bible -** The holy book of Christians is called the Bible. This is divided into two main parts – the Old Testament and the New Testament. The Old Testament includes the Creation Story and the Ten Commandments. The New Testament includes the 4 Gospels of Matthew, Mark, Luke and John, which are accounts of Jesus' life.

2. **The Church** - mainly through their creeds.

3. **Theologians and philosophers** – who have studied difficult questions about religion.

4. **Individual Christians.**

5. **Different Christian denominations.** The two main branches of Christianity are Roman **Catholics** and **Protestants**.

Year 9 RE: Christianity

Christianity	
Bible	
Old Testament	
New Testament	
Creed	
Denominations	

Where do Christian teachings come from?

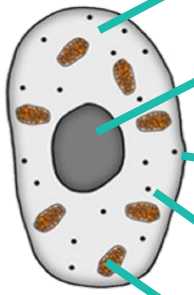
1. -
2. -
3. -
4. -
5. -

Science

Helping every person achieve things they never thought they could.

Little Lever School
be kind | work hard | take responsibility

Year 9 Science: Cell division and transport

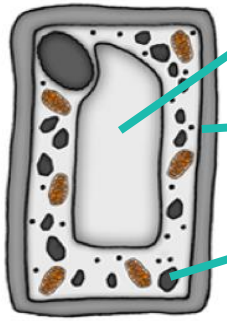


Cytoplasm	*Site of chemical reactions in the cell*	Gel like substance containing enzymes to catalyse the reactions
Nucleus	*Contains **genetic material***	Controls the activities of the cell and codes for proteins
Cell membrane	*Semi permeable*	Controls the movement of substances in and out of the cell
Ribosome	*Site of protein synthesis*	mRNA is translated to an amino acid chain
Mitochondria	*Site of respiration*	Where energy is released for the cell to function

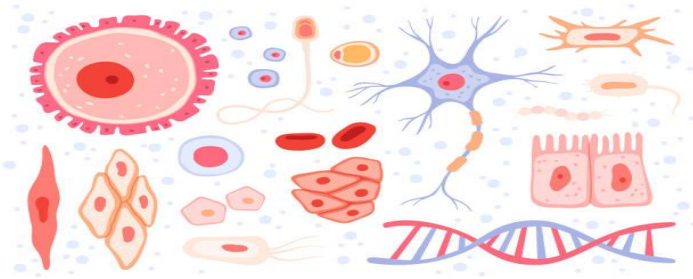
animal cell

plant cell

Eukaryotes complex organisms

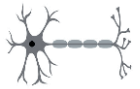


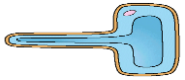
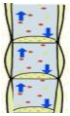
Permanent vacuole	*Contains cell sap*	Keeps cell turgid, contains sugars and salts in solution
Cell wall	*Made of cellulose*	Supports and strengthens the cell
Chloroplast	*Site of photosynthesis*	Contains chlorophyll, absorbs light energy



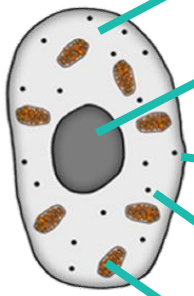
Cell membrane	*Semi permeable site of chemical reactions in the cell*	Controls the movement of substances in and out of the cell
Bacterial DNA	*Not in nucleus floats in the cytoplasm*	Controls the function of the cell
Cell wall	***NOT** made of cellulose*	Sand strengthens the cell
Plasmid	*Small rings of DNA*	Contain additional genes
Cytoplasm	*Site of chemical reactions in the cell*	Gel like substance containing enzymes to catalyse the reactions

Prokaryotes simpler organisms

Nerve		*Carry electrical signals*	long branched connections and insulating sheath
Sperm		*Fertilise an egg*	streamlined with a long tail acrosome containing enzymes large number of mitochondria
Muscle		*Contract to allow movement*	contains a large number of mitochondria long

Root hair		*Absorb water and minerals from soil*	Hair like projections to increase the surface area
Xylem		*Carry water and minerals*	TRANSPIRATION - dead cells cell walls toughened by lignin. Flows in one direction
Phloem		*Carry glucose*	TRANSLOCATION - living cells cells have end plates with holes. Flows in both directions.

Year 9 Science: Cell division and transport



Cytoplasm		
Nucleus		
Cell membrane		
Ribosome		
Mitochondria		

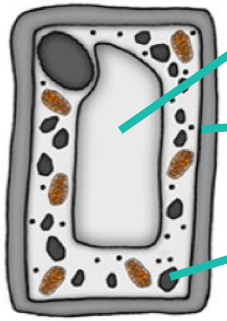
Cell membrane		
Bacterial DNA		
Cell wall		
Plasmid		
Cytoplasm		

animal cell

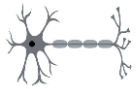
plant cell

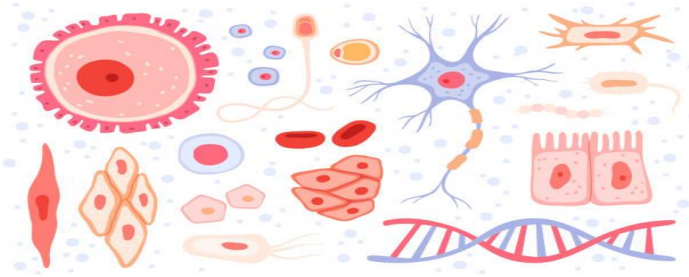
Eukaryotes complex organisms

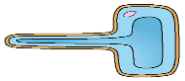
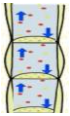
Prokaryotes simpler organisms



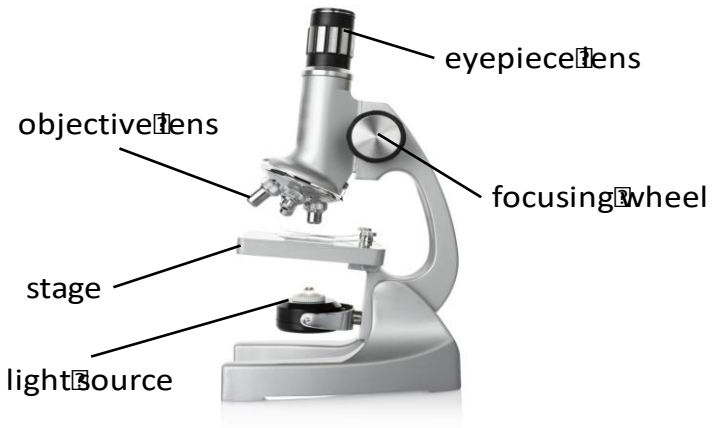
Permanent vacuole		
Cell wall		
Chloroplast		

Nerve			
Sperm			
Muscle			



Root hair			
Xylem			
Phloem			

Year 9 Science: Cell division and transport



Feature	Light (optical) microscope	Electron microscope
Radiation used	Light rays	Electron beams
Max magnification	~ 1500 times	~ 2 000 000 times
Resolution	200nm	0.2nm
Size of microscope	Small and portable	Very large and not portable

Cell differentiation

How a cell changes and becomes **specialised**
Undifferentiated call are called **STEM** cells

animal cell differentiation

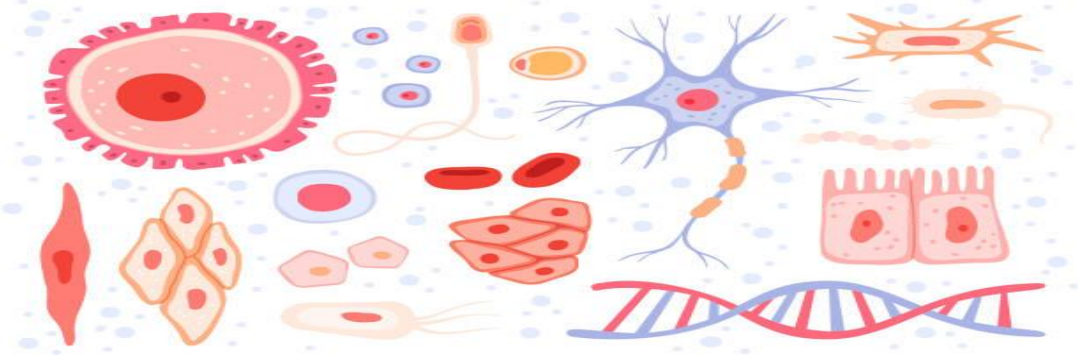
early stages of development only for repair and replacement

plant cell differentiation

all stages of life cycle the stem cells are grouped together in meristems

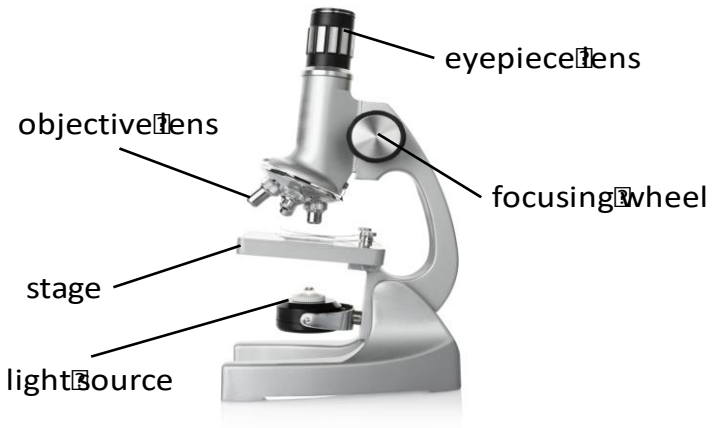
Microscopy

Magnification M= size of image I / actual size A



PREFIXES		
Prefix	Multiple	Standard form
centi (cm)	1 cm = 0.01 m	x 10^{-2}
milli (mm)	1 mm = 0.001 m	x 10^{-3}
micro (µm)	1 µm = 0.000 001 m	x 10^{-6}
nano (nm)	1nm = 0.000 000 001 m	x 10^{-9}

Year 9 Science: Cell division and transport



Feature	Light (optical) microscope	
Radiation used	Light rays	
Max magnification	~ 1500 times	
Resolution	200nm	
Size of microscope	Small and portable	

How a cell changes and becomes **specialised**
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Cell differentiation

animal cell differentiation

plant cell differentiation

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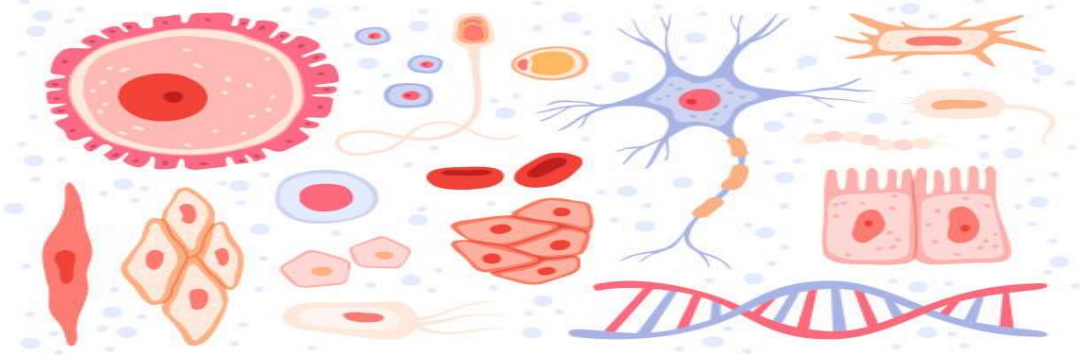


PREFIXES		
Prefix	Multiple	Standard form
	1 cm = 0.01 m	
	1 mm = 0.001 m	
	1 μm = 0.000 001 m	
	1nm = 0.000 000 001 m	

Year 9 Science: Cell division and transport

largest

cell	The smallest structural and functional unit of an organism.
nucleus	A structure that contains genetic material and controls the activities of the cell.
chromosome	A thread like structure of coiled DNA found in the nucleus of eukaryotic cells.
DNA	A polymer made up of two strands forming a double helix.
gene	A section of DNA that codes for a specific protein or characteristic.

smallest

Small intestines	*Villi – increase surface area, Good blood supply – to maintain concentration gradient, Thin membranes – short diffusion distance.*
Lungs	*Alveoli– increase surface area, Good blood supply – to maintain concentration gradient, Thin membranes – short diffusion distance.*
Gills in fish	*Gill filaments and lamella – increase surface area, Good blood supply – to maintain concentration gradient, Thin membranes – short diffusion distance.*
Roots	*Root hair cells - increase surface area.*
Leaves	*Large surface area, thin leaves for short diffusion path, stomata on the lower surface to let O_2 and CO_2 in and out.*

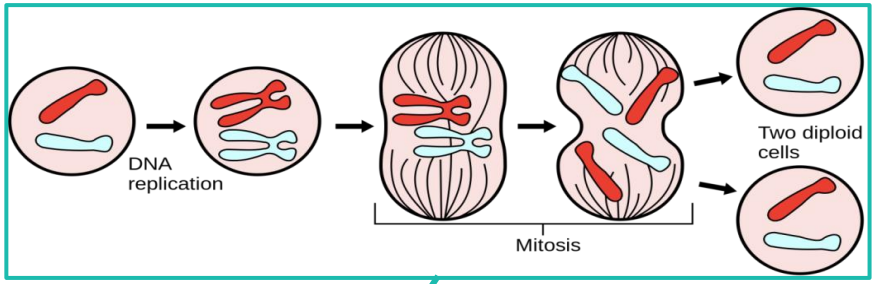
ADAPTATIONS FOR DIFFUSSION

The greater the difference in concentrations the faster the rate of diffusion.

Cells divide in a series of stages. The genetic material is doubled and then divided into two identical cells.

MITOSIS AND THE CELL CYCLE

Stage 1	***Growth & DNA Synthesis***	Increase the number of sub-cellular structures e.g. ribosomes and mitochondria. DNA replicates to form two copies of each chromosome.
Stage 2	***Mitosis***	One set of chromosomes is pulled to each end of the cell and the nucleus divides.
Stage 3	***Cell division***	Then the cytoplasm and cell membranes divide to form two cells that are identical to the parent cell.



Mitosis occurs during growth, repair of tissue, replacement of cells. Asexual reproduction occurs by mitosis in both plants & single cell organisms.

Year 9 Science: Cell division and transport

largest

cell	
nucleus	
chromosome	
DNA	
gene	

smallest

Small intestines	
Lungs	
Gills in fish	
Roots	
Leaves	

ADAPTATIONS FOR DIFFUSSION

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MITOSIS AND THE CELL CYCLE

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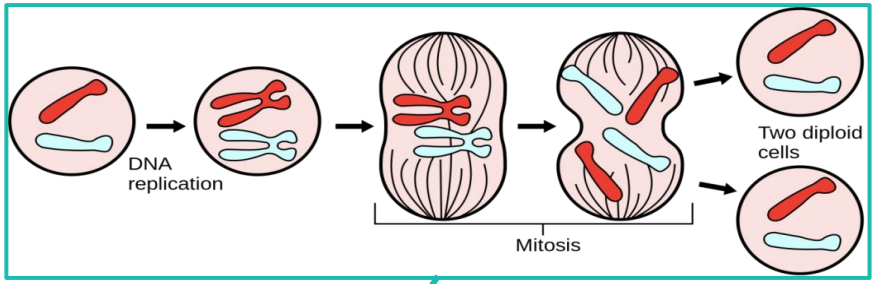
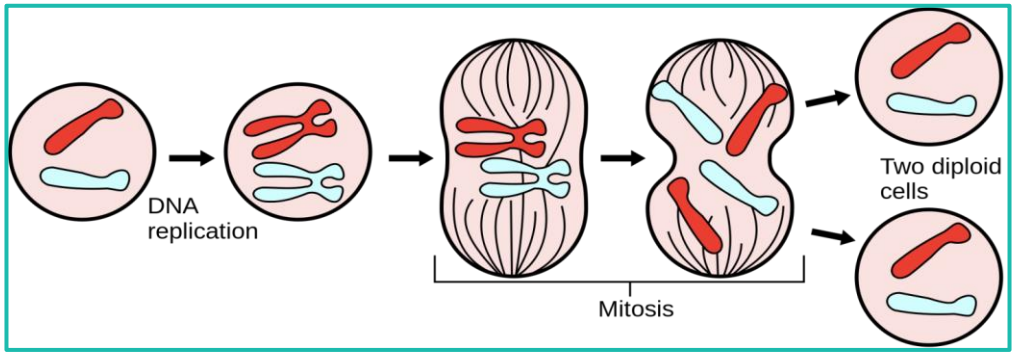
Stage 2	*Mitosis*	
Stage 3	*Cell division*	



Mitosis occurs during growth, repair of tissue, replacement of cells. Asexual reproduction occurs by mitosis in both plants & single cell organisms.

Year 9 Science: Cell division and transport

Diffusion ***No*** energy required	***Movement of particles in a solution or gas from a higher to a lower concentration***	E.g. O_2 and CO_2 in gas exchange, urea in kidneys. Factors that affect the rate are concentration, temperature and surface area.
Osmosis ***No*** energy required	***Movement of water from a dilute solution to a more concentrated solution***	E.g. Plants absorb water from the soil by osmosis through their root hair cells. Plants use water for several vital processes including photosynthesis and transporting minerals.
Active transport ***ENERGY*** required	***Movement of particles from a low concentration to a high concentration***	E.g. movement of mineral ions into roots of plants and the movement of glucose into the small intestines.

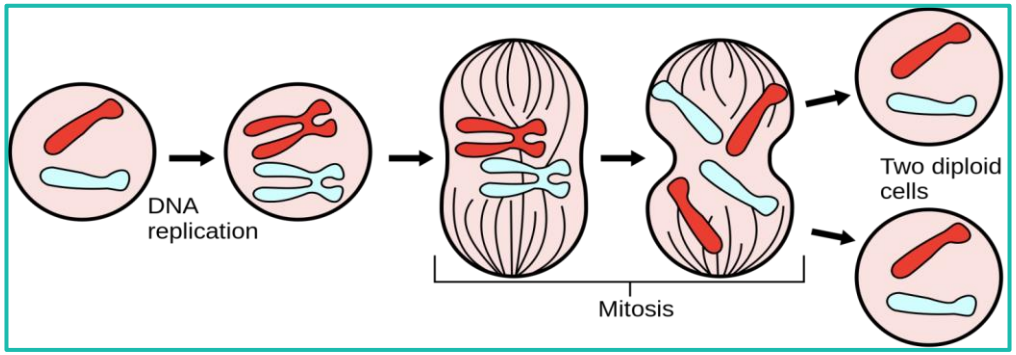


Human Embryonic stem cells	***Can be cloned and made to differentiate into most cell types***	Therapeutic cloning uses same genes so the body does not reject the tissue. Can be a risk of infection
Adult bone marrow stem cells	***Can form some types of human cells e.g. blood cells***	Tissue is matched to avoid rejection, risk of infection. Only a few types of cells can be formed.
Meristems (plants)	***Can differentiate into any plant cell type throughout the life of the pant.***	Used to produce clones quickly and economically, e.g. rare species, crop plants with pest /disease resisitance

Treatment with stem cells may be able to help conditions such as diabetes and paralysis. Some people object to the use of stem cells on ethical or religious grounds

Year 9 Science: Cell division and transport

Diffusion ***No*** energy required		
Osmosis ***No*** energy required		
Active transport ***ENERGY*** required		



Human Embryonic stem cells		
Adult bone marrow stem cells		
Meristems (plants)		

Treatment with stem cells may be able to help conditions such as _____ and _____.
Some people object to the use of stem cells on ethical or religious grounds

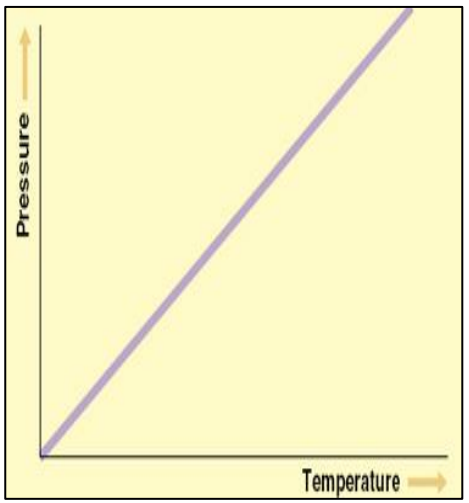
Year 9 Science: Particle Arrangement and Change of State

Particle model

State	Particle arrangement	Properties
Solid	Packed in a regular structure. Strong forces hold in place so cannot move.	Difficult to change shape.
Liquid	Close together, forces keep contact but can move about.	Can change shape but difficult to compress.
Gas	Separated by large distances. Weak forces so constantly randomly moving.	Can expand to fill a space, easy to compress.

Kinetic theory of gases

- Gas particles are in a constant state of random motion.
- No kinetic energy is lost when gas particles collide with each other or the container.
- If kinetic energy increases so does the temperature of gas.
- Temperature of gas is linked to the average kinetic energy of the particles.
- Pressure of a fixed volume of gas increases as temperature increases (temperature increases, speed increases, collisions occur more frequently and with more force so pressure increases).



$P = m \div V$

Density = mass ÷ volume.

Density	*Mass of a substance in a given volume*

	Units
Density	Kilograms per metre cubed (kg/m^3)
Mass	Kilograms (kg)
Volume	Metres cubed (m^3)
Energy needed	Joules (J)
Specific latent heat	Joule per kilogram (J/kg)
Change in thermal energy	Joules (J)
Specific heat capacity	Joule per kilogram degrees Celsius (J/kg°C)
Temperature change	Degrees Celsius (°C)
Pressure	Pascals (Pa)

Year 9 Science: Particle Arrangement and Change of State

Pressure of a fixed volume of gas increases as temperature increases (temperature increases, speed increases, collisions occur more frequently and with more force so pressure increases).

If kinetic energy increases so does the temperature of gas.

Gas particles are in a constant state of random motion.

P = m ÷ V

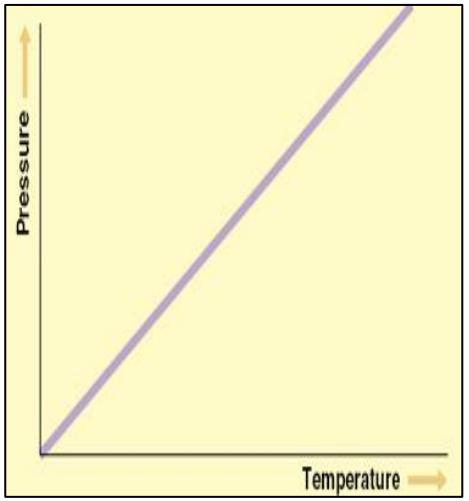
Density =

Density	

Kinetic theory of gases

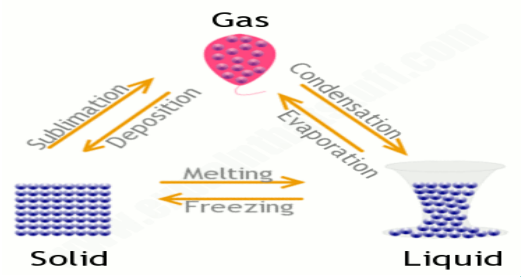
Particle model

State	Particle arrangement	Properties
Solid		
Liquid		
Gas		



	Units
Density	
Mass	
Volume	
Energy needed	
Specific latent heat	
Change in thermal energy	
Specific heat capacity	
Temperature change	
Pressure	

Year 9 Science: Particle Arrangement and Change of State



Pressure

PHYSICS ONLY: when you do work the temperature increases e.g. pump air quickly into a ball, the air gets hot because as the piston in the pump moves the particles bounce off increasing kinetic energy, which causes a temperature rise.	Reducing the volume of a fixed mass of gas increases the pressure. Halving the volume doubles the pressure.

PV = constant.

$P_1V_1 = P_2V_2$

Internal energy and energy transfers

Specific Heat Capacity	**Energy needed to raise 1kg of substance by 1°C**	Depends on: • Mass of substance • What the substance is • Energy put into the system.

Change in thermal energy = mass **X** specific heat capacity **X** temperature change.

$\Delta E = m \times c \times \Delta\theta$

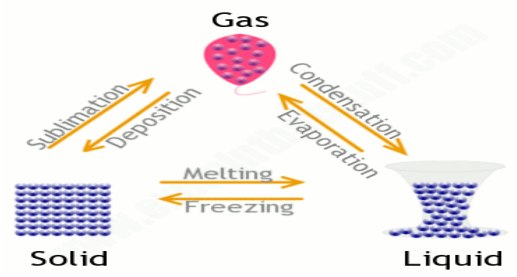
Internal energy	**Energy stored inside a system by particles**	Internal energy is the total kinetic and potential energy of all the particles (atoms and molecules) in a system.
	Heating changes the energy stored within a system	Heating causes a change in state. As particles separate, potential energy stored increases. Heating increases the temperature of a system. Particles move faster so kinetic energy of particles increases.

Specific Latent Heat	Energy needed to change 1kg of a substance's state
Specific Latent Heat of Fusion	Energy needed to change 1kg of solid into 1 kg of liquid at the same temperature
Specific Latent Heat of Vaporisation	Energy needed to change 1kg of liquid into 1 kg of gas at the same temperature

Energy needed = mass **X** specific latent heat.

$\Delta E = m \times L$

Year 9 Science: Particle Arrangement and Change of State



Pressure

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$P_1V_1 = P_2V_2$

Internal energy and energy transfers

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Change in thermal energy = mass **X** specific heat capacity **X** temperature change.

$\Delta E = m \times c \times \Delta\theta$

Internal energy	**Energy stored inside a system by particles**	
	Heating changes the energy stored within a system	

Specific Latent Heat	
Specific Latent Heat of Fusion	
Specific Latent Heat of Vaporisation	

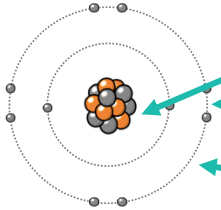
Energy needed =

$\Delta E = m \times L$

Year 9 Science: The Structure of Atoms and Groups and Periods

Atoms, elements and compounds

Atom	***The smallest part of an element that can exist***	Have a radius of around 0.1 nanometres and have no charge (0).
Element	***Contains only one type of atom***	Around 100 different elements each one is represented by a symbol e.g. O, Na, Br.
Compound	***Two or more elements chemically combined***	Compounds can only be separated into elements by chemical reactions.



Central nucleus	**Contains protons and neutrons**
Electron shells	**Contains electrons**

Name of Particle	Relative Charge	Relative Mass
Proton	+1	1
Neutron	0	1
Electron	-1	Very small

Relative electrical charges of subatomic particles

Electronic shell	Max number of electrons
1	2
2	8
3	8
4	8

Electronic structures

7 Li 3

Mass number	The sum of the protons and neutrons in the nucleus	
Atomic number	The number of protons in the atom	Number of electrons = number of protons

Mixtures	**Two or more elements or compounds not chemically combined together**	Can be separated by physical processes.

Method	Description	Example
Filtration	Separating an insoluble solid from a liquid	To get sand from a mixture of sand, salt and water.
Crystallisation	To separate a solid from a solution	To obtain pure crystals of sodium chloride from salt water.
Simple distillation	To separate a solvent from a solution	To get pure water from salt water.
Fractional distillation	Separating a mixture of liquids each with different boiling points	To separate the different compounds in crude oil.
Chromatography	Separating substances that move by different amounts (due to solubility) through a medium	To separate out the dyes in food colouring.

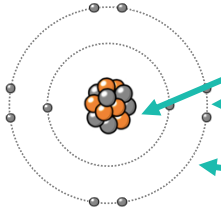
Year 9 Science: The Structure of Atoms and Groups and Periods

Atoms, elements and compounds

Atom	*The smallest part of an element that can exist*	
Element	*Contains only one type of atom*	
Compound	*Two or more elements chemically combined*	

Mixtures	Two or more elements or compounds not chemically combined together

Method	Description	Example
Filtration		
Crystallisation		
Simple distillation		
Fractional distillation		
Chromatography		



Central nucleus	
Electron shells	

Name of Particle	Relative Charge	Relative Mass
Proton		
Neutron		
Electron		

Relative electrical charges of subatomic particles

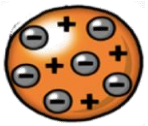
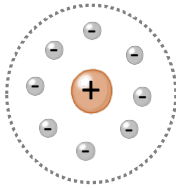
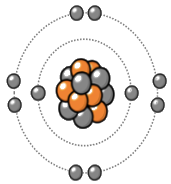
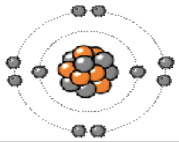
Electronic shell	Max number of electrons
1	
2	
3	
4	

Electronic structures

7 Li 3

Mass number		
Atomic number		

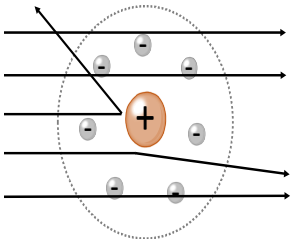
Year 9 Science: The Structure of Atoms and Groups and Periods

(1803)		Suggested idea of atoms as small spheres that cannot be cut.
Thomson (1904)		Proposed *'plum pudding'* model – atoms are a ball of positive charge with negative electrons embedded in it.
Geiger and Marsden (1909)	Diagram below	Directed beam of alpha particles (He^{2+}) at a thin sheet of gold foil. Found most travelled through, some were deflected, some bounced back.
(1911)		Used above evidence to suggest alpha particles deflected due to electrostatic interaction between the very small charged nucleus. Proposed mass and positive charge contained in nucleus while electrons found outside the nucleus which cancel the positive charge exactly.
Bohr (1913)		Suggested modern model of atom – electrons in circular orbits around nucleus, electrons can change orbits by emitting or absorbing electromagnetic radiation. His research led to the idea of some particles within the nucleus having positive charge; these were named protons.
Chadwick (1932)		Discovered neutrons in nucleus – enabling other scientists to account for mass of atom.

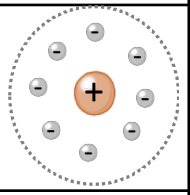
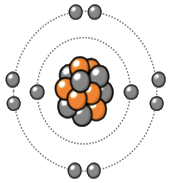
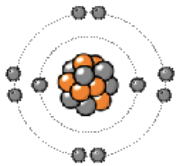
Relative atomic mass

Isotopes	**Atoms of the same element with the same number of protons and different numbers of neutrons**	**^{35}Cl (75%) and ^{37}Cl (25%)** Relative abundance = (% isotope 1 x mass isotope 1) + (% isotope 2 x mass isotope 2) ÷ 100 **e.g. (25 x 37) + (75x 35) ÷ 100 = 35.5**

The development of the model of the atom

Rutherford's scattering experiment	**A beam of alpha particles are directed at a very thin gold foil** 	Most of the alpha particles passed right through. A few (+) alpha particles were deflected by the positive nucleus. A tiny number of particles reflected back from the nucleus.
Chemical equations	***Show chemical reactions - need reactant(s) and product(s)***	Law of conservation of mass states the total mass of products = the total mass of reactants.
Word equations	**Uses words to show reaction** **reactants → products** **e.g.** **magnesium + oxygen → magnesium oxide**	Does not show what is happening to the atoms or the number of atoms.
Symbol equations	**Uses symbols to show reaction** **reactants → products** **e.g. $2Mg + O_2 \rightarrow 2MgO$**	Shows the number of atoms and molecules in the reaction, these need to be balanced.

Year 9 Science: The Structure of Atoms and Groups and Periods

(1803)		
Thomson (1904)		
Geiger and Marsden (1909)	Diagram below	
(1911)		
Bohr (1913)		
Chadwick (1932)		

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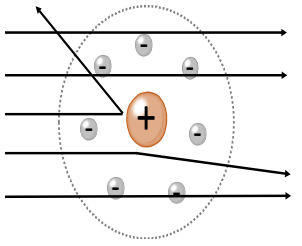
Rutherford's scattering experiment	**A beam of alpha particles are directed at a very thin gold foil** 	

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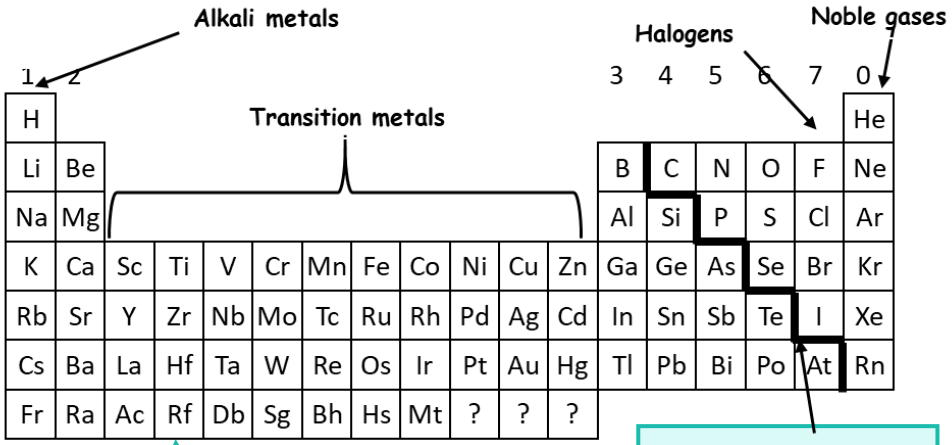
Year 9 Science: The Structure of Atoms and Groups and Periods



The Periodic table

Development of the Periodic table

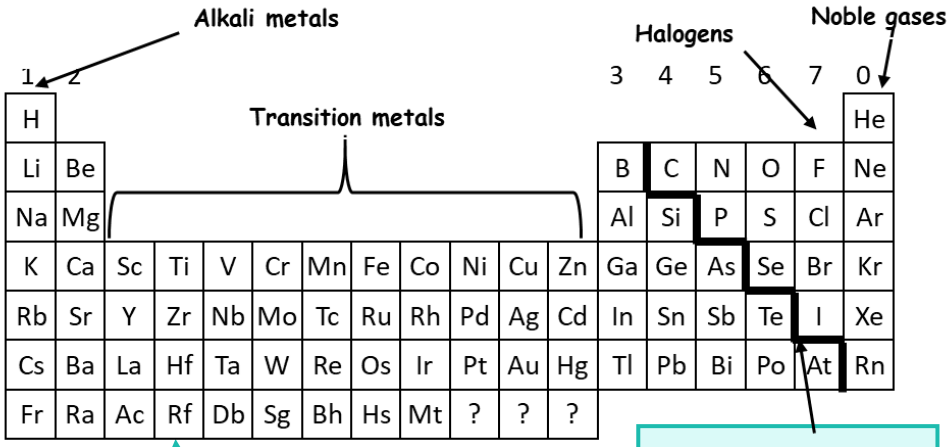
Metals	**To the left of the Periodic table**	Form positive ions. Conductors, high melting and boiling points, ductile, malleable.
Non metals	**To the right of the Periodic table**	Form negative ions. Insulators, low melting and boiling points.

Halogens	**Consist of molecules made of a pair of atoms**	Have seven electrons in their outer shell. Form -1 ions.
	Melting and boiling points increase down the group (gas → liquid → solid)	Increasing atomic mass number.
	Reactivity decreases down the group	Increasing proton number means an electron is harder to gain.

Elements arranged in order of atomic number	***Elements with similar properties are in columns* called *groups***	Elements in the same group have the same number of outer shell electrons and elements in the same period (row) have the same number of electron shells.
Before discovery of protons, neutrons and electrons	**Elements arranged in order of atomic weight**	Early periodic tables were incomplete, some elements were placed in inappropriate groups if the strict order atomic weights was followed.
Mendeleev	**Left gaps for elements that hadn't been discovered yet**	Elements with properties predicted by Mendeleev were discovered and filled in the gaps. Knowledge of isotopes explained why order based on atomic weights was not always correct.

Alkali metals	**Very reactive with oxygen, water and chlorine**	Only have one electron in their outer shell. Form +1 ions.
	Reactivity increases down the group	Negative outer electron is further away from the positive nucleus so is more easily lost.

Year 9 Science: The Structure of Atoms and Groups and Periods



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	Reactivity decreases down the group	

Alkali metals	**Very reactive with oxygen, water and chlorine**	
	Reactivity increases down the group	

Year 9 Science: The Structure of Atoms and Groups and Periods

Transition metals (Chemistry only)

With oxygen	**Forms a metal oxide**	Metal + oxygen → metal oxide	e.g. $4Na + O_2 \rightarrow 2Na_2O$
With water	**Forms a metal hydroxide and hydrogen**	Metal + water → metal hydroxide + hydrogen	e.g. $2Na + 2H_2O \rightarrow 2NaOH + H_2$
With chlorine	**Forms a metal chloride**	Metal + chlorine → metal chloride	e.g. $2Na + Cl_2 \rightarrow 2NaCl$

Noble gases	**Very unreactive, do not form molecules**	This is due to having full outer shells of electrons.	
	Boiling points increase down the group	Increasing atomic number.	

Compared to group 1	• **Less reactive** • **Harder** • **Denser** • **Higher melting points**	• ***Cu^{2+} is blue*** • ***Ni^{2+} is pale green, used in the manufacture of margarine*** • ***Fe^{2+} is green, used in the Haber process*** • ***Fe^{3+} is reddish-brown*** • ***Mn^{2+} is pale pink***
Typical properties	• **Many have different ion possibilities with different charges** • **Used as catalysts** • **Form coloured compounds**	

With metals	**Forms a metal halide**	Metal + halogen → metal halide e.g. Sodium + chlorine → sodium chloride	e.g. NaCl metal atom loses outer shell electrons and halogen gains an outer shell electron
With hydrogen	**Forms a hydrogen halide**	Hydrogen + halogen → hydrogen halide e.g. Hydrogen + bromine → hydrogen bromide	e.g. $Cl_2 + H_2 \rightarrow 2HCl$
With aqueous solution of a halide salt	**A more reactive halogen will displace the less reactive halogen from the salt**	Chlorine + potassium bromide → potassium chloride + bromine	e.g. $Cl_2 + 2KBr \rightarrow 2KCl + Br_2$

Year 9 Science: The Structure of Atoms and Groups and Periods

Transition metals (Chemistry only)

With oxygen	Forms a metal oxide		e.g. $4Na + O_2 \rightarrow 2Na_2O$
With water	Forms a metal hydroxide and hydrogen		e.g. $2Na + 2H_2O \rightarrow 2NaOH + H_2$
With chlorine	Forms a metal chloride		e.g. $2Na + Cl_2 \rightarrow 2NaCl$

Noble gases	Very unreactive, do not form molecules	
	Boiling points increase down the group	

Compared to group 1		• *Cu^{2+} is blue* • *Ni^{2+} is pale green, used in the manufacture of margarine* • *Fe^{2+} is green, used in the Haber process* • *Fe^{3+} is reddish-brown* • *Mn^{2+} is pale pink*
Typical properties		

With metals			e.g. NaCl metal atom loses outer shell electrons and halogen gains an outer shell electron
With hydrogen			e.g. $Cl_2 + H_2 \rightarrow 2HCl$
With aqueous solution of a halide salt			e.g. $Cl_2 + 2KBr \rightarrow 2KCl + Br_2$