

Waverley School

KS3 Homework Programme

Year 9
Spring 2



Waverley
School

Learning through diversity

Name: _____

Form: _____

Waverley School KS3 Homework Timetable

What night should I do each homework on?

Day	Subject Homework – 30 minutes	Due	+ Reading 30 minutes
Monday	English	Tuesday	
Tuesday	Science	Wednesday	
Wednesday	Humanities- History/Geography/R.E.	Thursday	
Thursday	MFL/Life Skills	Friday	
Friday	Maths	Next lesson	
Saturday	Art/Textiles/Music/Drama	Monday	x
Sunday	Physical Education and IT	Monday	x

Spend 60 minutes each night on your homework.

- 30 minutes of self-quizzing in your homework booklet or working on the given task by your subject teacher for that night.
- 30 minutes reading a suitable book that you can get from the school library.
- For Mathematics your study will consist of a series of work done online, and set by your subject teacher.

Introduction to Self-Quizzing

The knowledge and skills that you acquire through the completion of the homework in this booklet will help you succeed in all of your lessons and ensure that you have the correct foundations to achieve the best GCSE and A level grades possible. In turn, this will give you the best opportunities in life when you leave school.

All the information in the booklet is knowledge that your teachers believe is essential for you to know.

Self-quizzing is essential because firstly it allows you to be able to work independently, which will be a great benefit when you are revising for your GCSEs and A Levels, but secondly it allows you to do even more work away from the classroom and to become an even better learner.

The process of self-quizzing is designed to be repetitive because repeating this process over and over will enable you to achieve automaticity, where you know the content and can recall it easily.

Once you have achieved automaticity of this initial content you can then move rapidly towards more complex content, such as essay writing, which will allow you to make greater progress in your lessons.

Once you know all of this information you will be able to write more and in greater detail because once this initial content has been memorised it frees you from having to use up cognitive processing capacity in your short term memory.

Self-quizzing at Waverley School will be used:

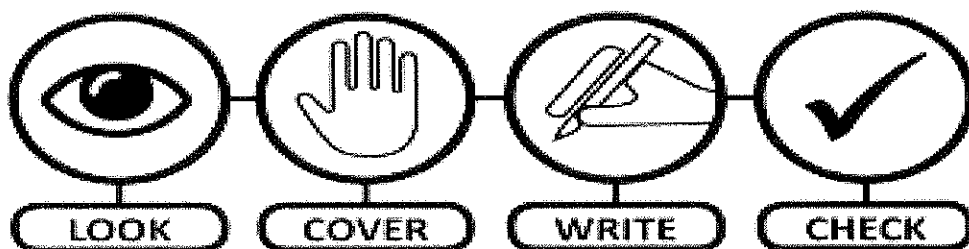
- To prepare for new learning taking place in your lessons.
- To consolidate the learning that has taken place during a lesson, giving you the opportunity to practice and refine particular aspects of your knowledge, and understanding.
- To stretch your knowledge and understanding beyond the curriculum.

How will my work be valued?

Your form tutor will check your practice book in form time each day. Practice books that are consistently presented above the minimum expectations will be rewarded with achievement points and golden tickets, at your form tutor's discretion. **How does Self-Quizzing work? See next page.**

Look/Learn, Cover, Write and Check/Correct

Humanity	Understanding and kindness to other people.
Equality	The same status, rights, and responsibilities for all the members of a society, group, or family.
Aspiration	A strong desire to achieve something high or great.
Respect	Caring enough to consider how words and actions impact others.



Look/Learn:

- 1) Using the school values worksheet read the information in the order it appears from top to bottom over and over again quietly for 3 minutes. If you were doing this at home, you may choose to read it aloud!

Cover:

- 2) Cover over the information that you have read so you cannot see anything at all.

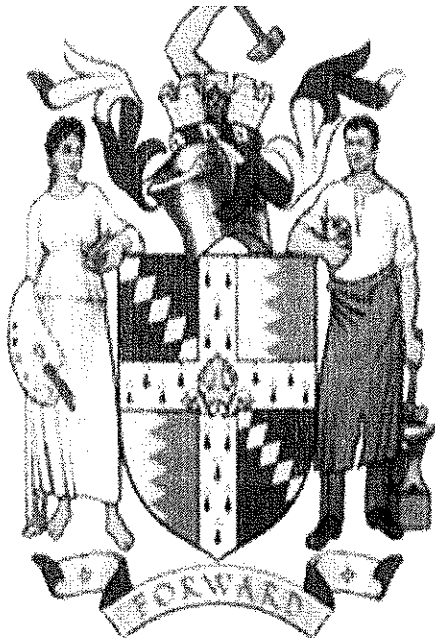
Write:

- 3) Now write out word for word what you have read in the same order it appears on the worksheet

Check/Correct:

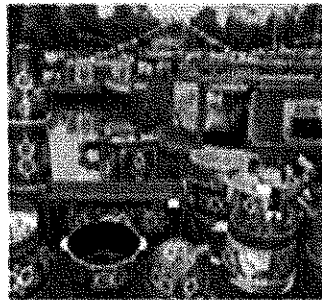
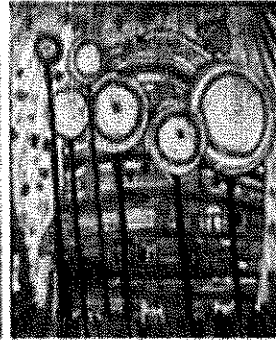
- 4) Uncover the worksheet and check your work. Correct any mistakes in green pen and add in any words you have missed out. Do this above where you have written. That is why the lines in your exercise book are so wide!

Repeat the process above until you can recall the information correctly.



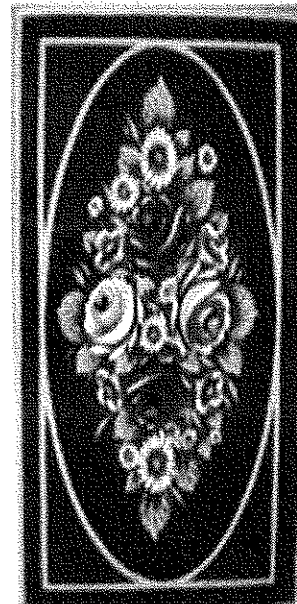
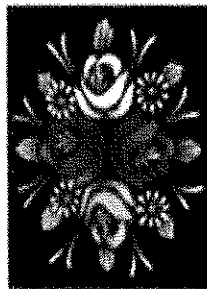
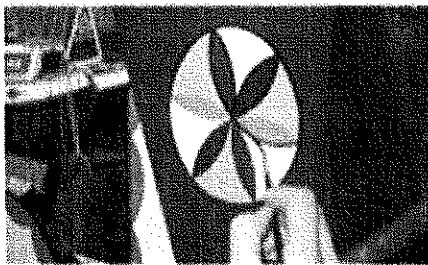
HUNDERTWASSER

- Hundertwasser was born on 15th December 1928 in Vienna, Austria.
- His real name is Friedrich Stowasser.
- After World War 2, Hundertwasser studied for three months at the Academy of Fine Arts in Vienna. He left to go travelling.
- The first exhibition of his work was held in Vienna in 1952.
- Hundertwasser has produced many different types of works of art (ranging from paintings, postage stamps, clothes, flags). His work often includes bright colours and natural, organic forms. He seldom uses straight lines, and uses lots of spirals.
- He also became interested in architecture and he has designed many houses with irregular forms and bright colours.
- Hundertwasser had very strong political views, shaped by his experiences of the Nazi regime during World War 2. He was anti totalitarian and campaigned against the European Union because he thought it would eradicate regional variation. He was also very aware of environmental issues.
- Towards the end of his life, Hundertwasser settled in New Zealand, and he was buried there after his death at sea on the ship the Queen Elizabeth the 2nd at the age of 71.



CANAL ART

GAS STREET BASIN

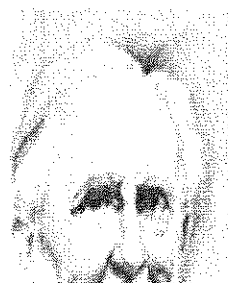


Painted Decoration

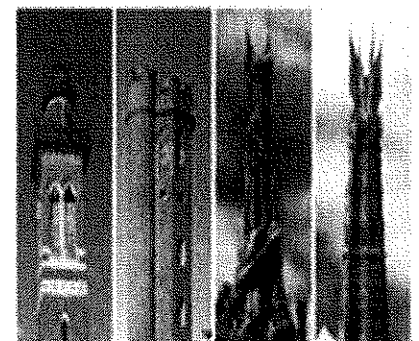
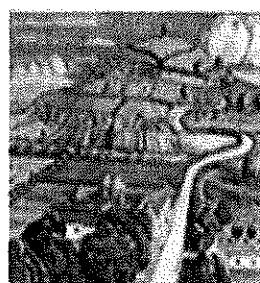
Decoration on a traditional English narrowboat: roses on the water can (top) and castles on the open doors to the cabin.

By the end of the 19th century it was common practice to paint roses and castles on narrow boats and their fixtures and fittings. Common sites include the doors to the cabins, the water can or barrel and the side of the boat along with ornate lettering giving the boat's name and owner. This tradition did not happen in all regions, the Chesterfield Canal being one waterway where narrow boats never bore such decoration.

TOLKIEN'S BIRMINGHAM



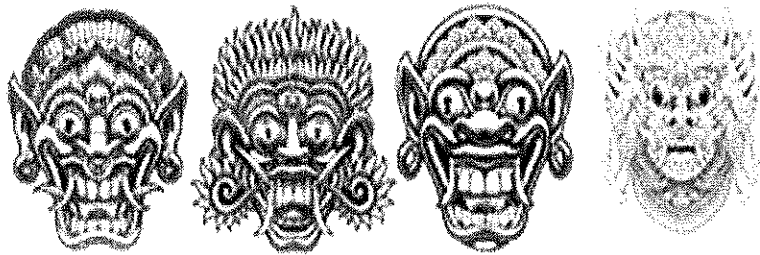
Tolkien was brought up in Mott Farm, Birmingham and was inspired very much by his surroundings. As a boy he would play by the river at Sponley Hill which became the inspiration for the Mill at Rivendell.





TATTOO FONT
A B C D E F G
H I J K L M
N O P Q R S T
U V W X Y Z

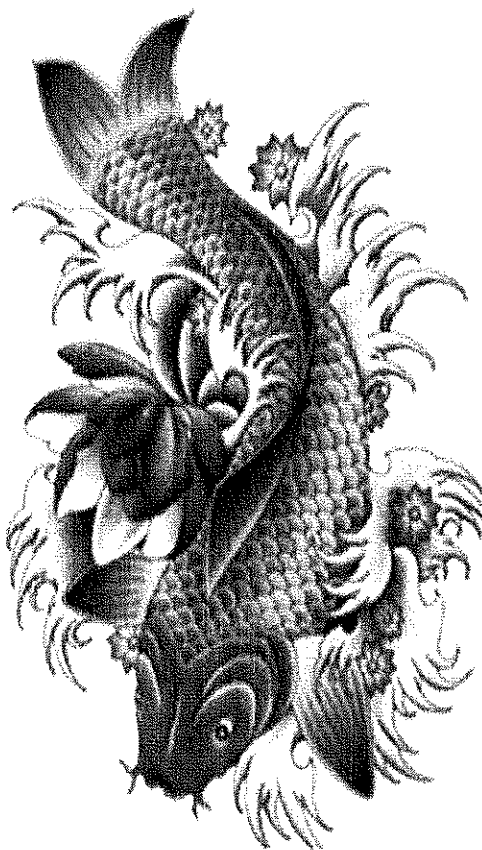
By the end of this journey, you will have deepened your understanding of Body Art and learned more of the different cultures that have developed their own style and the different meanings behind body art, its purpose and importance to an art form.



History of Body Art

Humans have marked their bodies with tattoos for thousands of years. These permanent designs—sometimes plain, sometimes elaborate, always personal—have served as amulets, status symbols, declarations of love, signs of religious beliefs, adornments and even forms of punishment.

In terms of tattoos on actual bodies, the earliest known examples were for a long time Egyptian and were present on several female mummies dated to c. 2000 B.C. But following the more recent discovery of the Iceman from the area of the Italian-Austrian border in 1991 and his tattoo patterns, this date has been pushed back a further thousand

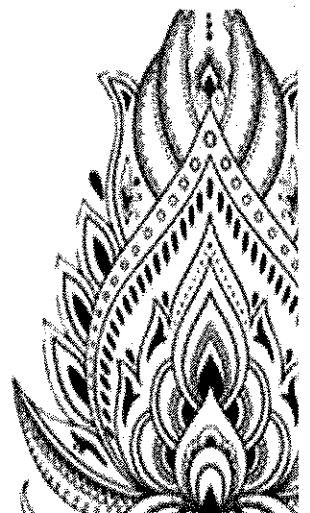
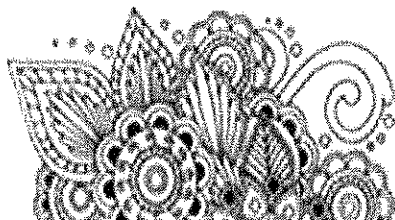


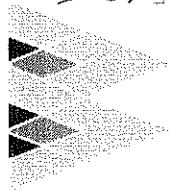
In your booklet, choose one of the images of traditional tattoo designs and use the grid to scale up the image below. Add colour to your work when you have finished.

Challenge yourself!



The art of Henna—called mehndi in Hindi and Urdu—has been practiced in Pakistan, India, Africa, and the Middle East for over 5000 years. It was originally used for its natural cooling properties for the people living in hot desert climates.





**Waverley
School**

Learning through diversity

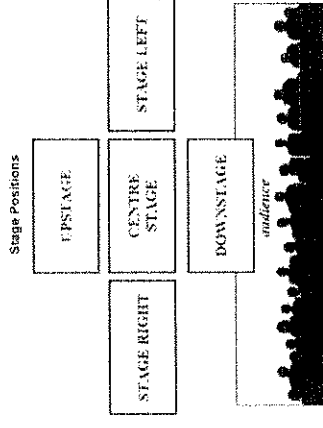
Creative Faculty - Knowledge Organiser – Yr 9 Drama – Hard To Swallow

Structural Devices

- Scene** A marked moment of action in a narrative
- Split Stage** Presenting 2 or more locations in 1 stage space
- Cross-cutting** The movement of audience attention from one space to another
- Flashback/forward** Moving forward or back in the chronology of a narrative
- Transition** The marked moment of moving from one scene to another

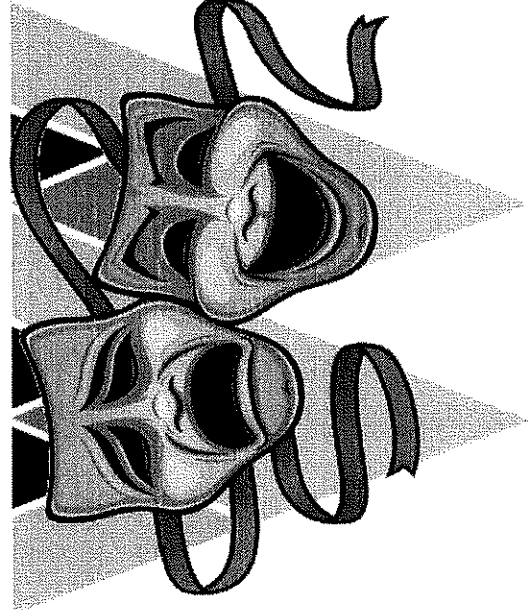
Effective Transition

Mark opening and closing moments with stillness. Transition with purpose. Consider eye contact – especially when using split-stage.

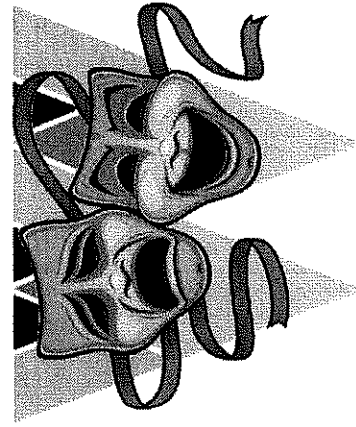
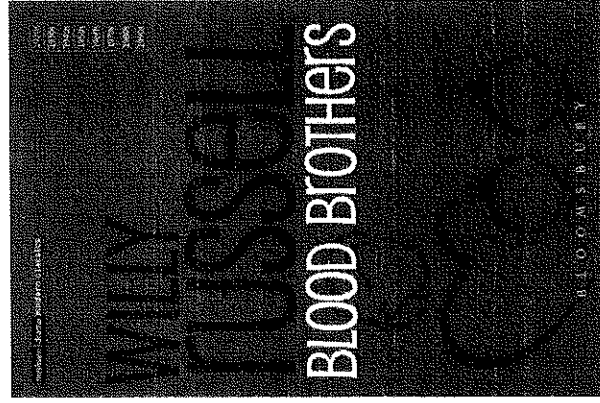
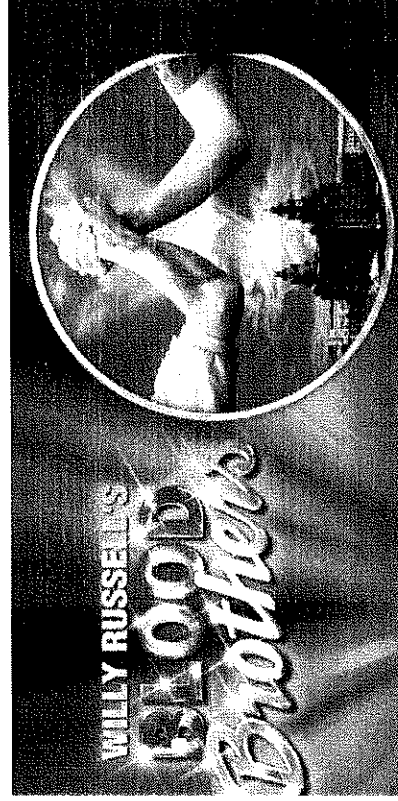


TECHNICAL VOCABULARY

Actor/Narrator	An actor who delivers a commentary accompanying a play.
Naturalism	Naturalism in drama refers to the belief that a play should try to represent reality as closely as possible. In naturalistic theater, stage time reflects real time, costumes and settings portray as
Non-Naturalism	Non-naturalism is a broad term for all performance styles that are not dependent on the life-like representation of everyday life
Facial expression	How you move/hold your face to show attitude and feelings.
Multi-role	The playing of a number of roles by an actor in a play.
Rehearse	Practise the performance
Thought Tracking	Thought Tracking is by characters in a play, when they are still in character they pause and step out of their character and say how they are feeling.
Blocking	Working out the movement in a performance
Character Diary	A diary written in the 1 st person from the point of view of your character.
Annotation	Highlight and make notes on a script or photos to show understanding of character and script.



Creative Faculty - Knowledge Organiser – Yr 9 – Drama – Blood Brothers



BLOOD BROTHERS – PLOT

Deserted by her husband, Mrs Johnstone already has five children and is expecting twins. She cleans house for childless Mrs Lyons who offers unofficially to adopt one of the babies.

Mrs Johnstone reluctantly agrees, she knows that the child will be well brought up in a rich household. But, there is a prophesy that twins parted at birth will die when they discover the truth, and both mothers do their best to keep the twins, Mickey and Edward, separated.

The situation becomes harder for both women when Mickey and Edward meet while playing in the street and when an immediate bond is formed. They become "blood brothers".

Distracted Mrs Lyons moves to the country. Soon after, Mrs Johnstone is rehoused nearby and the boys meet again and fall in love with the same girl, Linda.

But as Edward goes on to higher education, Mickey must take a boring job as Linda is pregnant. After marrying Linda he loses his job. He turns to crime but gets caught and sent to jail. On his release he becomes dependent on tranquillisers. Linda turns to Edward, now a councillor, for help. Edward gets Mickey a job - and a house. Mrs Lyons tells Mickey that Edward is having an affair with Linda and Mickey goes after Edward with a gun. He finds him at a meeting but cannot shoot him - until Mrs Johnstone bursts in and tells them the truth - that she gave Edward, his twin, away.

Mickey kills Edward and in turn is shot by the police.

DRAMATIC CONVENTIONS

PROLOGUE – A separate, introductory section of a play.

DRAMATIC IRONY – When the audience know something that the characters on stage don't.

MULTI ROLE – PLAY – When one actor plays a range of roles in a performance.

NON-NATURALISTIC – A performance that does not look like real life. It may include a range of dramatic techniques such as tableaux, narration, thought tracking or song + dance.

BRECHTIAN - A performance in the style of Bertolt Brecht – a drama practitioner who believed that the audience should be made to think as well as feel.

COMIC RELIEF – A break from sad events in a play – creates a humorous response from the audience.

ENSEMBLE – A group of actors who perform together for a more theatrical impact.

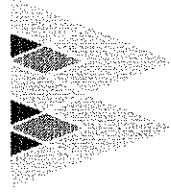
NARRATOR - A character who directly addresses the audience with new information, tells us that time has passed, or gives opinions.

FORESHADOWING– The play begins with what happens at the end.

Year 9 Music Knowledge Organiser

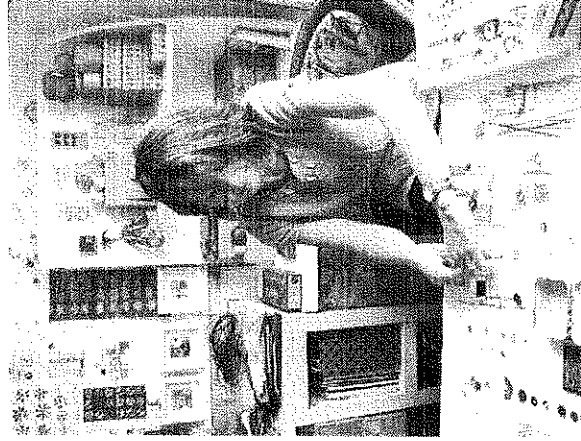
Reggae, Pop and Nubatechs

1	Off-beat	Beats 2 and 4 / weak beat stress
2	Syncopation	Off-beat rhythm
3	Chord	3 notes played together at the same time
4	Melody	A tune / pattern of notes
5	Bob Marley	Famous reggae musician, made songs such as Buffalo Soldier and One Love
6	Jamaica	A country in the Caribbean where reggae developed
7	Riff	A short catchy tune / chord sequence / repeated pattern
8	Bass line	A bass line has a low pitch and is the lowest part of the music. It creates rhythm, as well as harmony with the chords. This adds to the texture of the music.
9	Nasheed	An Islamic vocal song
10	Sample	A part of a song used or adapted in another song

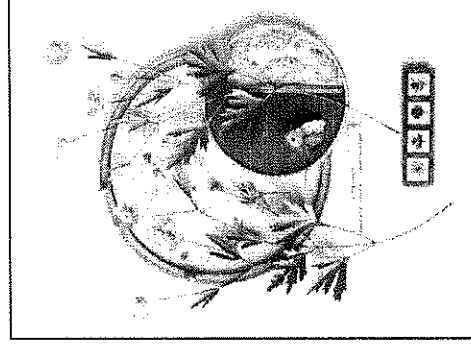
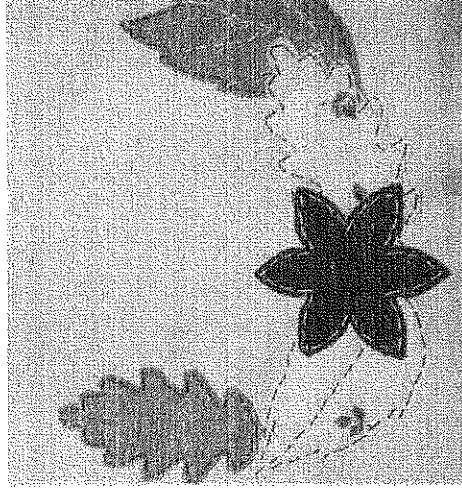


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Creative Faculty - Knowledge Organiser Year 9 2023-2024 Fabric Applique Wreath

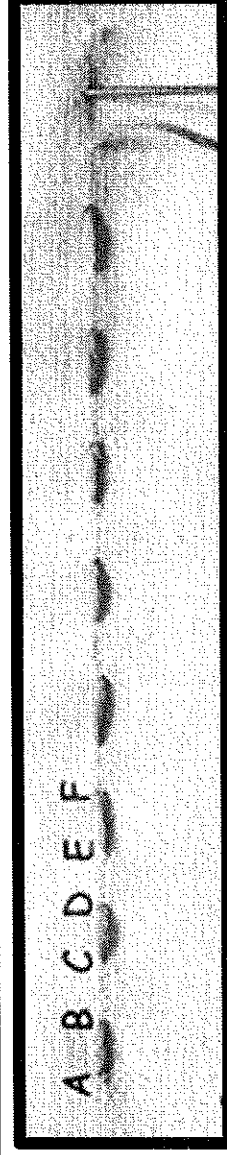
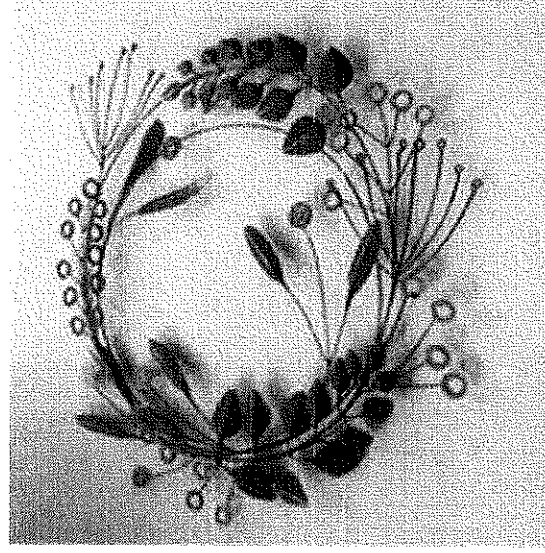


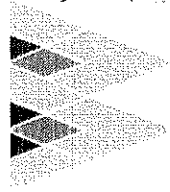
Liz Cooksey works by combining wire and thread used to create intricate and delicate 2D and 3D works reflecting her observations of nature. The inspiration for her work stems from the love natural forms in which she looks for shapes, textures, colours, within what might be a hedge row or a motorway verge, recording the small and insignificant details that can be sometimes overlooked.



Appliqué: from the French word 'appliquer' meaning 'to put on'.

Appliqué, sewing technique in which fabric patches, shapes are stitched on a base/foundation fabric, then stitched in place by hand or machine.



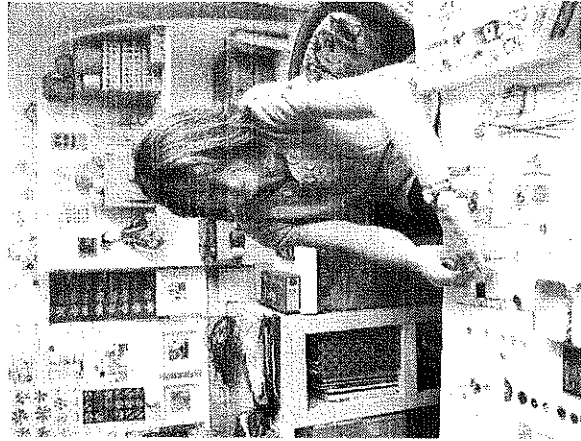


Waverley
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Learning through diversity

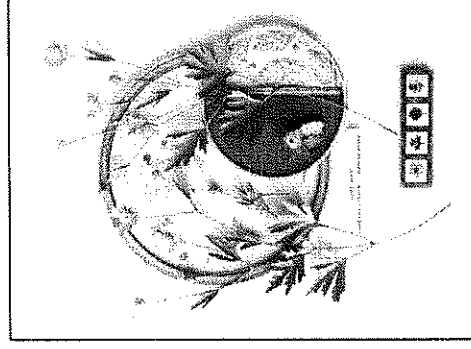
Creative Faculty - Knowledge Organiser

Year 9 2023-2024

Fabric Applique Wreath

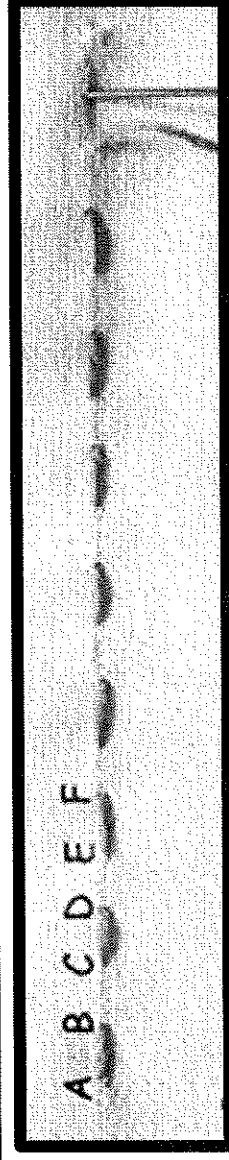
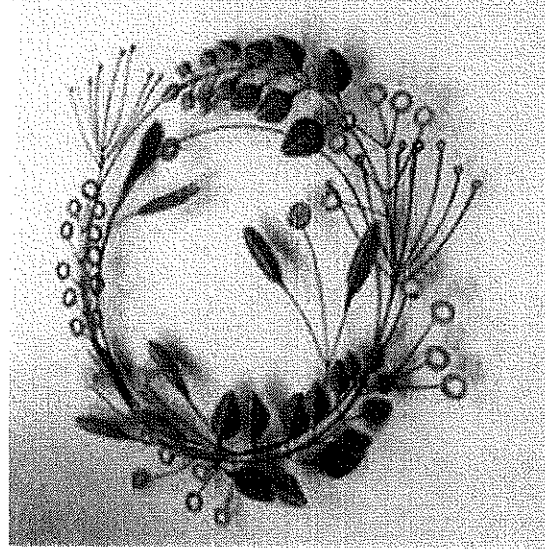


Liz Cooksey works by combining wire and thread used to create intricate and delicate 2D and 3D works reflecting her observations of nature. The inspiration for her work stems from the love natural forms in which she looks for shapes, textures, colours, within what might be a hedge row or a motorway verge, recording the small and insignificant details that can be sometimes overlooked.



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Appliqué, sewing technique in which fabric patches, shapes are stitched on a base/foundation fabric, then stitched in place by hand or machine.



Knowledge Organiser

Digital Graphics

Target audience:

You need to know your target audience: Who are they? What kind of things do they do? What products do they use? How old are they? What are they interested in? The answers to these questions and many more will help you better understand the people you are designing for. Getting an understanding of these individuals helps you create with ease and make something you know will relate to them.

Asset table

An asset table is a list of all of the assets, images and information you have collected for the project - listing where you got it from and describing any legal issues with using it.

Planning

You will need to create a work plan which lists all of the tasks involved in the whole project. You then need to estimate how long each task will take and create a chart or diary to record how long they REALLY take to complete. Build in some contingency time in case things go wrong! Add this to the plan and explain why you had to use it if things don't go according to plan all the time.

Scenario

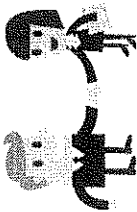
A book publisher requires a cover jacket for a new fiction book. The storyline of the book is based on a mission to the planet Saturn in our own solar system.

Title: Saturn Explorer, Author: Carotin Jacob, Genre: Science fiction, Publisher: 2020 World

The cover jacket will wrap around the front and back of the book. The dimensions of the cover jacket to include front, back and spine are: Width: 12.0 inches (305 mm) based on the front cover alone being 5.5 inches with a 1 inch spine Height: 8.5 inches (216 mm) A single piece of digital graphic artwork should be produced for the front, back and spine, which will need to be print quality. A second version of the cover jacket will be needed for the publisher website and online book retailers. The graphic should be resized to 500 pixels in height and saved as a separate file. The website version can be for the entire front/back artwork or just the front cover but must be 500 pixels high whichever approach you take. The target audience for the book will be quite broad but you can select a more specific audience group in your planning and explain why the content will appeal to them.

Client Requirements

Your client is the person you will be working for. They will tell you what to plan, design or create for them. The Client will set out requirements that they want you to follow when you plan the project - eg: Purpose, Theme, Style, Genre, Content

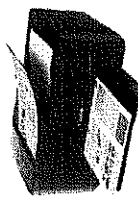


Export Options

Digital Graphics need to be saved in different formats for different purposes - the size and resolution will be different for:

- Print use
- Websites
- Multimedia

Check the client brief!



What type of file formats do digital graphics use?

- tiff
- jpg
- png
- bmp
- gif
- pdf

You will need to find out the different uses and properties of these different file formats and be able to describe why different formats are suitable for different situations.

Why are digital graphics used?

- To entertain
- To inform
- To advertise
- To promote
- To educate

What can you change about an image to make it more suitable for different uses?

- Size in Pixels
- Resolution (Dots per inch)
- Quality
- Compression

Where are digital graphics used?

- Magazine covers
- CD/DVD covers
- Adverts
- Websites
- Multimedia Products
- Games

Visualisation

A Visualisation is a sketch or diagram of what you think the final graphic might look like

Which resources will be needed to make your digital graphic?

- Digital Camera
- Internet
- Computer System
- Serif Software – Drawplus
- Pencil and Paper
- Microsoft Word
- Microsoft PowerPoint
- Microsoft Excel



Tools and Techniques

You need to show evidence of the tools and techniques you have used:

- Cropping / Cutout Studio
- Rotating
- Changing Brightness / contrast/Colour adjustment

Technical Compatibility

Your final image must meet the technical specification set by the client.

Correct size in Pixels and Correct Resolution
In Serif Draw Plus - File > Export > Adjust the size and resolution to fit the client brief

Subject Content	What you need to learn?
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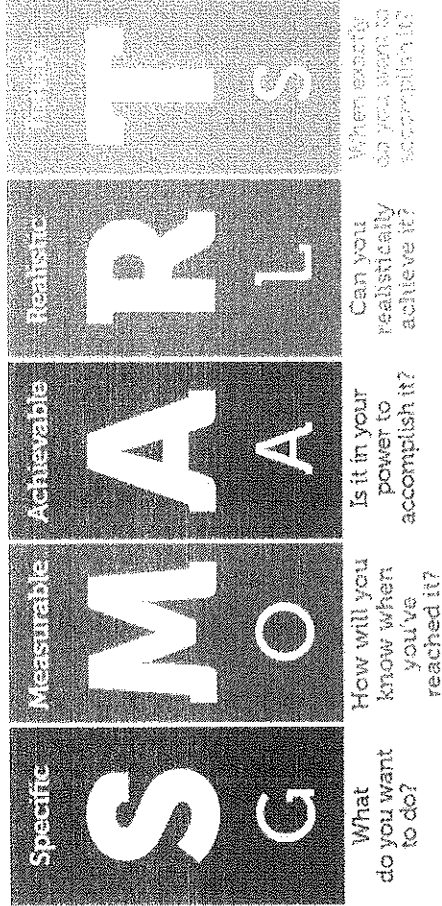
- 1.3.1 What business aims and business objectives are.
- Business aims and objectives when starting up:
- financial aims and objectives: survival, profit, sales, market share, financial security
 - non-financial aims and objectives: social objectives, personal satisfaction, challenge, independence and control.
- Why aims and objectives differ between businesses.

Financial	Non-Financial
Survival	Personal satisfaction
Break even	Challenge
Improve reputation	Independence
Increase motivation of staff	Control
Increase market share	Helping others
To grow	Being your own boss
To sell in a new market – e.g. abroad	Something to be proud of

Ethical and socially responsible objectives – organisations like the Co-op or the Body Shop have objectives which are based on their beliefs on how one should treat the environment and people who are less fortunate

Aim: Business aims are the broad targets that an entrepreneur has at the back of their mind.

Objective: Business objectives are clear, measurable targets of how to achieve business aims. (The stepping stones for how they are going to achieve them.)



Charities, social enterprises and voluntary organisations – their aims and objectives are led by the beliefs they stand for e.g. Divine Chocolate want to support the cocoa growers by giving back profits to help them get education and jobs so they are no longer living in poverty

Public sector businesses like the leisure centre, schools, doctors or library in Witney are run to not only generate a profit but provide a service to the public. This service will need to meet the needs of the less well off in society or help improve the ability of the economy to function: e.g. cheap and accessible transport service

Subject Content	What students need to learn?
-----------------	------------------------------

- 1.4.1 The concept of limited liability:
- limited and unlimited liability
 - the implications for the business owner(s) of limited and unlimited liability.
- The types of business ownership for start-ups:
- sole trader, partnership, private limited company
 - the advantages and disadvantages of each type of business ownership.
- The option of starting up and running a franchise operation:
- the advantages and disadvantages of franchising.

<u>Unlimited liability:</u> If the business gets into debt, the owner of the business is liable. They will need to find the money to pay off these debts. This could mean they have to sell off their car or house to cover the debt. <u>Limited Liability:</u> If the business gets into debt, the shareholders are not required to pay these off. The shareholders only lose the money they originally invested in the business, no more.
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	Description	Advantages	Disadvantages
Sole Trader	Owned and controlled by one person, who usually also manages the business.	● Easy to set up ● Own boss ● Keep all profits	● Finance difficult to raise ● No established reputation ● Unlimited liability
Partnership	Controlled and owned by 2-20 people. Each have a share in the business. All or some of the partners manage the business	● Shared workload ● Share ideas and expertise	● Disagreements ● Share profits with partners
Private limited company	Owned and controlled by a group of private individuals. Shares can be sold to family and friends NOT TO THE PUBLIC.	● Control over who sell shares to ● Seen as reputable due to private limited company status ● Limited liability	● Shares can only be sold to family and friends – not as easy to raise finance as a public limited company ● Dividends (share of the profits) must be paid to shareholders
Franchising (buying into a franchise like McDonalds)	Paying a franchise owner for the right to an established business name, branding and business methods.	● Benefit from brand image ● Loyal customers ● Greater chance of success then setting up new business	● Royalty payments to franchisor (% of profits goes back to McDonalds) ● No freedom to bring in new ideas

‘An Inspector Calls’ by J.B. Priestley: A Knowledge Organiser

Characters		
Inspector Goole	Priestley's mouthpiece; advocates social justice; serves as the Birlings' conscience	Socialist, moralistic, righteous, powerful, intimidating, unconventional, mysterious, imposing, sardonic, omnipotent
Mr. Arthur Birling	Businessman; capitalist; against social equality; a self-made man (new-money)	Capitalist, arrogant, foolish, Panglossian, emasculate, prejudice, ignorant, selfish, stubborn, vainglorious
Mrs. Sybil Birling	Husband's social superior; believes in personal responsibility	Arrogant, cold-hearted, insincere, prejudice, naïve, conformist, bitter, controlling, remorseless
Sheila Birling	Young girl; comes to change views and pities Eva; feels regret	Transformative, remorseful, socialist, pseudo-inspector, sensitive, astute, strong-minded, empowered
Eric Birling	Young man, drinks too much; forces himself on Eva Smith; regrets actions	Rebellious, reckless, immature, insubordinate, compulsive, desperate, disgraced, dualistic, irresponsible
Gerald Croft	Businessman; engaged to Sheila; politically closest to Birling	Aristocratic, evasive, secretive, dishonest, disingenuous, oleaginous, chivalric, privileged, pragmatic
Eva Smith	Unseen in play; comes to stand for victims of social injustice (changes her name to Daisy Renton)	Suffragist, victim, emblematic, allegorical, vulnerable, desperate, socialist, moralistic, principled
Dramatic irony	Birling's speeches, Mrs. Birling's witless implication of Eric	
Stage directions	Instructions for the actors; often revealing – such as the lighting change when the Inspector arrives: "Pink and intimate then brighter and harder"	
Setting	Constant throughout but subtle changes e.g. lighting; characters on/off stage	
Tension	Builds up throughout the play ; interrogation of characters, personal relationships, secrecy	
Cliff-hanger	Eric's reappearance in Act 3; the ending allows the audience to make up their minds	
Foreshadowing	Symbolism (The Titanic), Mr. Birling's "Knighthood", war	
Time-lapse	Set in 1912, written in 1945; audience in a privileged position.	
The 4 th Wall	The Inspector's final speech addressed directly to audience.	
Social, Historical and Literary Allusions		
"the Titanic"	The Titanic sailed from Southampton and sank in the early hours of 15th April 1912. Priestley clearly wants his audience to see his drama play out against a background of real historical events and he has also chosen a moment in time when Birling's comments appear particularly ironic.	
"Nobody wants war"	In reality, economic rivalry between the British Empire and the new German Empire was one of the many causes of the First World War.	
"Russia"	The irony here suggests that Russia will have progressed further than other European countries by the 1940s.	
"Bernard Shaws and H. G. Wells"	Both the noted Irish playwright George Bernard Shaw (1856-1950) and the father of science-fiction H. G. Wells (1866-1946) were well-known and outspoken socialists.	

Plot

Act 1	Set in April 1912, Brumley, Midlands. UK. The Birling family and Gerald Croft are celebrating Sheila Birling's engagement to Gerald with a dinner. Mr Birling lectures his son, Eric Birling, and Gerald about the importance of every man looking out for himself if he wants to get on in life. Edna (the maid) announces that an inspector has arrived. Inspector Goole says that he is investigating the death of a young woman who committed suicide. Eva Smith. Mr Birling is shown a photograph of Eva, after initially denying recognising the woman in the photo, he remembers firing her in 1910 for organising a strike over workers pay. Sheila recalls also having Eva sacked about her manner when served by her in an upmarket department store. The Inspector reveals that Eva Smith changed her name to Daisy Renton. Gerald reveals to Sheila he had an affair with Daisy Renton.
Act 2	Gerald explains to The Inspector that he had an affair with Eva, but hasn't seen her since he ended their relationship back in Autumn 1911. Sheila gives her engagement ring back to Gerald. The Inspector turns his attention to Mrs Sybil Birling. She confesses that she also had contact with Eva, but Eva gave herself a different name to Mrs Birling. Eva approached a charity chaired by Mrs Birling to ask for help. Eva was desperate and pregnant but help was refused by Mrs Birling because she was offended by the girl calling herself 'Mrs Birling'. She tells Eva that the baby's father should be made entirely responsible. She also tells Inspector Goole that the father should be held entirely responsible and should be made an example of.
Act 3	Eric is revealed as the father. He stole money from Mr Birling's office to provide money to Eva. The Inspector delivers his final speech. After he leaves, the family begin to suspect that he was not a genuine police inspector. A phone call to the Chief Constable confirms this. Next, they phone the infirmary to be informed that no suicide case has been brought in. Mr Birling, Mrs Birling and Gerald congratulate themselves that it was all a hoax and they continue can continue as before. This attitude upsets Sheila and Eric. The phone rings. Mr Birling announces to the family that a girl has just died on her way to the infirmary, a police inspector is coming to question them

Key concepts and context: Think about...

1912	Set just before WWI and the sinking of the Titanic. A moment of rising international tensions and industrial expansion. End of Victorian era saw the demise of the rigid class system. Labour Party, founded in 1900, gaining momentum. The Russian Revolution began in 1917.
1945	People were recovering from six years of warfare, danger and uncertainty. Class distinctions greatly reduced as a result of two world wars. Women had a more valued place in society. Desire for social change. Following WW2, Labour Party won a landslide victory over Winston Churchill and the Conservatives.
Wealth, Power and Influence	The Birlings and the Crofts are representative of the wealthy upper-class. They all misuse their social influence to benefit themselves. Their actions adversely affect the vulnerable people in society.
Blame and Responsibility	Who is to blame for Eva's death? Each of the Birlings contribute to a chain of events leading to the destruction of Eva Smith. What responsibilities do the characters have to each other? To society?
Public v Private	How do the public lives, the facades, of the Birlings juxtapose their private personas? What are their motivations for this? What are the repercussions, and for who?
Morality and Legality	What are the moral and legal laws of the society depicted in the play? How do they interweave? What actions do the characters undertake that are wrong, morally or legally?
Class Politics	How do the ideologies of capitalism and socialism collide in the play? Which characters are representative of which political allegiance? Is there a correlation between a character's political beliefs and their behaviours?
Prejudice	What are the prejudices held by the Birlings? What are their inherent views regarding class and status? How do they act on these prejudices, and what are the consequences?
Young v Old	What differences are evident between the younger and older generation? They react and behave differently throughout the play – why? What are their attitudes towards each other? What do they learn? Which characters change, and how?

AN INSPECTOR CALLS Quotes - J.B. PRIESTLEY

Character Quotes

Birling's Confidence	'We're in for a time of steadily increasing prosperity'
Birling on society	'The way some of these cranks talk and write now, you'd think everybody has to look after everybody else'
Sheila's recognition	'but these girls aren't cheap labour – they're people''
Sheila's regret	'it's the only time I've ever done anything like that, and I'll never, never do it again to anybody'
Sheila on the inspector	'we all started like that – so confident, so pleased with ourselves until he began asking us questions'
Sheila on Eric	'he's been steadily drinking too much for the last two years'
Inspector on guilt	'I think you did something terribly wrong – and that you're going to spend the rest of your life regretting it'
Mrs Birling defends herself	'she was claiming elaborate fine feelings and scruples that were simply absurd in a girl in her position'
Eric explains	'I'm not very clear about it, but afterwards she told me she didn't want me to go in but that – well, I was in that state when a chap easily turns nasty – and I threatened to make a row'
The inspector says	'but each of you helped to kill her. Remember that'
Inspector's message	'there are millions and millions and millions of Eva Smiths and John Smiths still left with us, with their lives, their hopes and fears, their suffering, and chance of happiness, all intertwined with our lives, with what we think and say and do. We don't live alone.'

Key Notes

Priestley asks his audience to examine their individual and collective responsibility to society. He wants a welfare state .
The hypocrisy of middle-class Edwardian society is uncovered: appearance & reputation matter more than reality & morality .
Priestley criticises the selfishness of capitalism and wants a fairer, socialist future after the horrors of two world wars..
Priestley shows the older generation to be set in their ways, while the young are open to change .
Eva Smith is the embodiment of young, working-class women who were oppressed by the middle/upper classes .
The play demonstrates that when workers do not have full employment rights they cannot fight back

Order of the Inspector's Questioning

Act 1	Sheila and Gerald's engagement is celebrated.
Act 1	Birling says there will be no war; references Titanic
Act 1	Inspector arrives; a young girl has committed suicide.
Act 1	Birling threw her out after strike; Sheila had her fired for laughing.
Act 2	Gerald had an affair with Daisy Renton
Act 2	Mrs. Birling refused to give charity to Eva; blames father.
Act 3	Eric's involvement revealed; possible rape hinted at.
Act 3	Inspector leaves. Gerald returns; met policeman, no Inspector G
Act 3	Telephone rings; an inspector is coming.

Inspector's Quotes

Social responsibility	"We are responsible for each other" Inspector "Public men, Mr Birling, have responsibilities" Inspector "It's what happened to the girl and what we all did to her that mattered." Eric
Capitalism	"These silly capital vs labour agitations." Birling "A man has to make his own way" Birling
Class	"A girl of that class" Mrs Birling "Well, we've several hundred young women there, y'know, and they keep changing." Birling
Age	"the famous younger generation" Birling "What's the matter with that child?" Birling "Just keep quiet, Eric" Birling
Gender & attitudes to women	"I hate those hard-eyed dough-faced women" - Gerald "And you think young women ought to be protected against unpleasant and disturbing things?" Inspector "She had far too much to say, far too much" Birling



LORD OF THE FLIES

Context - Lord of the Flies was written by William Golding in 1954.

William Golding - William Golding was born on September 19, 1911, in Cornwall, England. Golding pursued the natural sciences until switching to English literature at university. He served in the navy in WWII, before becoming a teacher and writer. *Lord of the Flies*, which was published in 1954, was his first and biggest success, however he also wrote *The Pincher Man* (1956) and *The Brass Buttery* (1958).

The Coral Island - The Coral Island: A Tale of the Pacific Ocean (1858) is a novel written by Scottish author R.M. Ballantyne. It tells of 3 boys marooned on a Pacific island; the only survivors of a shipwreck. In the book, the children encounter different types of evil, yet their growing friendship, courage, and determination aid them in survival. Written around 100 years earlier, it nevertheless inspired *Lord of the Flies*. Golding was unsatisfied with how it 'spoused myths' and sought to invert its meanings (the evil is instead within the boys).

Religion - *Lord of the Flies* was written in the mid-twentieth century, a period of great discovery and scientific advancement. Aspects of life that were previously attributed to being religious or supernatural phenomena or were now being explained in some parts by science. In *Lord of the Flies*, Golding explores some of the fundamental issues that science could not fully explain, for example human sin and the conflict between internal good and evil.

Darwin and Evolution - In the late 19th Century, Charles Darwin published his research paper 'The Origin of Species'. This set out the theory of evolution - that humans and other life had developed from more primitive species. At the time that Golding wrote *Lord of the Flies*, it was still a relatively new concept that man had evolved from more primitive, animalistic creatures.

Sigmund Freud - Sigmund Freud (1856-1939) was an Austrian neurologist and the founder of psychoanalysis; a clinical method for treating psychopathology. He famously theorised that the human mind was a constant battle ground for three contrasting forces: the id (our most primal needs and desires), the superego (our sense of conscience and morality) and the ego (our conscious, rational mind). *Lord of the Flies* can be read through this theory, as the boys battle with what they have learnt is right and their innermost desires.

World War II - World War II was the largest and deadliest conflict in human history, involving all of the major developed nations in the world. The war pitted the Allied countries against the Axis powers (led by Hitler's Nazi Germany). In total, between 50 and 80 million people died, leaving a catastrophic effect the world over. Golding served in the navy, and participated in the invasion of Normandy. It had a profound effect on his view of the evils of which humanity was capable.

Main Characters - Consider what Golding intended through his characterisation of each of the below.

Ralph - Ralph is the lead protagonist of the novel. He is a twelve year old English boy, who has fair hair, and a larger physique than most of the boys on the island. Ralph attempts to coordinate the boys to build a functioning civilisation on the island until they can be rescued. He represents the civilizing impact of human beings, as opposed to Jack's savage instincts. He is closely allied with Piggy.

Piggy - Piggy is arguably the most intellectual and mature boy on the island, but a combination of his whiny voice, overweight physique, and annoying manner means that his voice is often drowned out. Piggy becomes Ralph's lieutenant, remaining sure that civilisation is the way forward on the island. He represents the scientific, rational side of civilisation.

Roger - Roger is a cruel and sadistic boy, who displays a tendency to enjoy violence from early in the novel. Roger is one of the older boys, who enjoys bullying the littluns, and very quickly becomes Jack's lieutenant when the Castle Rock tribe is formed. Roger is often seen as the opposite of Simon, as he presents a sense of natural evil. His true inner nature is shockingly revealed when he rolls a boulder over Piggy, killing him, in the final chapters of the novel.

Quotes: "We can't be rescued if we don't have smoke." "Roger - Roger is a cruel and sadistic boy, who displays a tendency to enjoy violence from early in the novel. Roger is one of the older boys, who enjoys bullying the littluns, and very quickly becomes Jack's lieutenant when the Castle Rock tribe is formed. Roger is often seen as the opposite of Simon, as he presents a sense of natural evil. His true inner nature is shockingly revealed when he rolls a boulder over Piggy, killing him, in the final chapters of the novel." **Quote:** "Roger advanced upon them as one wielding a nameless authority."

Jack - Jack is the main antagonist of the novel, as he comes into direct opposition with Ralph on more than one occasion. He is also one of the older boys stranded on the island. Jack becomes the leader of the hunters but grows total power. He becomes wild, barbaric and cruel on the novel progresses. He becomes an expert at manipulating other boys, and represents human savagery.

Simon - Simon is a shy and sensitive boy who has often been described as the only truly 'good' character on the island. He helps the younger boys and is willing to work for the good of the community. Unlike Ralph and Piggy, Simon's moral actions do not seem to have been imposed upon him by society. In this way he represents a natural goodness that is lost when he dies.

The Littluns - 'The Littluns' is the name given by the older boys to identify the younger boys on the island. Whilst perhaps they need the most care of any on the island, the fact that hardly any of their names are mentioned demonstrates that they are not considered important - they are certainly not appropriately cared for by the older boys. The Littluns are often excitable and easily distracted, and are terrified by the idea of the beast.

Quote: "Simon found for [the littluns] the fruit they could not reach"

Themes - A theme is an idea or message that runs throughout a text.

Civilisation vs. Savagery - The central themes in *Lord of the Flies* is a conflict between two competing impulses within all human beings - the inclination towards living by rules, acting peacefully (civilisation) and the impulse towards gratifying desires and acting violently (savagery). The boys battle between these two forces throughout their whole time on the island.

Innocence - The boys on the island progress from well-behaved, orderly young boys who seek rescue, into bloodthirsty hunters who have no desire to return to civilisation. Golding does not paint this as a result of some external driving force, but rather as resulting naturally from innate desires that have always rested within them.

'The Beast' - Throughout their time on the island, the boys fear a terrifying, imaginary beast that they believe stalks the island. The beast is in fact symbolic of the primal instinct of savagery that lies within each of the boys. Only Simon realises this, and is soon killed.

The Weak and the Strong - Golding explores how communities and leadership evolve in the absence of a determined order. Immediately after they are marooned on the island, the boys seek a leader (Ralph) and seek to determine some sort of hierarchy. Weaker individuals are cast aside, bullied, and even killed (e.g. the littluns and Piggy).

Chapter-by-Chapter Summary - Alongside key quotations from each scene.

Chapter 1	A transport plane carrying a group of English boys is shot down on an island. Jack and Piggy find a conch shell that they use to call the other boys. No adults survive - only boys aged 6-12. Some boys tease Piggy. Ralph is named leader, and Jack the chief hunter. The hunters find a tangled pig, but Jack finds himself unable to kill it.	"Next time there would be no mercy. He looked round fiercely, daring them to contradict."	
Chapter 2	It is agreed that whoever has the conch shall call at meetings may speak. A young boy claims to have seen some form of 'beast' or 'monster' the night before, which makes the other boys shudder. The older boys try to reassure them. The boys decide to build a fire on the top of the mountain, to alert nearby ships/planes. In their enthusiasm, they accidentally set trees ablaze. A small boy playing near to the trees is now missing. Piggy laments the boys' treachery.	"That little 'un that had a mark on his face - where is he now?"	
Chapter 3	Ralph shares his problems with Jack and Simon - none of the boys are helping to build the hut, the hunters have failed to kill anything, and most of the boys just want to play. Jack is only bothered about killing animals for food. Jack and Ralph begin to bicker, and become increasingly hostile towards one another. They try to make peace by going for a swim in the lagoon together, but it is clear that their feelings fester. Simon notices that the boys are helping the 'littluns'. Eventually he comes to a clearing, where he finds beautiful.	"They walked along, two continents of experience and feeling, unable to communicate."	
Chapter 4	The Littluns become troubled by visions and bad dreams. They continue to talk of the 'beast'. Roger becomes increasingly violent and sadistic towards the littluns. Jack disappears to kill a pig. A ship is seen, but the fire has gone out. Ralph is furious at Jack for this. The hunters return, crazed that they have caught a pig. In the ensuing argument, Jack breaks Piggy's glasses. Jack eventually accepts his failure, but does not apologise to Piggy.	"Here, in visible set strong, was the taboo of the old life. Round the squatting child was the protection of parents and school and policeman and the law."	
Chapters 5-6	Jack calls a meeting to bring order. Again, the older boys try to ally fear of the beast. A littlun claims to have seen the beast and Jack claims that he will kill it if he sees it. This sends the boys into panic behaviour and they follow Jack. Ralph thinks of relinquishing control, but Piggy tells him that the boys need guidance. In the next chapter, above the island, there is a brief aerial battle. A dead parachutist falls to the island and becomes caught in the trees. His parachute flaps in the wind. Sam and Eric awake, and see the parachutist - they mistake this for the beast. The boys thus begin an expedition onto the hill to find the beast - the littluns can become preoccupied with ideas of building a fort.	"Life'll have to go back and climb the mountain. That's where they saw the beast."	
Chapter 7	Ralph feels disconsolate about the disorder on the island, but Simon soothes him. The boys find a dead pig, and decide to hunt the boar. Ralph gets caught up in the exhilaration. Later that night, the group recreates the thrill of the chase, and in their excitement almost kill a boy named Robert. Ralph, Jack, and Roger climb up to the summit of the mountain and see what they think is the beast (the parachutist flapping in the wind). They hurry down to the mountain to warn the other boys.	"He bound himself together with his will. He had his fear and bathing into a hatred, and stood up."	
Chapter 8	The boys return claiming to have seen the beast, to Piggy's bemusement. Jack says Ralph is a coward who should be removed as Chief, but the others won't vote him out. Jack storms off, creating a new tribe with him as chief. They steal things from Ralph's tribe. Simon, alone, sees a pig's head, swimming with flies. In an apparition, it taunts him. He faints. Simon wakes in a daze, and staggers around. He sees the parachutist, and realises the boys' mistake. He rushes down to tell them that the beast does not exist. At Jack's tribe, a feast is held - all except Simon are present. Jack sits with a painted face on a throne, issuing commands. He issues an invitation to all of Ralph's tribe to join his own - most accept. They begin a wild tribal dance. At this point Simon comes down from the forest. Meeting him in the dark, the boys kill him in their wild frenzy. It is swept into the ocean, as a storm begins, and the parachutist is swept off the cliff.	"There isn't anyone to help you. Only me. And I'm the Beast."	
Chapter 9	Almost all have joined Jack's tribe. Ralph and Piggy awake, feeling ashamed. At Castle Rock, Jack rules with absolute power - acting brutally to those in the tribe. He states that Ralph's tribe are a danger. Jack's tribe attacks and badly beat Ralph and his tribe. They steal Piggy's glasses, which are the only way of making fire on the island.	"Even in the rain they could see how small a beast it was and already as blood was staining the sand."	
Chapter 10	Ralph's tribe travel to Castle Rock to try and make the others see reason. Jack and Ralph square off, and Sam and Eric are accused by Jack's tribe. Piggy tries to make his voice heard, but Roger punches a huge boulder down the cliff, knocking Piggy to his death. Ralph narrowly escapes with his life, whilst Sam and Eric are tortured into joining Jack's tribe. In the final chapter, Ralph hides in the jungle. Jack plans to set the whole tribe after him to kill him. Smelling smoke, Ralph realises Jack has set the forest on fire to smoke him out. His pursuers, armed with spears, are close to catching and killing him when a naval officer appears, having seen the smoke. He laments their lack of civilisation.	"They didn't come for the conch. They came for something else. Ralph - what am I going to do?"	
Chapters 11-12			

Golding's Language Devices

Simile	Metaphor	Interesting Adjectives	Personification
"When the sun sank, darkness dropped on the island like an extinguisher." (Golding, Ch4)	"Now they talk - not only the littluns, but my hunters sometimes - talk of a thing, a dark thing, a beast, some sort of animal." (Jack, Ch5)	"He began to dance and his laughter became a bloodthirsty snarling." (Golding, Ch4, about Jack)	"At midday the illusions merged into the sky and there the sun gazed down like an angry eye." (Golding, Ch4)

Features of Fiction

Adventure Novel - Adventure stories commonly feature characters on a desert island, needing to be brave and resourceful to survive. Other examples are <i>Robinson Crusoe</i> and <i>Treasure Island</i> . Golding was particularly influenced by <i>The Coral Island</i> , in which three shipwrecked boys band whilst being marooned on an island together. Golding found this hard to believe, and so wrote his own version!	Allegory - Allegories are narratives that have deeper, symbolic levels of meaning. In <i>Lord of the Flies</i> , Ralph stands for civilisation, whilst Jack stands for savagery. -Piggy symbolises rational human thought, whilst Simon represents human morality and goodness. - The island setting is a microcosm of the wider world.
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Year 9 Spring Term 2– Why is the Middle East an important world region?

Why is the Middle East a major economic region of the world (oil)?

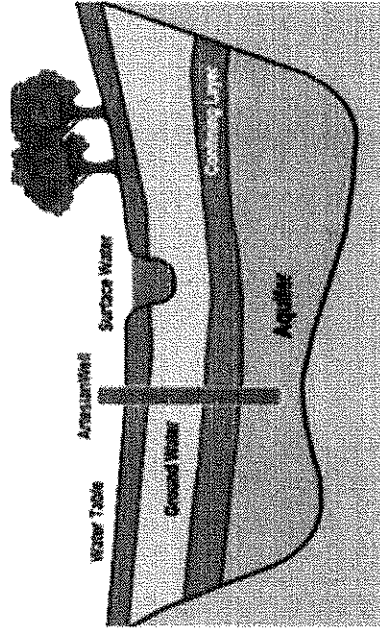
In the past the relations between the UK and the Middle East has been rocky. In 1973, due to the UK's support of Israel in the Yom Kippur War, many Middle Eastern oil producers stopped exporting oil to the UK and other countries. This caused oil prices to spike.

The Middle East boasts plentiful oil reserves, they make up 34% of the global output of oil. Investments in oil in the Middle Eastern countries means the process of extraction has become more efficient. This means oil is cheaper.

Countries such as the UK are big energy consumers and historically have been dependent on fossil fuels (oil, gas and coal). The UK had had to import more and more fossil fuels as its domestic (home) has reduced significantly.

There are many alternative energy sources available in the UK. For example, the government could invest in renewables such as wind power. This, in turn, is better for the environment. However, these technologies are often more expensive than fossil fuels such as oil.

Why is there conflict in the Middle East?



Water stress and drought

- Many countries are facing water stress including Saudi Arabia, Yemen and Oman.
- Water stress is where the demand for water exceeds the availability
- Exceeds means to go above
- Population growth and falling rainfall is causing an increase in water stress
- The level of water in underground aquifers is falling.
- In some places this decreasing by 6 metres per year
- An aquifer is an ancient supply of water deep beneath the ground
- Water stress will impact on the social and economic development of countries in the Middle East
- Farmers will not be able to grow crops or rear animals. This could lead to a rise in food prices and eventually food shortages.
- In the future water shortages could lead to conflict in the region.

Causes of war/conflict

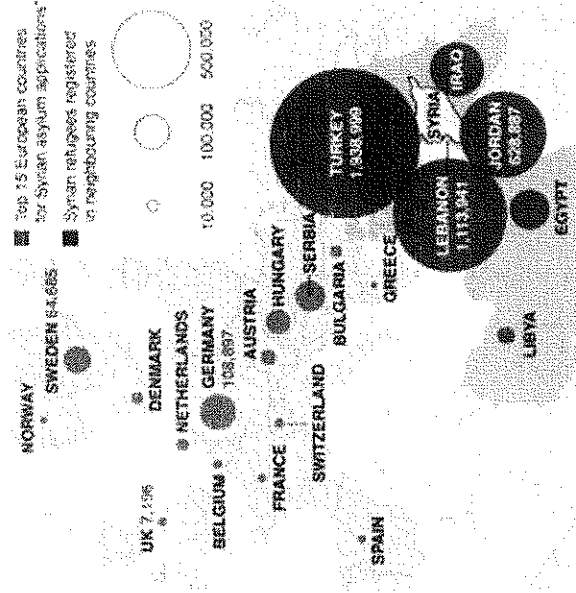
- Economic gain (to take control of another country's wealth)
- Territorial gain (to take control of land) •
- Nationalism (to prove your country is superior/better than another country)
- Civil war (fighting between different groups of people within the same country)
- Revolutionary war (when large numbers of people in a country tries to topple the government or leader of a country)

Syria – a broken state

Causes of the civil war in Syria

- Many people in Syria had been unhappy with President Assad for a long time. There was high unemployment and corruption.
- In 2011 15 school children were arrested for writing anti-government graffiti on a wall. People were unhappy with this and so started to protest.
- The government responded angrily opening fire and killing 4 protesters.
- People demanded that the president resign. Fighting broke out between the president's supporters and those against the president (called rebels)
- Russia and Iran became involved. Carrying out air strikes against cities held by rebel groups
- The USA has shipped weapons to support the rebels
- The UK and France carried out air strikes against government forces after they reportedly used chemical weapons against civilians (people not involved in the fighting).

Syrians in neighbouring countries and Europe



Year 9 Spring Term 2– Why is the Middle East an important world region?

Refugee – a person fleeing from war, persecution or natural disasters. They are protected by law.

People have to prove they are a refugee if they want a safe country to accept them

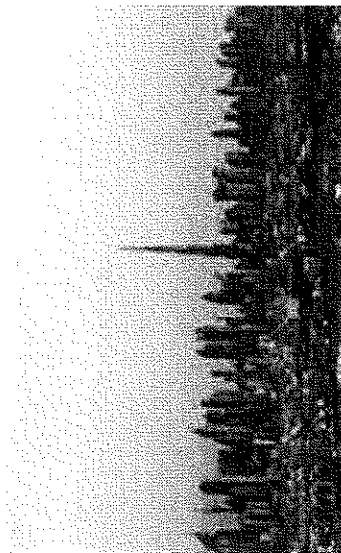
Asylum seeker – someone who claims to be a refugee, looking for a safe place to live. But whose case has not yet been proven.

Migrant – A migrant is a person who moves from one place to another. Refugees are a type of migrant. Another type is an economic migrant. Someone who moves to another country for a job there. Refugees are very different to economic migrants.

Refugee movements from Syria

- Around 6 million refugees have now left Syria. 2.7 million are in Turkey and 1 million are in Jordan.
- Germany, Bulgaria and Sweden are the European countries that have accepted the most refugees from Syria.
- Only 3000 Syrian refugees have applied for asylum (safety) in the UK in comparison to 160,000 in Germany.

Lesson 9: Dubai – Sustainable city in the sands



Dubai is greatly dependent on the availability of cheap energy, and its per capita consumption of energy is amongst the highest in the world.

Cheaply available oil is used to desalinize the water that irrigates the lush tropical landscapes implanted in its desert, and that supports the water-spending habits of its leisure tourism.

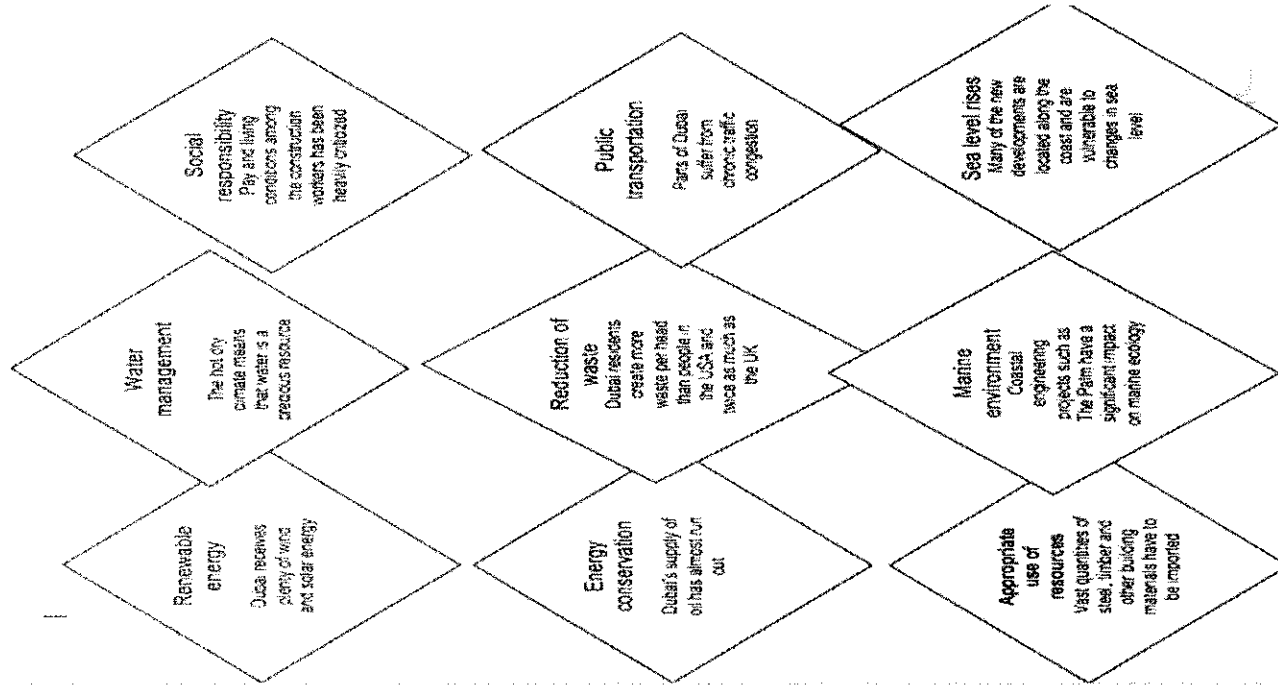
Cheaply available oil is used to air-condition its massive interior spaces during the gruelling hot summer months.

Cheaply available oil also is used to run motor vehicles in a city designed exclusively for automobiles (which increasingly are stuck in traffic) and not for pedestrians.

As global warming is becoming a more serious and real threat to the livelihood of the planet, there is a rising awareness that such a lifestyle that is dependent on an intensive consumption of fossil fuels is not sustainable in the long run.

The city's location requires an almost total dependency on medium-haul air travel to survive, most visitors coming from Europe and India.

The carbon consequences over time are unimaginable. Dubai is flying in the face of current sustainability trends.



AFRICAN-AMERICAN CIVIL RIGHTS MOVEMENT IN THE 1950s & 1960s

In what ways were African-Americans discriminated against?

Segregation:

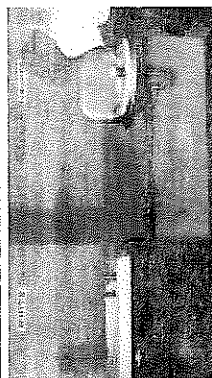
- After the end of the American Civil War in 1865, legislation was passed to end slavery. For the first time since their transportation to the nation, African-Americans were legally free. Further legislation followed soon after to make it illegal for people to be denied the vote or discriminated against because of the colour of their skin.
- However, African-Americans still faced hostility, bigotry and persecution.
- Although migration to the North and the West began soon after the Civil War ended, the great majority of African-Americans still lived in the Southern states where white superiority was enforced and where the slavery culture was still warmly remembered and embraced.
- In many of these states discrimination was not just commonplace - it was legal. States such as Alabama introduced a series of laws to keep the races separated and the black population under control. These measures were nicknamed the '**Jim Crow**' laws. Typical laws included:
 - Public transport waiting rooms were strictly segregated.
 - Places open to the public such as shops, hotels, cinemas, - theatres and libraries had to provide separate rooms and facilities for the different races.
 - Education. Legally, black children could be educated in separate schools, so long as the schooling was of an equal educational standard. In reality, schools for black Americans were far from equal, and the quality of education provided was inferior. In 1896, the Supreme Court upheld that this policy was legal and fair.
 - In most of the Southern states, inter-marriage between blacks and whites was illegal.

- Voting rights were very limited in the south, as Grandfather Clauses and literacy tests were introduced stop the registration of African-Americans.

- African-Americans largely did menial and poorly paid work—as sharecroppers or domestic servants.

Violence and intimidation:

- It was virtually impossible for African-Americans to challenge segregation in the South. To do so ran the risk of serious violence at the hands of white racists, particularly the Ku Klux Klan.
- In the years after World War I, there had been a major revival in the strength of the Ku Klux Klan, the most well known of the racist organisations. By the mid-1920s, the Klan had over 100,000 members across the South and had begun to extend its influence into Northern and Western states. Its campaigns of hate and violence intensified and Klan violence, beatings, burnings, brandings, attacks with acid and lynching increased rapidly.
- In 1919, 70 black Americans were lynched, 10 of them former soldiers.
- A major race riot was sparked in Chicago, when a black youth accidentally entered a 'whites only' beach. Race hatred was not simply confined to the South.

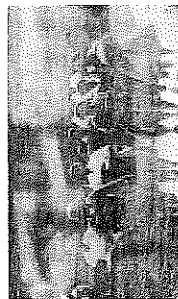
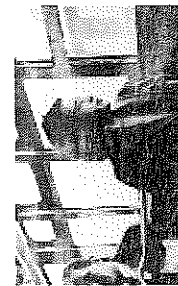


Civil Rights Movement during the 1950s

- a. **Brown vs Board of Education 1954:** On May 17, 1954, the Supreme Court ruled that "separate but equal" public schools for different races were unconstitutional, following a legal challenge by the National Association for the Advancement of Colored People (NAACP).
- b. **The murder of Emmett Till 1955:** Fourteen-year-old Emmett Till was visiting relatives in Money, Mississippi, on August 24, 1955, when he reportedly flirted with a white cashier at a grocery store. Four days later, two white men kidnapped Till, beat him and shot him in the head. The men were tried for murder, but an all-white, male jury acquitted them. The nation was shocked by these events.

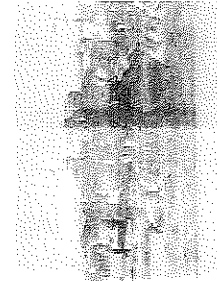
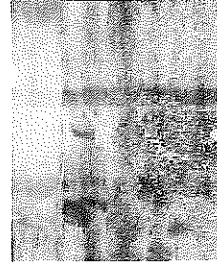
- c. **The Montgomery Bus Boycott 1955:** On December 1, 1955, four days before the boycott began, Rosa Parks, an African-American woman, refused to give up her seat to a white man on a Montgomery bus. She was arrested and fined. The boycott of public buses by African-Americans in Montgomery began on the day of Parks' court hearing and lasted 381 days. Montgomery's buses were then officially desegregated.

- d. **Little Rock, Arkansas 1957:** Nine black students enrolled at formerly all-white Central High School in Little Rock, Arkansas, in September 1957, testing Brown vs Board of Education. On September 4, 1957, the first day of classes at Central High, Governor Orval Faubus of Arkansas called in the state National Guard to bar the black students' entry into the school. Later in the month, President Dwight D. Eisenhower sent in federal troops to escort the "Little Rock Nine" into the school, and they started their first full day of classes on September 25.

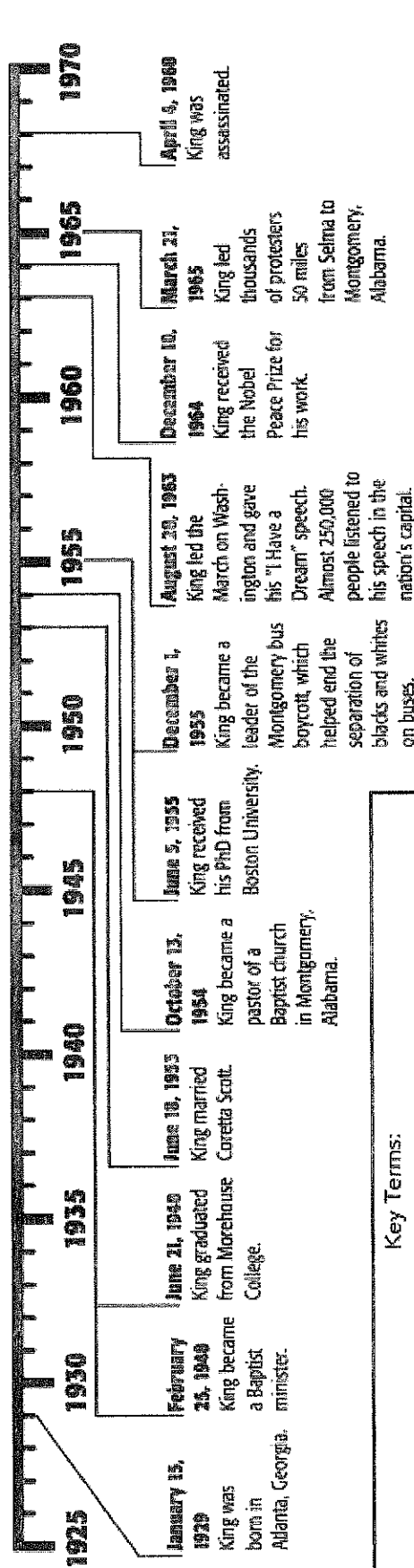


Civil Rights Movement during the 1960s

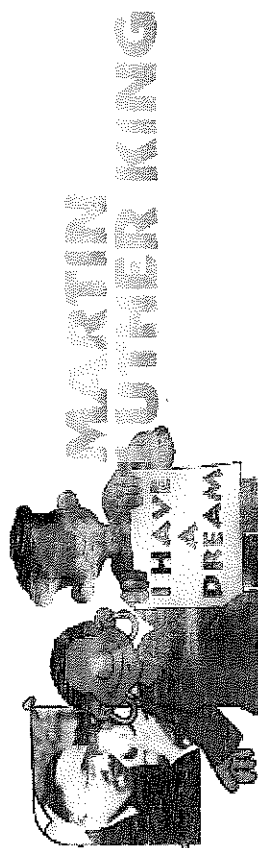
- a. **Sit-ins 1960:** Began at a lunch counter in Woolworth's in Greensboro when four students refused to move from whites-only seats. The movement rapidly spread and led to the formation of SNCC. Much desegregation followed.
- b. **Freedom Rides 1961:** Members of CORE rode the Greyhound bus route through the south to see if previously agreed desegregation was being followed. The bus was firebombed at Freedom Riders were viciously attacked at Birmingham.
- c. **Birmingham, Alabama 1963:** King and SCLC led a series of events in this highly-segregated city. Teenagers were used in some marches and were attacked by police using dogs and high-pressure fire hoses. King was arrested and locked up in prison. Contributed to passage of 1964 Civil Rights Act
- d. **March on Washington 1963:** 250,000 people, about one-fifth of them white, came to listen to speakers, including King's famous 'I Have a Dream' speech. Parts of the event were filmed live on TV.
- e. **Freedom Summer 1964:** Civil Rights workers went to Mississippi to help African-Americans to register to vote. Three of them were murdered, leading to an FBI investigation.
- f. **Selma 1965:** A march from Selma to Montgomery, led by King, to campaign for African-American voting rights. Stopped by police, who used great violence on protesters. Contributed to passage of 1965 Voting Rights Act.



Key Events in the life of Martin Luther King



Key Terms:	
Jim Crow	Laws passed in the southern states of the USA, which allowed segregation in public places.
Segregation	Dividing people by race in schools, transport, cinemas or anywhere where people gather together.
Supreme Court	Highest court of law in the United States
Grandfather Clauses	Only if your grandfather was registered to vote, could you register. Used to block African-Americans.
Literacy Tests	Very complex tests which African-Americans were forced to pass in order to register to vote.
Lynching	Murder of African-Americans, sometimes in public, for violating racial codes operating in the southern states.
Sharecropper	Farmer who rented land and paid for it though a share of the crop—often cotton.



Important Civil Rights Groups:	
NAAACP	National Association for the Advancement of Colored People
SCLC	Southern Christian Leadership Conference
CORE	Congress on Racial Equality
SNCC	Student Non-Violent Coordinating Committee

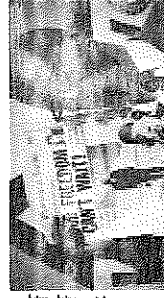
Why was Martin Luther King so significant?

- Martin Luther King Jr was an American campaigner for the fair and equal treatment of all people and an end to **racial discrimination**. He was the youngest ever person to win the **Nobel Peace Prize**.
- Martin Luther King's **father** was the pastor of the Ebenezer Baptist Church in Atlanta, Georgia, USA.
- He was awarded several university degrees and became a **Doctor of Divinity**. He decided he wanted to become a minister and delivered his **first sermon** at his father's church at the age of 18.
- In December 1955, in Montgomery Alabama, **Rosa Parks**, a black woman, was arrested for failing to give up her bus seat to a white man.
- King, having become a minister in the city, was appointed **president of the Montgomery Improvement Association** which led the boycott of the Montgomery bus services.
- The boycott lasted 381 days before the buses were desegregated.
- King believed in non violent protest. He was heavily influenced by Mahatma Gandhi. During the course of his campaign his house was **bombed**, he was **arrested** on numerous occasions and he was stabbed.
- King was a very powerful speech maker. His most famous **I Have A Dream speech** was delivered to an audience of 250,000 people during the March on Washington.
- King led other important events such as the Selma March and set up the Southern Christian Leadership Conference (SCLC)
- He was murdered in 1968 at the age of 39.
- His campaigns led to the end of segregation through the 1964 Civil Rights Act and also helped to bring about the 1965 Voting Rights Act.



Why was Malcolm X so significant?

- Malcolm X was born as Malcolm Little, but rejected his name because he said that it had been given to his ancestors when they were slaves.
- He joined Nation of Islam, led by Elijah Mohamed, when he was released from prison, having committed a number of burglaries as a young man.
- Nation of Islam argued that young African-Americans should become Muslims and should reject alcohol, tobacco, drugs etc. They should aim to control as much of their lives as possible. This was sometimes called Black Nationalism. Their ideas were popular in cities in the North and West.
- Malcolm X did not rule out violence in self-defence and used the phrase 'by any means necessary' to explain how African-Americans should aim to gain more rights. He was very critical of Martin Luther King, who he called an 'Uncle Tom' after a subservient slave in a famous novel.
- He also rejected the support and help of sympathetic white Americans.
- Although he was assassinated in 1965, having left the Nation of Islam, his ideas were very influential in what became known as the Black Power movement.
- Groups like SNCC and CORE became more radical under leaders like Stokely Carmichael, who often referred Malcolm X's ideas.
- The Black Panthers were a controversial group who also followed his ideas. They took part in shoot outs with police officers, but also provided breakfast clubs to children and free medical and legal advice to poor African-Americans.
- One of the greatest achievements of Black Power was to develop a sense of pride and interest in African culture & history among African-Americans.



Civil Rights Movement during the 1960s

TIME LINE

1960s Civil Rights

By: Mr Parkinson



What do I need to know?

1. What are civil rights?

2. In what ways were African-Americans discriminated against prior to the 1950s?

3. What were the key events of the civil rights campaign in the 1950s & 1960s?

4. How did each event lead to change in the rights available to African-Americans?

5. What do the key terms associated with this topic mean?

6. What were the main civil rights organisations?

7. How significant in bringing about change was Martin Luther King?

8. How significant in bringing about change was Malcolm X?

9. How much had African-Americans' lives improved by 1968?

History Knowledge Organiser HT1 – The Holocaust

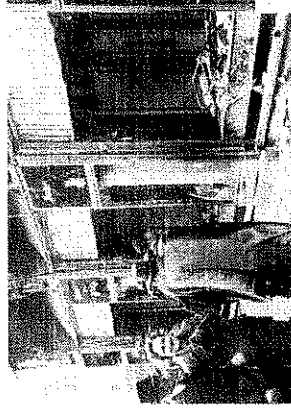
What is the Holocaust? Key definitions.

- The mass murder of Jews under the German Nazi regime during the period 1941-5. More than 6 million European Jews, as well as members of other persecuted groups, were murdered at concentration camps such as Auschwitz.
- Holocaust comes from Hebrew and means destruction or completely burnt. Many Jews use the term Shoah which comes from the Hebrew and means catastrophe.

Three Historical Reasons for Anti-Semitism:

1. Jews were blamed for the crucifixion of Christ.
2. Jews were blamed for the Black Death although many Jews were killed by the disease.
3. Jews were driven out of many Western European countries in the Middle Ages. They were expelled from England in 1290, from France in 1306 and 1394.

All of these actions made the Jews outliers from the rest of their community and therefore different and victims of prejudice and discriminations



Hitler's Persecution of the Jews

Hitler's dislike of the Jews was based on the economy. He blamed them for making Germany weak.

- 1st April 1933: Hitler's first action directly against the Jews was a Boycott of all Jewish businesses
- April 11, 1933 – Nazis issue a decree defining a non-Aryan as "anyone descended from non-Aryan, especially Jewish, parents or grandparents."
- May 10, 1933 – Burning of books in Berlin and throughout Germany.
- In Sept – Nazis establish Reich Chamber of Culture, then exclude Jews from the Arts.
- Summer 1935 Placards saying Jews not wanted displayed in resorts, public buildings, restaurants and cafes (these were removed during the 1936 Olympic Games).
- A massive, coordinated attack on Jews throughout the German Reich on the night of November 9, 1938 into the next day, has come to be known as Kristallnacht or The Night of Broken Glass.

The Rise of Hitler and the Nazis:

Nazis is an abbreviation for the National Socialist German Workers Party that existed from 1919-1945. Their leader was Adolf Hitler

Reasons for the Nazi's gaining support.

- Nazis had support from big business
- The rise in unemployment
- Hitler promised a stronger Germany and Hitler's use of propaganda
- The Nazis promised different things to different people: jobs to the unemployed, ideas to the young, pensions to the old
- Hitler blamed the Jews for the economic collapse and struggles of Germany

Hitler takes power in Germany:

July 1932 the Nazis were the largest party in the Reichstag. Hitler is made Chancellor on the 30th January 1933. Hitler starts his persecution of the Jews.



The Road to the Holocaust World War Two.

The Nazis invaded Eastern Europe and used The Einsatzgruppen who were special mobile killing squads created in 1939. In 1941 the Einsatzgruppen would move through Nazi controlled areas and round up Jews, gypsies, undesirables and disabled people. They rounded them up and shot them.

The Final Solution

The Wannsee Conference was a meeting of senior government held in the Berlin suburb of Wannsee on 20 January 1942. It was decided whereby most of the Jews of German-occupied Europe would be deported to occupied Poland and murdered.

The Death Camps: Auschwitz Birkenau, Chelmno, Treblinka, Belzec, Sobibor, Majdanek in the far east of Poland.

The death camps used gas chambers to murder Jews and others on an industrial scale. Jews were brought from all over Europe. Selection happened when you arrived. Women with children, the Elderly and the unfit went straight to the gas chambers. The Jews were told they were being taken to showers but the showers were in fact gas chambers. To the camps usually 14 years of age upwards and if they were fit and healthy as well as children taken from parents (if they were lucky) were taken to showers to clean them up. The showers were either really hot or extremely cold. They would then be tattooed with a number their hair shaven and given a uniform.

The Holocaust is significant as it is a point in human history where religious discrimination and overt racism led to the deliberate attempt to wipe a single group of human beings from the face of the planet by mass murder. This genocide can never be forgotten as it stands as an example of what can go wrong when hate and prejudice go unchallenged.

Practices: Christianity



Worship

Liturgical – Follows a set routine e.g. RC
Non-liturgical – Does not follow a set routine

Charismatic – informal; spirit-inspired

Rosary – a string of beads with a crucifix attached

Meditation – thoughtfulness, focused on a religious truth

Quaker meetings – Completely informal, with no leader or structure

The Bible – regardless of the type of worship, it will always have a focus on the Bible

Private – worshipping alone

Prayer – Communicating with God

Why is worship important?

- It brings a sense of **togetherness** as a community
- It makes a person **feel closer** to God
- It is **peaceful** – allowing for prayer and meditation
- It is an **external expression** of their faith
- Christians **praise** God as the eternal Being and source of everything that exists

Pilgrimage

A pilgrimage is a visit to a place regarded as holy for the believer. Often, the journey is also special. Pilgrimage has always played an important role in the history of Christianity, though it is not a compulsory duty and many today see no need to go on pilgrimage.

Some examples of Christian places of pilgrimage are: **Lourdes**, **Iona**, the Holy Land (Israel) and Canterbury.

Prayer

Jesus spoke about prayer on a number of occasions. Some Christians follow set prayer (such as the **Lord's prayer** (which Jesus taught his disciples), whereas others make them more personal.

There different types of prayer:

- Thanksgiving
- Adoration
- Confession
- Petition
- Intercession

Sacraments

A **sacrament** = an outward and visible sign of an inward and spiritual grace

Protestant Churches = only **2** sacraments: Baptism and Eucharist.

RC & Orthodox Churches = **7** sacraments: Baptism, Eucharist, Confirmation, Reconciliation, Marriage, Holy Orders, Anointing of the Sick.

Baptism

Jesus was baptised by John and, during the baptism, Jesus experienced the Holy Spirit entering his life and heard God's assurance that he was the Son of God.

Just before his ascension, Jesus told his disciples to: "*Go and make disciples of all nations, **baptising** them in the name of the Father, Son and Holy Spirit*". Baptism was a rite of **initiation** into the community right from the start and there are many references to baptism throughout the NT.

Eucharist

The Eucharist is celebrated by nearly all Christian denominations and has many names, such as Holy Communion. The central features are the same: the connection with Jesus' Last Supper, the giving of thanks for the bread and wine (consecration) and using Jesus' words at the last supper. RC Christians believe in **transubstantiation** – the bread & wine literally turns into the body & blood of Christ. Whereas Protestants do not believe this.

"Mutual respect for and tolerance of those with different faiths and beliefs and for those without faith"

The Church in the local community

The Church has always been involved in caring for others. For example, in the Middle Ages the monasteries provided education, hospitality for travellers and treatment for the sick. In the 20th century, a London church set up the first **Samaritans** phone service for those feeling suicidal. In the Parable of the Sheep & the Goats, Jesus told his disciples that whatever they did or failed to do for someone, however insignificant the deed or situation, they did/or failed to do, for Jesus.

One way in which Christians out their faith into action is through food banks and street pastors.

Key organisations (research these!)

- **Corrymeela** – reconciliation & ecumenism
- **Open Doors** – Supports persecuted Christians
- **Spring Harvest** – Mission & evangelism
- **Community of the cross of nails**
- **CAFOD** – Catholic Agency for Overseas Development
- **Tearfund**
- **Christian Aid**

La famille	Family members
les parents	parents
le père	father
la mère	mother
le beau-père	stepfather/father-in-law
la belle-mère	stepmother/mother-in-law
le mari	husband
la femme	wife
les enfants	children
le fils	son
la fille	daughter
le frère	brother
la sœur	sister
le demi-frère	half brother/stepbrother

Les adjectifs de personnalité	Personality adjectives
Il/Elle est ...	He/She is ...
agacant(e)	annoying
arrogant(e)	arrogant
amusant(e)	amusing/funny
bavarde	talkative/chatty
charmant(e)	charming
content(e)	happy
fort(e)	strong

Ma description physique	My physical description
J'ai les cheveux ...	I have ... hair
courts/longs	short/long
raides/bouclés/frisés	straight/curlly
noirs/bruns/blonds	black/brown/blond
roux/gris/blancs	red/grey/white
J'ai les yeux ...	I have ... eyes
bleus/verts	blue/green
gris/marron	grey/brown

En ville	In town
la boîte de nuit	night club
le bowling	bowling alley
le café	cafe
le centre commercial	shopping centre
le cinéma	cinema
les magasins	shops
la patinoire	ice rink

Quand?	When?
aujourd'hui	today
demain	tomorrow
ce/demain matin	this/tomorrow morning
ce/demain après-midi	this/tomorrow afternoon

Les amis	Friends
l'ami (m)/le copain	(male) friend
l'amie (f)/la copine	(female) friend
le petit ami/le petit copain	boyfriend
la petite amie/la petite copine	girlfriend
Je retrouve mes amis au parc.	I meet up with my friends in the park.
Je traîne en ville avec mes copines.	I hang out in town with my (female) friends.
Je chatte en ligne avec ma meilleure copine.	I chat online with my best (female) friend.

la demi-sœur
le beau-frère
la belle-sœur
les grands-parents
le grand-père
la grand-mère
les petits-enfants
le petit-fils
la petite-fille
l'oncle (m)
la tante
le cousin/la cousine

impatient(e)
impolite
indépendant(e)
intelligent(e)
marquant(e)
méchant(e)
têt(e)

J'ai ...
des lunettes
des boutons
une moustache/une barbe
Je suis ...
petite/grande(e)
de taille moyenne
mince/gros(se)

la piscine
la plage
le théâtre
dans
derrière
devant
entre

ce/demain soir
lundi matin
samedi soir

Avec mon petit ami, j'écoute de la musique.
Je passe chez ma petite copine.
On rigole bien ensemble.
On regarde un film ou des clips vidéo.
On joue au foot ou au basket ensemble.
On discute de tout.
On mange ensemble au fast-food.

half-sister, step-sister
brother-in-law
sister-in-law
grandparents
grandfather
grandmother
grandchildren
grandson
granddaughter
uncle
aunt
cousin

impatient
impolite
independent
intelligent
funny
nasty/mean
stubborn, pig-headed

I have ...
glasses
spots
a moustache/a beard
I am ...
short/tall
of average height
thin/fat

swimming pool
beach
theatre
in
behind
in front of
between

this/tomorrow evening
on Monday morning
on Saturday night

I listen to music with my boyfriend.
I go to my girlfriend's house.
We have a good laugh together.
We watch a film or music videos.
We play football or basketball together.
We talk about everything.
We eat together at a fast-food restaurant.

Je pense que ...
Pour moi, ...
Une(e) honnête ami(e) est ...
compréhensif/ive
cool
drôle
fidèle
généreux/ euse
gentil(ite)
honnête
modeste
optimiste

Les règlements en famille
Je m'entends bien avec ...
Je me dispute avec ...
Je me chamaille avec ...
Je m'amuse avec ...
Je m'occupe de ...
le frère aîné/cadet
la sœur aînée/cadette

Je vais ...
aller à un match/au bowling
aller au cinéma/à la piscine

Quand?
Avec qui?
On y va comment?

J'ai contacté un copain/une copine.
J'ai quitté la maison.
J'ai raté le bus.
Je suis allé(e) en ville.
J'ai écouté de la musique.
J'ai retrouvé mon copain/ma copine.

Comment s'appelle la personne que tu admires?
Mon héros s'appelle ...
Mon héroïne s'appelle ...
Mon modèle s'appelle ...
C'est qui?
C'est un pilote de Formule 1.
C'est un scientifique.
C'est une actrice.
Fais-moi sa description physique.

Il/Elle est petit(e)/gros(se), etc.
Il/Elle a les cheveux bruns, etc.
Quelle est sa personnalité?

Les mots essentiels
très
assez
mais
ou
hier

patient(e)
sensible
sympa
Une(e) bon(n)e ami(e) ...
écoute mes problèmes/
mes secrets
discute de tout avec moi
aide tout le monde
accepte mes imperfections
respecte mes opinions
a les mêmes centres d'intérêt
que moi
a le sens de l'humour

Il/Elle est/a (s)ar/sensible ...
dynamique
égoïste
jaloux/-euse
sévère
timide
travailleur/ euse

voir un spectacle
faire du patin à glace/du skate
faire les magasins
Jouer à des jeux vidéo
Tu veux venir?

On se retrouve où?
On se retrouve à quelle heure?

J'ai discuté avec mon copain/ma copine.
J'ai mangé un sandwich.
J'ai acheté des vêtements.
C'était super.
J'ai passé une très bonne journée.

Il/Elle est ...
travailleur/ euse/creative/ etc.
Pourquoi est-ce que tu admires cette personne?
J'admire (Stromae/Malala, etc.)
car il/elle ...
a travaillé très dur
a joué dans beaucoup de films
a gagné beaucoup de courses
a donné de l'argent aux bonnes œuvres
a lutté contre ses problèmes

J'aimerais être comme lui/elle.

d'abord
puis
ensuite
après
plus tard
le soir

parent
sensible
nice
A good friend ...
listens to my problems/secrets
talks about everything with me
helps everyone
accepts my faults
respects my opinions
has the same interests as me
has a sense of humour

He/She is/looks/seems ...
lively
selfish
jealous
strict
shy
hard-working

to see a show
to go ice skating/skateboarding
to go shopping
to play video games
Do you want to come?

Where shall we meet?
At what time shall we meet?

I talked to my friend.
I ate a sandwich.
I bought some clothes.
It was great.
I had a very good day.

He/She is ...
hard-working/creative, etc.
Why do you admire this person?
I admire (Stromae/Malala, etc.)
because he/she ...
worked/hus worked very hard
acted/hes acted in lots of films
won/has won lots of races
gave/has given money to good causes
fought/has fought his/her problems
I would like to be like him/her.

first of all
then
next
afterwards
later
in the evening

OPINIONS

1 I like (that) □ j'aime (ça)
I don't like (that) □ je n'aime pas (ça)
I love (that) □ j'adore (ça)
I hate (that) □ je déteste (ça)
I do (not) like that □ ça (ne) me plaît (pas)
that does (not) interests me □ ça (ne) m'intéresse (pas)

2 because □ parce que
because □ car
since □ puisque

3 according to me □ selon moi / d'après moi
as far as I am concerned □ en ce qui me concerne
in my opinion □ à mon avis
I believe that □ je crois que
I reckon □ j'estime que
I think that □ je pense que
I find that □ je trouve que

4 one/you/we can (not) □ on (ne) peut (pas)
one/you/we must (not) □ on (ne) doit (pas)
one/you/we (don't) want □ on (ne) veut (pas)
we can (not) □ nous (ne) pouvons (pas)
we must (not) □ nous (ne) devons (pas)
we (don't) want □ nous (ne) voulons (pas)

5 you must (not) □ il (ne) faut (pas)
you should (not) □ il (ne) faudrait (pas)

6 one/you/we could (not) □ on (ne) pourrait (pas)
one/you/we should (not) □ on (ne) devrait (pas)
one/you/we would (not) want □ on (ne) voudrait (pas)

7 we could (not) □ nous (ne) pourrions (pas)
we should (not) □ nous (ne) devrions (pas)
we would (not) want □ nous (ne) voudrions (pas)

8 I am in favour of □ je suis en faveur de
I am for □ je suis pour
I'm against □ je suis contre
I am convinced that □ je suis convaincu(e) que
I am convinced that □ je suis persuadé(e) que

9 it is necessary that □ il faut que (+ subjunctive)
it would be necessary that □ il faudrait que (+ subj.)
it is important that □ il est important que (+ subj.)

CONNECTIVES

and □ et
and also □ et aussi / et en plus
and then □ ensuite / et puis
and afterwards □ et après
but □ mais
or □ ou
with □ avec

because □ parce que/car
fortunately □ heureusement
however □ cependant / toutefois / par contre
moreover/furthermore/besides □ de plus

after / before □ après / avant
also □ aussi / également
and as result □ et par conséquent
finally □ finalement
first □ d'abord
then □ ensuite
therefore □ donc

considering that □ étant donné que
having said that □ ceci dit
nevertheless □ néanmoins
seeing that □ vu que

apart from □ à part
as ... as □ aussi ... que
less ... than □ moins ... que
more ... than □ plus ... que
on the one hand ... □ d'un côté ...
but on the other hand ... □ mais d'un autre côté ...
unfortunately □ malheureusement

after having □ après avoir (+ Past Participle)
before □ avant de (+ Infinitive)
what I find interesting is (that) □ ce que je trouve intéressant, c'est que ...
what I love is (that) □ ce que j'adore, c'est que ...

what I liked was (that) □ Ce qui m'a plu, c'était (que) ...
what I did not like was (that) □ Ce qui ne m'a pas plu, c'était (que) ...

before □ avant que (+ Subjunctive)
so that □ afin que (+ Subjunctive)
so that □ pour que (+ Subjunctive)

TIME MARKERS

last Monday □ lundi dernier
last month □ le mois dernier
last week □ la semaine dernière
last weekend □ le week-end dernier
last year □ l'année dernière
next Monday □ lundi prochain
next month □ le mois prochain
next week □ la semaine prochaine
next weekend □ le week-end prochain
next year □ l'année prochaine
the next day □ le lendemain
this afternoon □ cet après-midi
this morning □ ce matin
today □ aujourd'hui
tomorrow □ demain
tonight □ ce soir
two days ago □ il y a deux jours
two weeks ago □ il y a deux semaines
two months ago □ il y a deux mois
two years ago □ il y a deux ans
yesterday □ hier

c'est □ it is
c'était □ it was
ce sera □ it will be
ce serait □ it would be

il y a □ there is/are
il y avait □ there was/were
il y aura □ there will be
il y aurait □ there would be

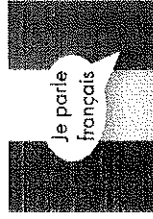
1un 2deux 3trois
4quatre 5cinq 6six
7sept 8huit 9neuf
10dix 11onze
12douze 13treize
14quatorze 15quinze
16seize 17dix-sept
18dix-huit 19dix-neuf
20vingt
30rente 40quarante
50cinquante 60soixante ...

QUESTION WORDS

How
Comment
How many/much
Combien
What
Qu'est-ce que / Que
What time
A quelle heure
When
quand
Where
Où
Which
Quel(le)(s)
Who
Qui
Why
Pourquoi

INTENSIFIERS

a bit □ un peu
a lot □ beaucoup
almost □ presque
completely □ complètement
quite □ assez
rarely □ rarement
rather □ plutôt
really □ vraiment
too □ trop
totally □ totalement
very □ très



FREQUENCY PHRASES

always □ toujours (straight after verb)
every day □ tous les jours
every monday □ tous les lundis
every year □ tous les ans / chaque année
from time to time □ de temps en temps
in general / generally □ en général / généralement
never □ ne ... jamais
often □ souvent
on Mondays / on Tuesdays □ le lundi / le mardi
once a week □ une fois par semaine
two times a week □ deux fois par semaine
sometimes □ parfois / quelquefois
usually / normally □ d'habitude / normalement

NEGATIVE STATEMENTS

I do **not** play football. □ je **ne** joue **pas** au foot.
I **never** play football. □ je **ne** joue **jamais** au foot.
I **don't** play football **anymore**. □ je **ne** joue **plus** au foot.
I **don't** play football **nor** rugby. → je **ne** joue **ni** au foot **ni** au rugby.
I **don't** play **anything**. → je **ne** joue **à rien**.
I **only** play football. → je **ne** joue **qu'**au football.
No one plays football. → **personne** **ne** joue au foot.

Spanish -Year 9 Knowledge Organiser

Ya sé...

~~Ya sé...~~ – Mi gente



- 1 To talk about socializing and family
- 2 To describe people
- 3 To talk about social networks



- 4 To make arrangements
- 5 To use present continuous
- 6 To create dialogues

Key grammar

G Possessive adjectives

Most possessive adjectives have two forms, singular and plural:

	singular	plural
my	mi	mis
your (singular)	tu	tus
his/her/its	su	sus
our	nuestro/nuestra	nuestros/nuestras
your (plural)	vuestro/vuestra	vuestros/vuestras
their	su	sus

Nuestro (our) and vuestro (your – plural) also have masculine and feminine forms:

nuestros hermanos	our brothers
vuestras hermanas	your sisters

G Poder and querer

Poder (to be able to / 'can') and **querer** (to want) are stem-changing verbs usually followed by the infinitive.

puedo	I can	quiero	I want
puedes	you can	quieres	you want
puede	he/she can	quiere	he/she wants
podemos	we can	queremos	we want
podéis	you can	queréis	you want
pueden	they can	quieren	they want

G The present continuous

	estar (to be)	present participle
(yo)	estoy	
(tú)	estás	mirando
(él/ella/usted)	está	bebiendo
(nosotros/as)	estamos	escribiendo
(vosotros/as)	estáis	
(ellos/ellas/ustedes)	están	

To form the present participle, take the infinitive, remove the **-ar**, **-er** or **-ir** and add the endings: **-ando**, **-iendo**, **-iendo**.

Estoy buscando canciones.	I am looking for songs.
Está jugando al fútbol.	He/She is playing football.

Irregular present participles include: leer → leyendo, dormir → durmiendo

G Para + Infinitive

Use **para** to mean 'in order to...' or 'for -ing'. It is followed by the infinitive.

Uso YouTube **para pasar el tiempo**.

I use YouTube **in order to** pass the time.

Es una aplicación muy buena **para descargar música**.

It is a very good app **for downloading** music.

Key topic questions

¿Qué aplicaciones usas? – What apps do you use?

¿Qué estás haciendo? – What are you doing?

¿Quieres salir conmigo? – Do you want to go out with me?

¿Cómo es? – What is he/she like?

¿Cómo es de carácter? – What is he/she like as a person?

¿Por qué te gusta Twitter? – Why do you like Twitter?

Vocabulary

¿Qué aplicaciones usas? Uso... para... subir y ver videos compartir fotos pasar el tiempo organizar las salidas con mis amigos contactar con mi familia descargar música chatear aprender idiomas controlar mi actividad física publicar mensajes Es / No es... cómodo/a	What apps do you use? I use... (in order) to... upload and watch videos share photos pass the time organise to go out with my friends contact my family download music chat learn languages monitor my physical activity post messages It is / It isn't... handy / convenient	divertido/a peligroso/a práctico/a rápido/a fácil de usar popular útil gratis adictivo/a mi red social preferida una pérdida de tiempo la mejor app Estoy enganchado/a a...	fun dangerous practical quick easy to use popular useful free addictive my favourite social network a waste of time the best app I am hooked on...
¿Qué estás haciendo? Estoy... tocando la guitarra hablando por teléfono jugando con mi móvil comiendo pizza tomando el sol esperando a... viendo una peli	What are you doing? I am... playing the guitar talking on the phone playing on my phone eating pizza sunbathing waiting for... watching a film	leyendo durmiendo escribiendo pensando en salir actualizando mi página de Facebook editando mis fotos	reading sleeping writing thinking of going out updating my Facebook page editing my photos
¿Quieres salir conmigo? No puedo porque... está lloviendo tengo que... visitar a (mi abuela) cuidar a (mi hermano) quiero... subir mis fotos	Do you want to go out with me? I can't because... It's raining I have to... visit (my grandmother) look after (my brother) I want... to upload my photos	quedarme en casa dar una vuelta ¡Qué penal! ¿A qué hora quedamos? ¿Dónde quedamos? En la plaza Mayor. Vale	to stay at home to go for a wander What a shame! What time shall we meet? Where shall we meet? In the main square. OK
¿Cómo es? Tiene los ojos... azules verdes marrones grises grandes pequeños Tiene el pelo... moreno castaño rubio rojo corto largo rizado liso ondulado	What is he/she like? He/She has... eyes blue green brown grey big small He/She has... hair dark-brown mid-brown, chestnut blond red short long curly straight wavy	Tiene... pecas Lleva... gafas barba bigote Es... alto/a bajo/a delgado/a gordito/a gordo/a calvo/a moreno/a rubio/a castaño/a pelirrojo/a No es ni gordo/a ni delgado/a	He/She has... freckles He/She wears... glasses a beard a moustache He/She is... tall short slim chubby fat bald dark-haired fair-haired brown-haired red-haired He/She is neither fat nor thin
La familia el padre la madre el padrastro la madrastra el hermano la hermana el hermanastro la hermanastra el abuelo la abuela el tío la tía	Family father mother step-father step-mother brother sister step-brother step-sister grandfather grandmother uncle aunt	el primo la prima el sobrino la sobrina el marido la mujer el hijo la hija el nieto la nieta mayor / menor	male cousin female cousin nephew niece husband wife son daughter grandson granddaughter older / younger
¿Cómo es de carácter? Como persona, es... optimista pesimista trabajador(a) perezoso/a hablador(a)	What is he/she like as a person? As a person, he/she is... optimistic pessimistic hard-working lazy chatty	tímido/a divertido/a serio/a gracioso/a generoso/a fiel	shy fun serious funny generous loyal

Urdu- Y-9— Knowledge Organiser Theme 1—SPR 2



Subject	Helping Verb	Object
He	is	Unwell.

English Sentence Structure



Helping Verb	Object	Subject
ہے۔	بیمار	وہ

Urdu Sentence Structure

Future Tense (کام کی گئے)	
I'll go	میں۔۔۔ جاؤں گا / گی
I'll do	میں۔۔۔ کروں گا / گی
I'll look -see	میں۔۔۔ دیکھوں گا / گی
I'll play	میں۔۔۔ کھیلوں گا / گی
I'll eat	میں۔۔۔ کھاؤں گا / گی
I'll drink	میں۔۔۔ پیوں گا / گی
I'll want	میں۔۔۔ چاہوں گا / گی
I'll work	میں۔۔۔ کام کروں گا / گی
I'll travel	میں۔۔۔ سفر کروں گا / گی

Past Tense (تھا۔ تھی۔ تھے)	
I went	میں۔۔۔ گیا تھا / گئی تھی
I did	میں نے۔۔۔ کیا تھا / کی تھی
I saw	میں نے۔۔۔ دیکھا تھا / تھی
I played	میں۔۔۔ کھیلا تھا / کھیلی تھی
I ate	میں نے۔۔۔ کھایا تھا / کھائی تھی
I drank	میں نے۔۔۔ پیا تھا / پی تھی
I wanted	میں نے۔۔۔ چاہا تھا
I worked	میں نے۔۔۔ کام کیا تھا
I travelled	میں نے۔۔۔ سفر کیا تھا

Present Tense (ہوں۔ ہیں۔ ہیں)	
I go	میں۔۔۔ جاتا ہوں
I do	میں۔۔۔ کرتا ہوں
I see -look	میں۔۔۔ دیکھتا ہوں
I play	میں۔۔۔ کھیلتا ہوں
I eat	میں۔۔۔ کھاتا ہوں
I drink	میں۔۔۔ پیتا ہوں
I want	میں۔۔۔ چاہتا ہوں
I work	میں۔۔۔ کام کرتا ہوں
I travel	میں۔۔۔ سفر کرتا ہوں

Referring to things	
A thing	ایک چیز
This / It is	یہ
That	وہ
Something	کچھ
(An) Other	دوسری (دوسرا)
A lot (of)	بہت سارا۔ ساری
(a) little	تھوڑا۔ تھوڑی
Very	بہت
All - Everything	سب کچھ۔ تمام
Too (much)	بھی۔ زیادہ۔ بہت

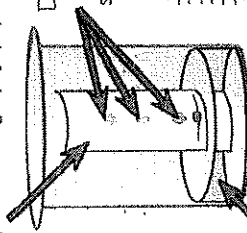
Paper Chromatography

Two Phases of Chromatography

CHROMATOGRAPHY — an analytical method used to separate the substances in a mixture. It can be used to identify the substances.

- 1 **STATIONARY PHASE** — where the molecules can't move.
e.g. chromatography paper

Different components of the sample separate out.
Amount of separation depends on how each substance is distributed between the two phases.



A pure substance will only ever form one spot in any solvent.

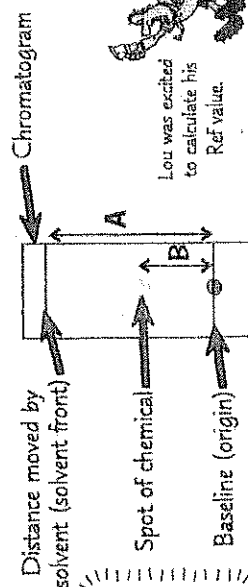
- 2 **MOBILE PHASE** — where the molecules can move (the solvent).
e.g. water or ethanol

Substances that are more soluble in the mobile phase or less attracted to the stationary phase move further.

R_f Values

R_f VALUE — the ratio between the distance travelled by the dissolved substance and the distance travelled by the solvent.

$$R_f = \frac{\text{distance travelled by substance (B)}}{\text{distance travelled by solvent (A)}}$$



The R_f value for a compound changes in different solvents, so the number and position of spots can also change in different solvents.



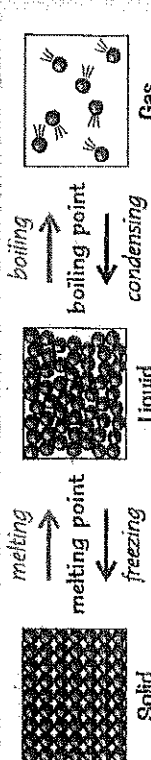
States of Matter and Changing State

Particle Theory

Particle Diagram	Solid	Liquid	Gas
Particle Arrangement	Regular	Random	Random
Particle Movement	Fixed position, vibrate	Move around each other	Move quickly in all directions
Particle Closeness	Very close together	Close together	Far apart

Atoms don't have the bulk properties of materials.

Changes of State



Melting and Boiling:

Substance heats up → Particles gain energy → Forces between particles weaken → Particles break free from position

Condensing and Freezing:

Substance cools down → Particles lose energy → Forces between particles form → Particles held in position

The amount of energy needed to change state is linked to the strength of forces between particles. Stronger forces mean a higher melting and boiling point.

State Symbols

(s)	(l)	(g)	(aq)
solid	liquid	gas	aqueous

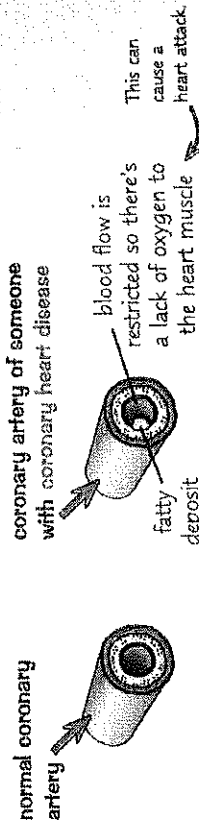


'Aqueous' means dissolved in water.

Cardiovascular Disease

Coronary Heart Disease

CARDIOVASCULAR DISEASES — diseases of the heart or blood vessels.
e.g. coronary heart disease:



Five Treatments for Cardiovascular Disease

Treatment	Advantages	Disadvantages
1 Statins 	Reduce the amount of LDL cholesterol in the blood, which slows down the formation of fatty deposits.	- Need to be taken long-term. - Can have negative side effects.
2 Stent (tube put in coronary artery) fatty deposit squashed	- Keeps coronary arteries open for a long time. - Recovery time from surgery is pretty quick.	- Surgery can cause bleeding and infection. - Donor hearts or valves can be rejected by the immune system. - Artificial devices can lead to thrombosis (blood clots in blood vessels).
3 Heart transplant (heart from a donor)	- Can treat heart failure. - Donor hearts work better than artificial ones.	Can be used while waiting for a donor heart or while the heart is healing.
4 Artificial heart 	Can be used while waiting for a donor heart or while the heart is healing.	Can treat severe valve damage (e.g. stiff valves that don't open properly or leaky valves).
5 Replacement heart valves — biological or mechanical		

Health and Disease

Health

HEALTH — the state of physical and mental wellbeing.

Diseases can cause ill health.

These three things can also affect health:

- 1 diet
- 2 stress
- 3 life situation, e.g. access to health care

Two Types of Disease

1 COMMUNICABLE DISEASE — a disease that can spread from person to person or between animals and people.



2 NON-COMMUNICABLE DISEASE — a disease that cannot spread between people or between animals and people.



Four Ways That Diseases May Interact

Initial problem	Issue that can be made more likely
1 disorder affecting immune system	communicable diseases
2 infection by certain viruses	certain cancers
3 pathogen infection that causes an immune system reaction	allergic reactions (e.g. rashes or asthma)
4 severe physical health problems	mental health issues (e.g. depression)

Cost of Non-Communicable Diseases

Human cost —

Tens of millions of people die from non-communicable diseases each year. Those living with these diseases may have a poorer quality of life and a shorter life-span.



Financial cost —

Researching and treating diseases costs health organisations (e.g. the NHS) loads of money.

Those with diseases may not be able to work, which can affect family finances as well as the country's economy.



Energy Stores, Transfers and Systems

Eight Types of Energy Store

- Kinetic
- Gravitational potential
- Elastic potential
- Electrostatic
- Thermal (internal)
- Chemical
- Magnetic
- Nuclear

Four Types of Energy Transfer

- Mechanical (a force doing work)
 - Electrical (work done by moving charges)
 - Heating
 - Radiation (e.g. light or sound)
- Work done = energy transferred.

Energy Transfers in Five Different Systems

SYSTEM — a single object or a group of objects.

- Arm throwing ball up
Chemical energy store of arm.
force exerted by arm does work
Kinetic energy store of ball and arm.
- Ball falling
Gravitational potential energy store of ball.
gravitational force does work
Kinetic energy store of ball.
- Brakes applied to car wheels
Kinetic energy stores of wheels.
Thermal energy does work stores of surroundings.
- Car hitting tree
Kinetic energy store of car.
normal contact force does work
Other energy stores — e.g. elastic potential energy stores of car and tree.
- Kettle's heating element and water
Thermal energy store of kettle's heating element.
energy transferred electrically
Thermal energy store of water.
energy transferred by heating

Energy, Power and Efficiency

Kinetic Energy

$$E_k = \frac{1}{2}mv^2$$

kinetic energy (J)
mass (kg)
speed (m/s)

Gravitational Potential Energy

$$E_p = mgh$$

gravitational potential energy (J)
mass (kg)
height (m)
gravitational field strength (N/kg)

Conservation of Energy and Specific Heat Capacity

CONSERVATION OF ENERGY — energy can be transferred usefully, stored or dissipated but not created or destroyed.

Energy transferred usefully (by heating) to thermal energy store of pot, increasing its temperature.

Some energy dissipated as energy transferred to thermal energy stores of surroundings.

In all systems, energy is dissipated (wasted) to a store that's not useful (usually thermal).

SPECIFIC HEAT CAPACITY — the amount of energy needed to raise the temperature of 1 kg of a substance by 1 °C.

CLOSED SYSTEM — no energy (or matter) is transferred in or out of the system, so there is no overall change in total energy.

Power

POWER — rate of energy transfer (or rate of doing work).

One watt (W) = one joule of energy transferred per second.

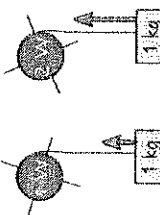
$$P = \frac{E}{t}$$

power (W)
energy transferred (J)
time (s)

$$P = \frac{W}{t}$$

power (W)
work done (J)
time (s)

2 W motor transfers more energy per second than 1 W motor, so lifts mass faster.



Efficiency Equations

$$\text{Efficiency} = \frac{\text{Useful output energy transfer}}{\text{Total input energy transfer}}$$

No device is 100% efficient. Multiply by 100 to get a percentage.

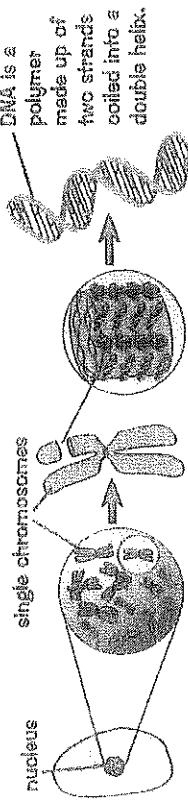
$$\text{Efficiency} = \frac{\text{Useful power output}}{\text{Total power input}}$$

Revision efficiency can be increased with tea and biscuits (probably).

DNA

Genetic Material

Deoxyribonucleic Acid — the chemical a cell's nuclear genetic material is made from.



CHROMOSOMES — long molecules of DNA that normally come in pairs.

Humans have 23 pairs. The 23rd pair carries genes which decide a person's sex.



Genomes

GENOME — a small section of DNA found on a chromosome.

Each gene codes for a particular sequence of amino acids, which are put together to make a specific protein.

20 different amino acids



1000s of possible proteins



GENOME — an organism's entire set of genetic material.

The complete human genome has been worked out.

Genes linked to diseases can be identified.

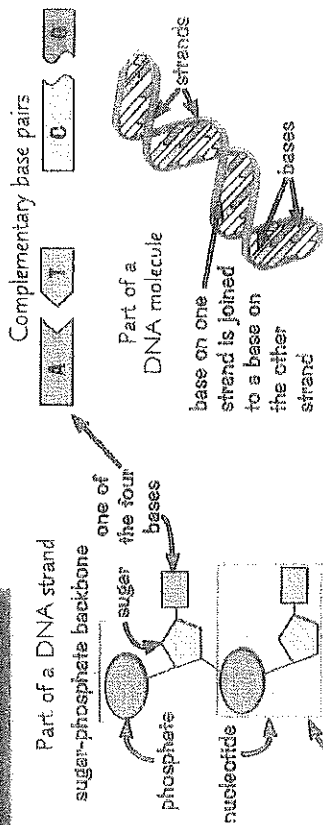
This helps us better understand inherited diseases, so we can develop effective treatments.

Tiny differences in people's genomes can be studied.

This helps us trace the migration patterns of past human populations.

DNA, Proteins and Mutations

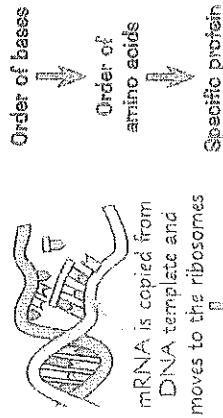
The Structure of DNA



These repeating nucleotide units make up the DNA polymer.

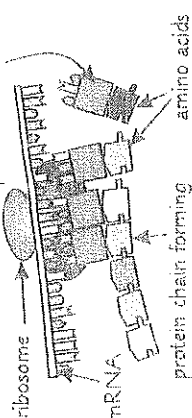
Protein Synthesis

Each amino acid is coded for by a sequence of three bases.



Proteins are synthesised on ribosomes.

carrier molecule brings specific amino acid



The completed protein chain folds up into its unique shape which relates to its function — e.g. a structural protein like collagen.

Mutations

MUTATIONS — changes to the sequence of DNA bases. They occur continuously.

	Effect
Most mutations	No effect on the protein.
Some mutations	Alter the protein slightly but its shape and function are not affected.
Very few mutations	Change the shape of the protein and affect its function. E.g. an enzyme substrate no longer fits or a structural protein loses its strength.

Mutations in non-coding DNA can alter how genes are expressed.

Reproduction

Asexual and Sexual Reproduction

Parent	Asexual	Sexual
Cell division	One parent Mitosis	Two parents Meiosis and mitosis
Produce	Genetically identical offspring	Offspring containing a mixture of the parents' genes
Advantage	Fast compared to sexual reproduction, so many identical offspring can be produced in favourable conditions. Only one parent needed so no energy is wasted finding a mate.	The variation produced in the offspring increases the chance that some individuals of a species will survive a change in the environment. We can use selective breeding to utilise the variation in offspring and increase food production.

Some organisms can reproduce by both methods depending on the circumstances. E.g. the malaria parasite reproduces sexually in mosquitoes and asexually in humans.

Meiosis

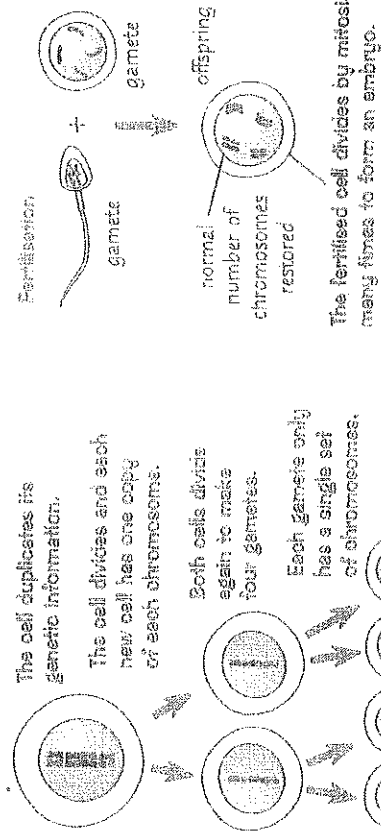
Meiosis produces cells with half the normal number of chromosomes.

The cell duplicates its genetic information.

The cell divides and each new cell has one copy of each chromosome.

Both cells divide again to make four gametes.

Each gamete only has a single set of chromosomes.

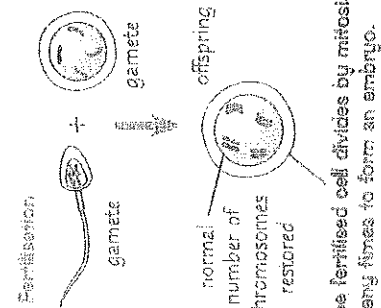


All the gametes produced by meiosis are genetically different.

	Animal	Plant
M	Sperm	Pollen
F	Egg	Egg

Gametes

Gametes are formed by meiosis in the reproductive organs.



The fertilised cell divides by mitosis many times to form an embryo.

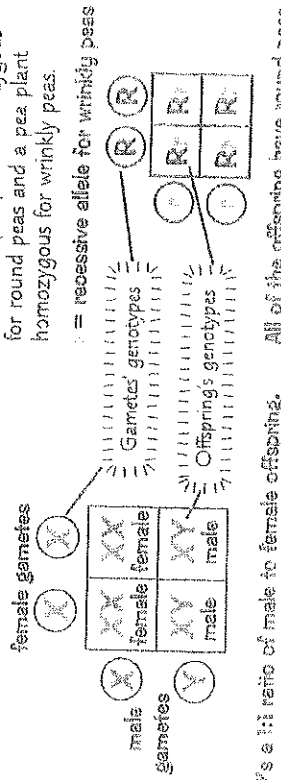
Genetic Diagrams

Genetic Terms

ALLELE	A version of a gene.
DOMINANT	An allele that is always expressed.
RECESSIVE	An allele that is only expressed when two copies are present.
HOMOZYGOUS	Both of an organism's alleles for a trait are the same.
HETEROZYGOUS	An organism's alleles for a trait are different.
GENOTYPE	An organism's combination of alleles.
PHENOTYPE	The characteristics an organism has.

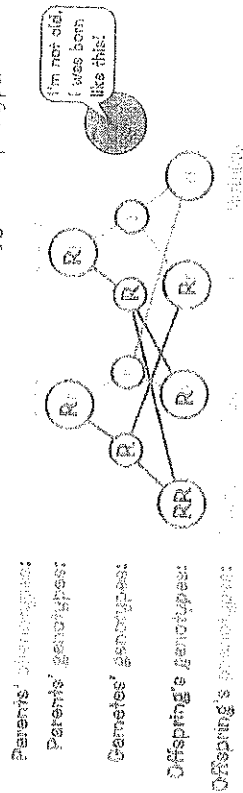
Two Types of Genetic Diagrams

- 1 A Punnett square for X and Y chromosome sex determination.



That's a 1:1 ratio of male to female offspring. All of the offspring have round peas.

- 2 A genetic cross between two pea plants that are heterozygous for pea type.



That's a 3:1 ratio of round to wrinkly offspring.

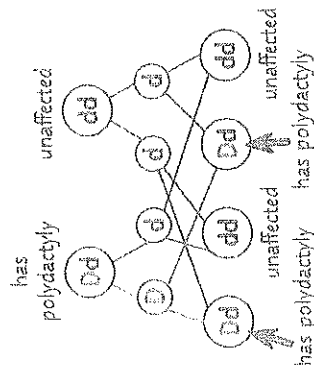
This example shows a trait with single gene inheritance, like fur colour in mice and red-green colour blindness, but most traits are the result of multiple genes.

Inherited Disorders

Polydactyly

INHERITED DISORDERS — disorders caused by certain alleles that are inherited from the parents.

POLYDACTYLY — a genetic disorder where a baby's born with extra fingers or toes. It's caused by a dominant allele.



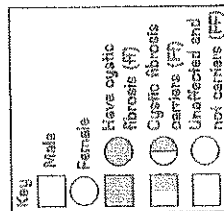
There's a 50% chance of a child having the disorder if one parent has one D allele.

Embryonic Screening

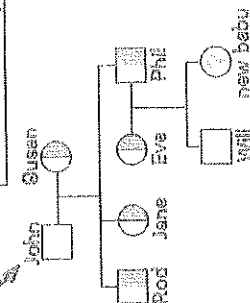
Against Embryonic Screening	For Embryonic Screening
Screening is expensive.	It will help to stop people suffering.
People might want to screen their embryos so they can pick the most 'desirable' one.	Treating disorders costs the Government a lot of money.
It implies that people with genetic problems are 'undesirable'.	There are laws to stop it going too far.

Cystic Fibrosis

CYSTIC FIBROSIS — a genetic disorder of the cell membranes. It's caused by a recessive allele.



A family tree is another type of genetic diagram.

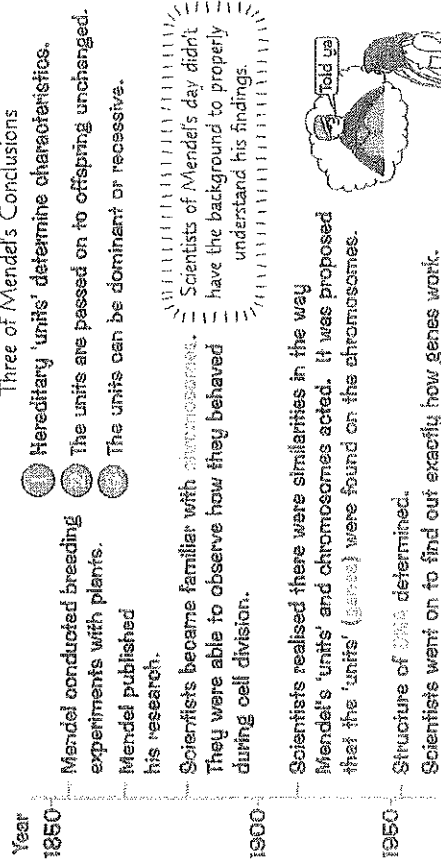


The probabilities for the new baby are:

25% 50% 25%

Developments in Genetics & Variation

Developments in Genetics



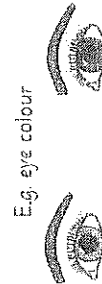
Variation

VARIATION — differences in the characteristics of organisms.

Genetic variation

Differences in the genes individuals inherit cause variation within a population. This variation is usually extensive.

Mutations cause these differences in genes.



Factor or phenotype	Most mutations	Some mutations	Many few mutations
None	Slight	New phenotype	

Environmental variation

Differences in the conditions in which an organism develops cause variation.

E.g. leaf colour



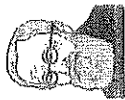
E.g. plant height



Evolution and Speciation

Charles Darwin

Best known for: the theory of evolution by natural selection.
Published: *On the Origin of Species* (1859)
Controversy: the theory challenged some religious ideas, discussions, knowledge of geology and fossils.
Benefactor: insufficient evidence to convince many scientists because the mechanism wasn't known about.



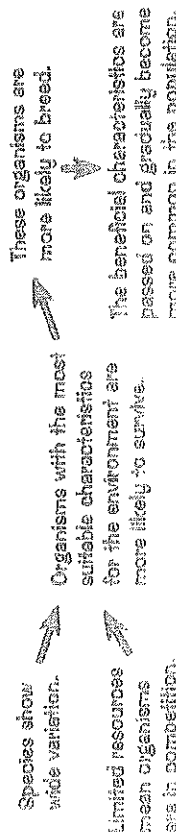
Alfred Russel Wallace

Best known for: work on warning coloration in animals and his theory of speciation.
Published: joint writings with Darwin on evolution (1858)

Research: observations from world travels provided evidence for the theory of evolution by natural selection.

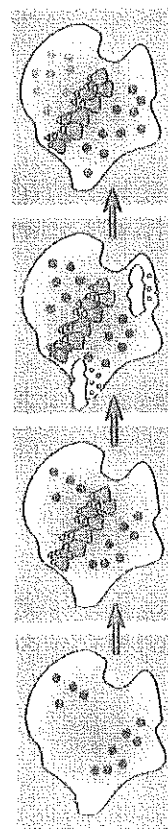
Natural Selection

The theory of evolution: All of today's species have evolved from simple life forms that first started to develop over three billion years ago.



Jean-Baptiste Lamarck argued that changes acquired during an organism's lifetime were passed on to its offspring, but experiments didn't support this hypothesis.

SPECIATION — the development of a new species by natural selection.



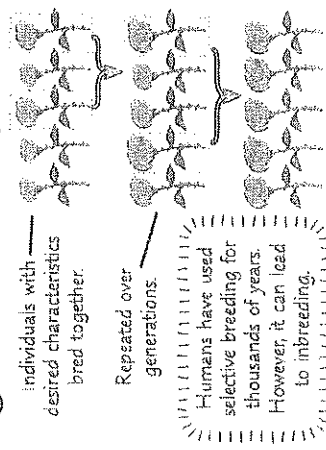
Two groups become separate species when individuals have changed so much that they won't be able to breed with one another to produce fertile offspring.

Uses of Genetics

Selective Breeding

SELECTIVE BREEDING — breeding plants or animals for particular characteristics.
Four uses of selective breeding:

- Greater meat or milk production.
- Big or unusual flowers.
- A good, gentle temperament in dogs.
- Disease resistance in crops.



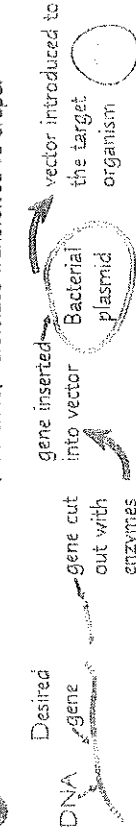
Four Types of Cloning

- Embryo transplants** — Used to clone plants.
- Tissue culture** — Used to clone plants.
- Cuttings** — Used to clone plants.
- Adult cell cloning** — nucleus removed from body cell + egg cell → nucleus removed → electric shock makes it divide → live animal (with same genes as adult body cell) → embryo implanted into surrogate mother

Genetic Engineering

Genetic engineering transfers a gene responsible for a desirable characteristic from one organism's genome into another organism. Three uses of genetic engineering:

- Genes for producing human insulin transferred to bacteria.
- Genes for resistance to insects, diseases, herbicides transferred to crops.
- Genes for bigger and better quality fruit transferred to crops.



Pros of GM crops	Cons of GM crops
Greater yields	Could reduce biodiversity
Helps people with diets that lack nutrients	Concerns about effects on human health
Already being grown without problems	Transplanted genes may spread into the wild

Fossils and Antibiotic Resistance

Fossils

Fossils — remains of organisms from many thousands of years ago. Three ways that fossils form:

- Gradual replacement by minerals — happens to slow decaying parts.
- Casts and impressions — e.g. footprints, burrows and rootlet traces.
- Preservation — in places where conditions prevent decay, parts of organisms can be preserved. E.g. in amber, glaciers and peat bogs.

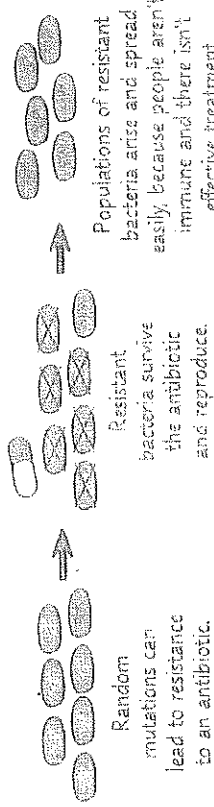
Fossils show how much or how little organisms have changed as life developed but there's uncertainty over how life began because the fossil record is incomplete:

Many early forms of life were soft-bodied and decayed away completely.



Antibiotic-Resistant Bacteria

Bacteria can evolve quickly because they reproduce rapidly. MRSA is a type of antibiotic-resistant bacterium.



Developing new antibiotics is costly and slow, and is unlikely to keep up with the emergence of resistant strains.

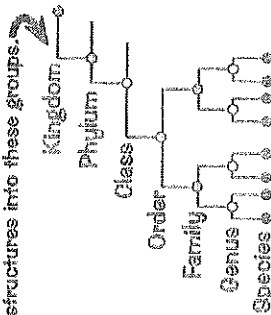
Three ways to reduce the rate of development of antibiotic-resistant strains:

- Not prescribing antibiotics for non-serious or viral infections.
- Patients taking the full course of antibiotic to kill all the bacteria.
- Reducing the use of antibiotics in agriculture. Any bacteria not destroyed might develop into antibiotic-resistant strains.

Classification and Extinction

The Linnaean System

The Linnaean system was developed by Carl Linnaeus. It organises organisms by their characteristics and structures into these groups:



Binomial naming system
Genus Species
Eg. *Homo sapiens*

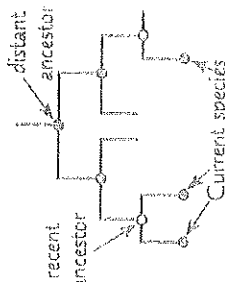
After microscopes showed us more about internal structures of organisms, our understanding of biochemical processes increased.

New bases of classification proposed, e.g. Carl Woese's three domain system.

Prokaryote	true bacteria
Eukaryote	a different type of prokaryotic cell usually found in extreme places
Eukaryote	including protists, fungi, plants and animals

Evolutionary Trees

Evolutionary trees show how scientists think different species are related to each other.



Living species	Extinct species
Current classification data	Fossil data

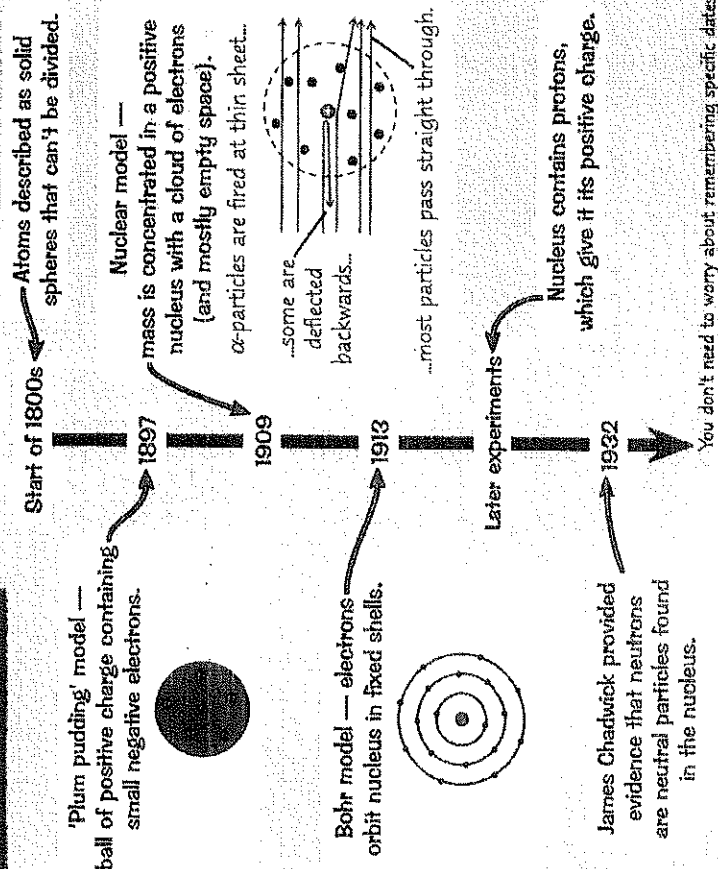
Extinction

EXTINCTION — when no individuals of a species remain.

- Environmental change
- New predators
- New diseases
- Competition
- Catastrophic events

Atomic and Electronic Structure

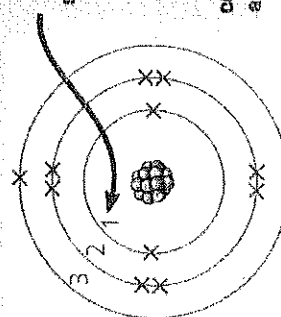
The History of the Atom



Electronic Structure

Electrons occupy shells — sometimes called energy levels.
 Electrons fill each shell up before occupying a new one, starting with the lowest energy.

Shell	Electrons allowed in shell
1	2
2	8
3	8



Lowest energy shells are closest to the nucleus.

Electronic structure can also be represented as numbers — this one is 2, 8, 1.

Topic 1 — Atomic Structure and the Periodic Table

Nanoparticles and their Uses

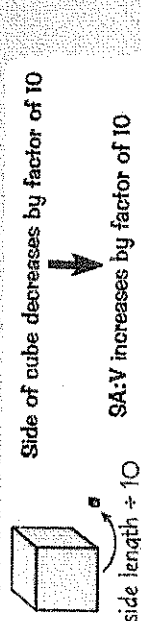
Particle Sizes

	Diameter (nm)
Coarse particles (PM_{10})	2500 - 10 000
Fine particles ($PM_{2.5}$)	100 - 2500
Nanoparticles	1 - 100

Coarse particles are also called dust.

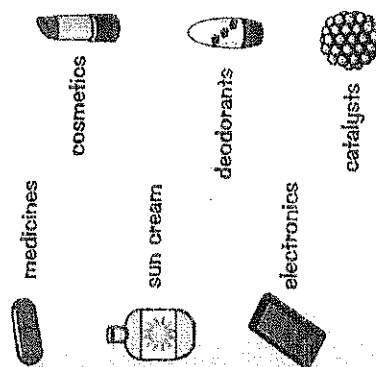
contain a few hundred atoms

surface area to volume ratio = $SA \div V$



The large surface area to volume ratio of nanoparticles means properties of nanoparticle materials may be different to those of the same materials in bulk.

Uses of Nanoparticles



Finding new ways to use nanoparticles is an important area of scientific research.

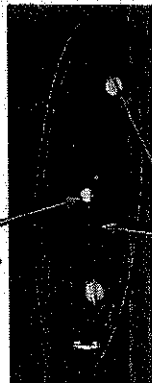
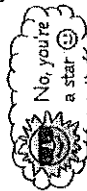
Evaluating Uses

Advantages	Disadvantages
Generally more effective than equivalent products without nanoparticles.	Long-term effects on health aren't fully understood.
Smaller quantities may be needed compared to materials with 'normal-sized' particles.	Could cause damage to the environment if washed away.

Topic 2 — Bonding, Structure and Properties of Matter

The Solar System

The Sun is a star. It gives out light and has planets orbiting around it.



The Sun's gravity keeps planets in orbit.

Beyond the Solar System

GALAXY — a large collection of stars.



Milky Way — our galaxy, which contains the Sun and other stars, e.g. Proxima Centauri.

There are billions of stars in a galaxy, and billions of galaxies in the Universe.

Light Years

LIGHT YEAR — the distance that light travels in one year. 1 light year = 95 million million km. Light years are used for measuring huge distances, e.g. distances in space.

Section 12 — The Earth and Beyond

The Electromagnetic (EM) Spectrum

The EM spectrum is continuous.

red → violet

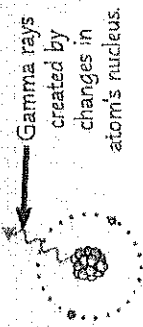
Radio waves	Microwaves	Infrared	Visible light	Ultraviolet	X-rays	Gamma rays
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Increasing frequency, decreasing wavelength

Our eyes can only detect visible light.

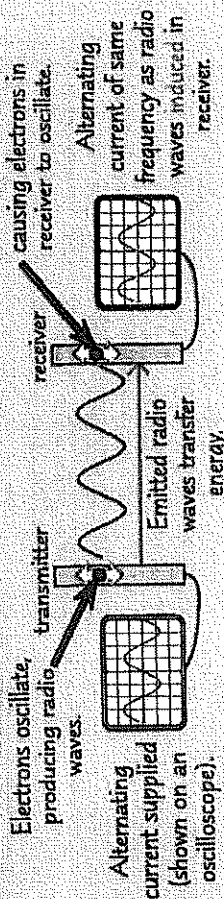
- Are transverse.
- Transfer energy from sources to absorber.
- Travel at same speed in air or vacuum.

EM waves created and absorbed over large frequency range due to changes in atoms and their nuclei.



Uses and Dangers of EM Waves

Producing Radio Waves



Uses of EM Waves

Radio waves

- TV
- Radio

Microwaves

- Satellite communications
- Cooking

Infrared radiation

- Electric heaters
- Cooking
- Infrared cameras

Visible light

- Communications through optical fibres
- Energy efficient lights
- Sun tan beds

UV waves

- Medical imaging
- Medical treatments

X-rays and gamma rays

- Medical imaging
- Medical treatments

Dangers of EM Waves

RADIATION DOSE — measure of the risk of harm to body tissues due to exposure to radiation. It is measured in sieverts.

1 sievert (Sv) = 1000 millisieverts (mSv).

Risk depends on:
• Size of dose
• Type of radiation

Type of ionising radiation	UV	X-rays and gamma rays
Harmful effects on human body tissue	• Can prematurely age skin • Increases risk of skin cancer	• Gene mutation • Cancer

Isotopes and Nuclear Radiation

Mass Number and Atomic Number

ISOTOPES of an element — atoms with the same number of protons but different numbers of neutrons.



MASS NUMBER — total number of protons and neutrons in an atom.

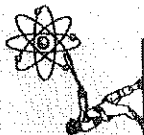
16

8

ATOMIC NUMBER — number of protons in an atom (equal to charge of nucleus).

Types of Nuclear Radiation

RADIOACTIVE DECAY — when an unstable nucleus decays into another element and gives out radiation to become more stable.

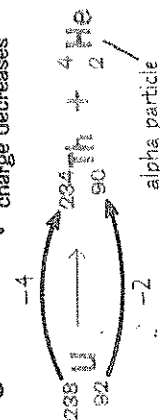
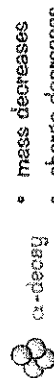


IONISING RADIATION (α , β and γ) — radiation that knocks electrons off atoms, creating positive ions.

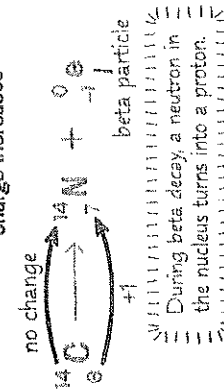
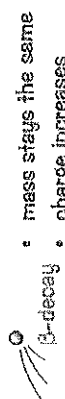
Unstable nuclei can also release neutrons (n) when they decay.

	alpha (α)	beta (β)	gamma (γ)
Consists of...	2 neutrons and 2 protons (helium nucleus)	fast-moving electron from nucleus	electromagnetic radiation from nucleus
Absorbed by...	Sheet of paper	Sheet of aluminium	Thick sheets of lead
Range in air	Few centimetres	Few metres	Longer distances
Ionising power	Strong	Moderate	Weak
Example of use	Smoke detectors	Material thickness testing	Medical tracers

Nuclear Equations



γ -decay mass and charge stay the same



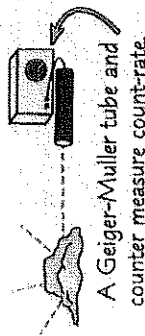
You don't need to know these particular equations, just how mass and atomic numbers change during decays.

Radioactivity and Risk

Activity and Count-Rate

ACTIVITY — the rate at which a source decays, measured in becquerels (Bq).

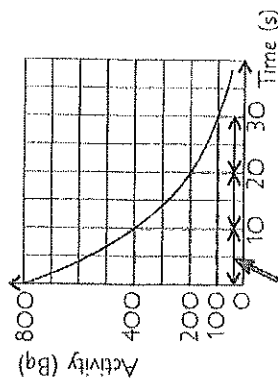
COUNT-RATE — the number of radiation counts reaching a detector per second.



Half-life

Radioactive decay is random.

HALF-LIFE — time taken for the number of nuclei of an isotope in a sample to halve.

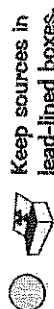


One half-life is the time taken for the activity or count-rate of a sample to halve.

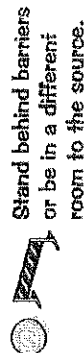
IONISING RADIATION — getting unwanted radioactive atoms onto or into an object.

EXPOSURE — the exposure of an object to nuclear radiation (doesn't make the object radioactive).

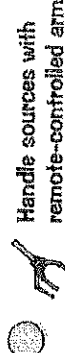
Three precautions to protect against irradiation:



Keep sources in lead-lined boxes.



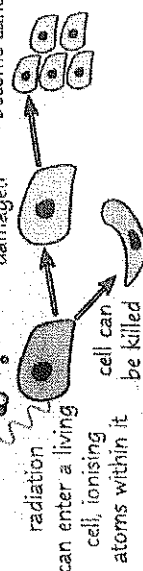
Stand behind barriers or be in a different room to the source.



Handle sources with remote-controlled arms.

Risk of Radiation

damaged cell can multiply and become cancer



An isotope with a short half-life decays quickly — emits high amounts of radiation to start with but quickly becomes safer.

Inside body:

- α is most dangerous
- γ is least dangerous

Outside body:

- γ is most dangerous
- α is least dangerous

An isotope with a long half-life decays slowly — emits small amounts of radiation for a long time, so nearby areas are exposed for a long time.