Knowledge Goals Homework Booklet (Summer 2)

Year 9 and 10

Name: _____

Settlebeck School

Respect | Responsibility | Aspiration

Subject Index

Suggested Homework Schedule
(30 minutes of independent study per subject each week)

	Subjects to Revise	
Monday	Science	Option 2
Tuesday	Mathematics	Option 2
Wednesday	Science	PSHE
Thursday	English	Option 3
Friday	Option 3	Mathematics
Saturday	Option 1	English
Sunday	Option 1	Mathematics

To help you get organised, we have planned out your weekly homework slot for each subject.

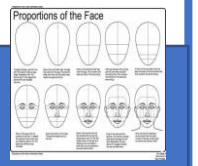
Subject Homework Frequency Information

Subject	Homework
Art	Fortnightly
Computer Science	Fortnightly
Design and Technology	Fortnightly
Drama	One per half term
English	Weekly
Food Technology	Weekly
French	Weekly
Geography	Fortnightly
History	Fortnightly
Mathematics	Weekly
Music	Once per half term
PSHE	Once per half term
Physical Education	One per half term
Religious Studies	Weekly
Science	Weekly

HOW TO SELF TEST

Mind mapping

- Mind mapping is simply a diagram to visually represent or outline information.
- Use information gathered from your Knowledge Goals booklet to create mind maps, make sure to use colour and images and keep writing to the bare minimum.



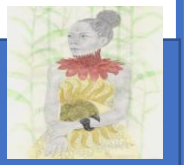
HOW TO MIND MAP VIDEO

Parent information on knowledge retrieval:

Flash cards

Use your Knowledge Goals booklet to make flash cards. Write the questions on one side and on the other record the answer.

Test yourself or work with a friend to make sure you know all of the key information for each topic.



HOW TO FLASH CARD VIDEO

How should students use the Knowledge Goals booklets?

Your **Knowledge Goals** booklet provide the essential knowledge that you need to learn in each subject this half term.

You are expected to spend **30 minutes per subject per week** 'learning' the content.

You will be assessed during lessons using 'low stake' quizzing.

Your teacher may choose to set you additional homework.

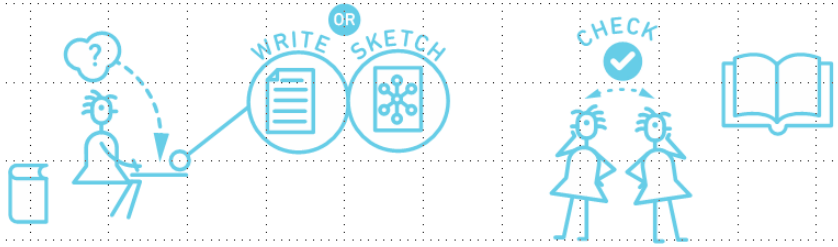
How can parents support?

- Read through the booklet with your child – if you don't understand the content then ask them to explain it to you – 'teaching' you helps them to reinforce their learning.
- Test them regularly on the spellings of key words until they are perfect. Get them to make a glossary (list) of key words with definitions or a list of formulae.
- Read sections out to them, missing out key words or phrases that they have to fill in. Miss out more and more until they are word perfect.

Retrieval Practice

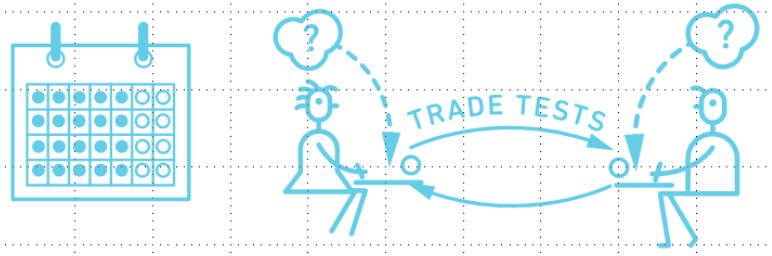
HOW TO DO IT

Put away your class materials, and write or sketch everything you know. Be as thorough as possible. Then, check your class materials for accuracy and important points you missed.



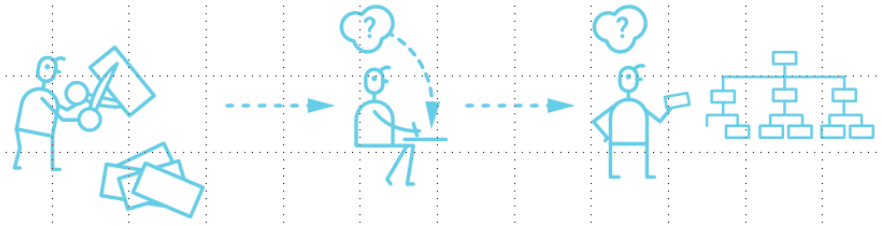
HOW TO DO IT

Take as many practice tests as you can get your hands on. If you don't have ready-made tests, try making your own and trading with a friend who has done the same.



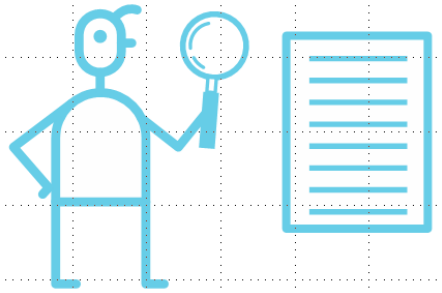
HOW TO DO IT

You can also make flashcards. Just make sure you practice recalling the information on them, and go beyond definitions by thinking of links between ideas.



HOLD ON!

Retrieval practice works best when you go back to check your class materials for accuracy afterward.

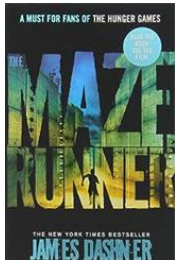


Literacy: Tier 2 Vocabulary

Tier 2 Vocabulary		
	Key word	Definition
1	eloquent	having a skillful way with words
2	flighty	fickle, irresponsible
3	hysteria	in state of extreme upset
4	overstate	exaggerate
5	shrewd	clever, intelligent
6	versatile	adjustable, flexible

These words are all tier 2 words; in other words, they are seen as 'academic vocabulary' and if you know them, can understand them and use them, you will do better in your exams and be able to communicate more precisely and effectively in life.

DEAL Year 9 (Summer Term)

Book Title	Author	Genre	Overview	Image
Maze Runner	James Dashner	Science Fiction (Dystopian Adventure)	The first three books in the pulse pounding Maze Runner series! When the doors of the lift crank open, the only thing Thomas remembers is his first name. But he's not alone. He's surrounded by boys who welcome him to the Glade - a walled encampment at the centre of a bizarre and terrible stone maze. But the maze is just the beginning ...	
British Values	Tolerance	Individual Liberty	Rule of Law	Democracy	Mutual respect
Touching the Void	Joe Simpson	Non-fiction Adventure	Touching the Void is a heart stopping, true account of Joe Simpson's terrifying adventure in the Peruvian Andes. He and his climbing partner, Simon, reached the summit of the remote peak, Siula Grande. A few days later, Simon staggered into base camp, exhausted and frost-bitten, with news that Joe was dead. What really happened to Joe makes not only an epic of survival but a compelling testament of friendship.	
British Values	Tolerance	Individual Liberty	Rule of Law	Democracy	Mutual respect

DEAL Year 10 (Summer Term)

Book Title	Author	Genre	Overview	Image
The Woman in Black	Susan Hill	Gothic Horror Novel (Ghost Story)	The Woman in Black is a horror story about a young lawyer who encounters a vengeful ghost. Arthur Kipps is sent to a remote village in England to sort out the affairs of a deceased woman, but he soon discovers that her house is haunted by a mysterious woman in black. The ghost terrorizes the villagers and kills their children, and Arthur must find a way to stop her before she claims his own son.	
British Values	Tolerance	Individual Liberty	Rule of Law	Democracy	Mutual respect
Rebecca	Daphné Du Maurier	Classic (Gothic Novel)	The story is set evocatively in the wilds of Cornwall, in a large country house called Manderley. One of du Maurier's intriguing devices is her refusal to name her heroine, the first-person narrator, known only as the second Mrs. de Winter. The novel opens with her famously saying, "Last night I dreamt I went to Manderley again." Much of the story is then told in flashback. A shy, awkward young woman, she is in Monte-Carlo, working for an elderly socialite, when she meets Maximilian (Maxim) de Winter. He is a wealthy widower whose wife, Rebecca, drowned in a sailboat accident. After a whirlwind courtship, the young woman and Maxim marry and later settle at Manderley.	
British Values	Tolerance	Individual Liberty	Rule of Law	Democracy	Mutual respect

British Values

British Values: What They Mean for Us

British values are the important ideas that help make the UK a fair, safe, and respectful place for everyone. These values shape how we live together and treat each other. Here's a simple breakdown of the key British values:

Democracy

- Democracy is all about having a voice. In the UK, we get to vote in elections to choose our leaders and decide on important issues. Everyone's opinion matters!
- At school, this means having the chance to express your views, take part in decisions, and have your voice heard.

The Rule of Law

- The rule of law means that everyone must follow the law, no matter who they are. Laws help keep us safe and ensure that everyone is treated fairly.
- At school, we follow rules that help keep our environment respectful and safe for everyone.

Individual Liberty

- Individual liberty is about having the freedom to make your own choices, as long as they don't harm others. It's about having the freedom to think for yourself, express your opinions, and be who you are.
- At school, you can express yourself, pursue your interests, and have the freedom to make choices about your learning.

Mutual Respect and Tolerance

- Mutual respect means valuing other people's opinions, feelings, and beliefs, even if they're different from your own. Tolerance is about accepting people for who they are and being open to different cultures, ideas, and traditions.
- At school, we show respect by listening to each other, understanding differences, and creating a welcoming and friendly environment for everyone.

Equality

- Equality means treating everyone fairly, no matter their background, gender, race, or beliefs. Everyone should have the same opportunities to succeed.
- At school, we support equality by making sure everyone has the same chances and is treated with respect, regardless of who they are.

How British Values Apply to Us at Settlebeck

At Settlebeck, we bring British values to life by encouraging respect for each other, celebrating diversity, and working together to create a positive school community. These values help us create a safe and supportive space where we can all learn and grow, respecting each other's differences and making sure everyone feels included. By living these values, we can all contribute to making Settlebeck a great place to learn, where everyone has the chance to thrive!

Year 9 and 10 Knowledge Goals: Art - CULTURES

African art is a diverse and rich subject that encompasses a wide range of styles, materials, and cultural significance across the continent.

1.Traditional Art Forms:

1. **Masks**: Often used in ceremonies and rituals, masks can represent ancestors, spirits, or animals. Different cultures, such as the Yoruba, Dogon, and Fang, have unique styles and purposes for their masks.
2. **Sculpture**: Wood, stone, and metal sculptures are common. The art often reflects social status, spirituality, and community beliefs.
3. **Textiles**: Fabrics like kente cloth from Ghana or mud cloth from Mali are integral to African culture, often featuring vibrant colours and patterns that convey stories or status.

2.Contemporary African Art:

1. Explore artists who are redefining African art today, such as El Anatsui, Yinka Shonibare, and Kehinde Wiley. Their works often address themes of identity, colonialism, and globalization.

3.Cultural Significance:

1. Art is used in various African cultures for storytelling, preserving history, and community cohesion.

4.Techniques and Materials:

1. Different materials used in African art, such as clay, wood, beads, and textiles.

The Day of the Dead, or Día de los Muertos, is a traditional Mexican holiday celebrated on November 1st and 2nd. It is a time to honour and remember deceased loved ones, blending indigenous traditions with Spanish influences. Families create altars, known as ofrendas, decorated with photographs, personal items, and offerings such as food, flowers (especially marigolds), and candles to invite the spirits of the deceased to return and celebrate with them. The holiday is characterized by colourful decorations, parades, and various cultural activities. It emphasizes the belief that death is a part of life, and it encourages a joyful remembrance rather than mourning.

Possible Cultures to research and explore through your art.

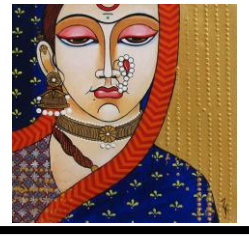
African Art
Chinese Art
Japanese Art
Australian art/Aboriginal
Mexican Art
Indian Art
North American Art
Egyptian Art

Egyptian sculpture | British Museum

National Museum of Mexican Art, Pilsen, Chicago

Ancestors, artefacts, empire – mobilising Aboriginal objects | British Museum

Collections: Chinese - National Museum of Asian Art



Africa | British Museum

National Museum of African Art – Smithsonian Institution

Year 9 and 10 Knowledge Goals: Art - CULTURES

VOCABULARY

- Culture
- Artist
- Observation
- Composition
- Tone
- Blend
- Cross hatch
- Collage
- Value
- Contrast
- Perspective
- Weight of line
- Layer
- Textile
- Blend
- Paint
- Printing
- Etching
- Mono print

Festivals are significant cultural events celebrated in various forms around the world, often reflecting the traditions, beliefs, and values of a community. Here are a few examples of festivals from different cultures:

1.Diwali (India): Known as the Festival of Lights, Diwali is celebrated by Hindus, Sikhs, and Jains. It symbolizes the victory of light over darkness and good over evil, featuring fireworks, lamps, and festive meals.

2.Holi (India): The Festival of Colours, Holi celebrates the arrival of spring. Participants throw coloured powders and water at each other, dance, and enjoy traditional sweets.

3.Carnival (Brazil): This vibrant festival occurs before Lent, characterized by parades, samba music, dancing, and elaborate costumes, showcasing Brazil's rich cultural heritage.

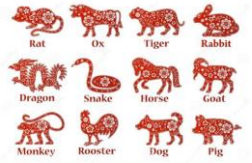
4.Chinese New Year (China): Also known as Spring Festival, it marks the beginning of the lunar new year. Celebrations include family reunions, feasts, dragon dances, and fireworks.

5.Day of the Dead (Mexico): This festival honours deceased loved ones with colourful altars, offerings, and celebrations, blending indigenous traditions with Catholic elements.

Hieroglyphics are a writing system used in ancient Egypt, characterized by a combination of logographic and alphabetic elements. This system utilized symbols and pictures to represent sounds, words, or ideas. Hieroglyphs were often inscribed on monuments, tombs, and papyrus scrolls, serving both ceremonial and administrative purposes.

The script consists of over 700 symbols, including representations of objects, animals, and human figures. Hieroglyphics were used primarily for religious texts, official inscriptions, and monumental art, and they played a significant role in the recording of Egyptian history and culture.

Chinese New Year, also known as Lunar New Year or Spring Festival, is celebrated on a date that varies each year, as it is based on the lunar calendar. It typically falls between January 21 and February 20. The festivities last for about 15 days, culminating in the Lantern Festival. Each year is associated with one of the 12 animals in the Chinese zodiac, and the celebrations often include family reunions, feasting, fireworks, and various cultural traditions intended to bring good luck for the year ahead.



Indigenous Art: This includes a variety of styles and mediums, such as pottery, weaving, painting, and sculpture, created by Native American, Inuit, and First Nations artists. These works often reflect spiritual beliefs, cultural stories, and a deep connection to nature.

Colonial Art: During the colonial period, European settlers brought their artistic traditions, which influenced the development of American art. This includes portraiture, landscape painting, and decorative arts.

Year 9 and 10 Knowledge Goals: Computer Science

Impacts of digital technology

Ethical issues

Ethics are moral principles, or rules, which govern a person's attitudes and behaviour. Ethics apply to the use of computers as much as they do to other things in life. Ethical issues in computing include:

- Ensuring public safety
- Security of data

Cultural issues

The introduction of computers has changed society, sometimes for the better, sometimes for the worse. 'Cultural issues' is the term used for computer matters that have an effect on the nature and culture of society. Some of these issues include:

- The digital divide
- The changing nature of employment

Environmental issues

- Resources are needed to in order for computers to be produced, distributed and used. Metals and plastics are used to manufacture components, while energy is expended in distributing equipment and in using it.
- Many computers, such as web servers, domain name servers and data centres, need to be left running continuously. This requires lots of energy to maintain.
- Many computer components are either hard to recycle or contain toxic materials, such as lead.

Privacy issues

As more and more services become digitised users are worried about the amount of data organisations and governments gather. Eg Google Maps stores all data locations permanently unless opted out. Google know exactly where their users are, have been and for how long. This data is used for helpful purposes but it could also potentially be abused.

Legislation relevant to Computer Science

The Data Protection Act 2018

This law protects your data when used by companies and organisations. Personal data must be:

Fairly & lawfully processed	Obtained for legitimate purposes
Adequate, relevant & not excessive	Accurate & up to date
Not be kept longer than necessary	Handled securely.

Computer Misuse Act 1990

There are three separate parts to the Act:

1. It is illegal to access a computer unless you have permission to do so.
2. It is illegal to access data on a computer when that material will be used to commit further illegal activity, such as fraud or blackmail.
3. It is illegal to make changes to any data stored on a computer when the user does not have permission to do so.

Copyright Designs and Patents Act 1988

The **Copyright, Designs and Patents Act 1988** exists to protect peoples' creations. When a person creates something, they own it. What they create might include:

- a picture, drawing or photograph
- a video, television programme or film
- text, such as a book, article or report
- a game

Software licences

Open Source	Proprietary
Free of copyright	Copyright protected
Generally free	May have a fee or subscription licence
Source code is public	Source code is not public
Source code can be modified	Updates from manufacturer only
Possible online support from peers.	Can be expensive
Support may not be available	Cannot be modified
No guarantee of quality	Licence can limit number of installs

Year 9 and 10 Knowledge Goals: Computer Science

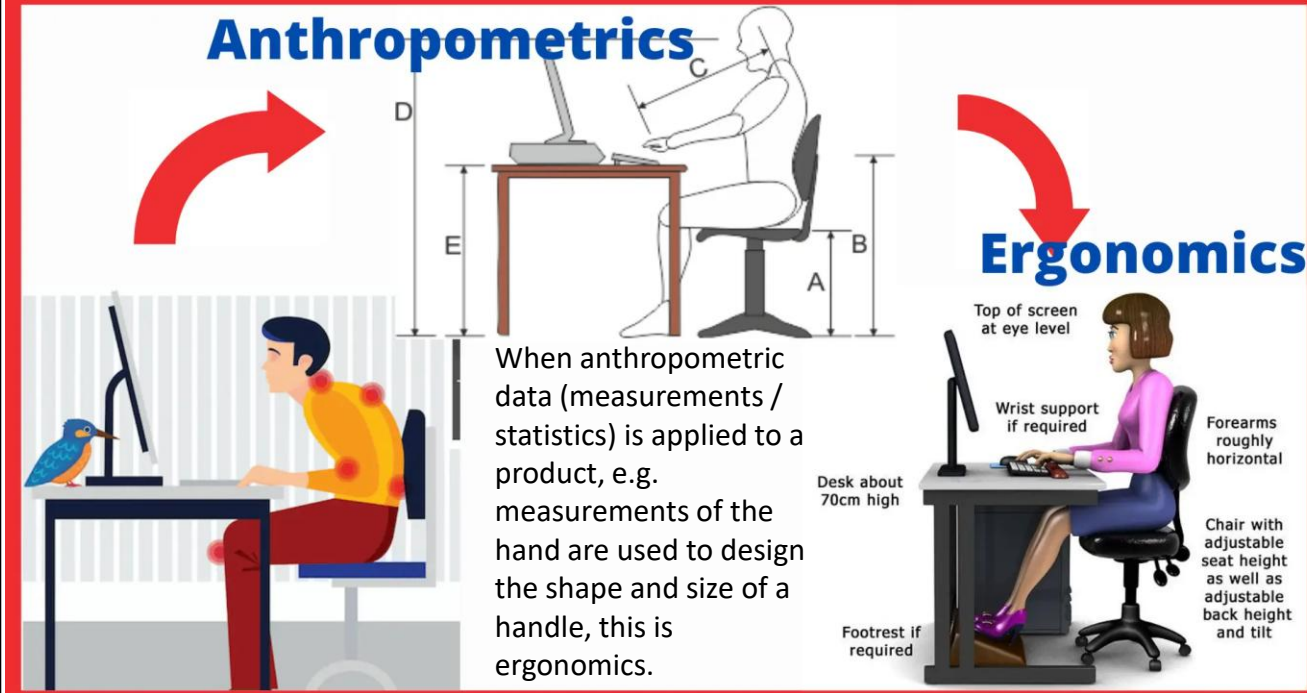
Settlebeck School

Tier 3 Vocabulary		
Key word		Definition
1	**Data Protection Act**	UK law that governs how personal data is collected, stored, and used by organizations.
2	**Copyright**	Legal right that protects the use of creators' original works, such as software, music, and writing.
3	**Open Source**	Software with source code that anyone can inspect, modify, and enhance.
4	**Proprietary Software**	Software that is owned by an individual or company and has restrictions on its use, modification, and distribution.
5	**Digital Divide**	The gap between those who have access to digital technology and the internet and those who do not.
6	**Carbon Footprint**	The total greenhouse gas emissions caused directly or indirectly by an individual, organization, or product.
7	**Hacking**	Unauthorized access to or manipulation of computer systems or networks.
8	**Phishing**	A cybercrime where attackers impersonate legitimate institutions to steal sensitive data like passwords or credit card numbers.
9	**Computer Misuse Act**	UK law that criminalizes unauthorized access to computer systems and data.
10	**Data Protection Act**	UK law that governs how personal data is collected, stored, and used by organizations.

Notes:

Quiz QR Code	Quiz Link
	https://forms.office.com/e/qE6hbDN8MT

Year 9 and 10 Knowledge Goals: Design and Technology

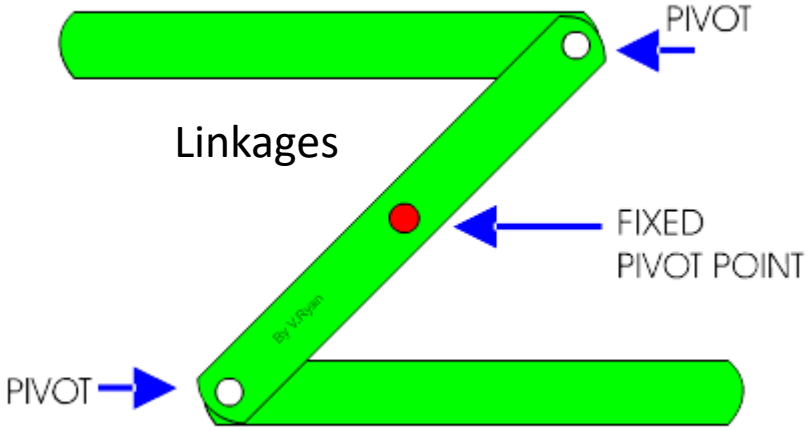


When anthropometric data (measurements / statistics) is applied to a product, e.g. measurements of the hand are used to design the shape and size of a handle, this is ergonomics.

Anthropometrics: The study of the human body and its movement.

Ergonomics: The study of people and their relationship with the environment around them.

Engineering: Handy Grab



PIVOT: A point around which things rotate or balance.

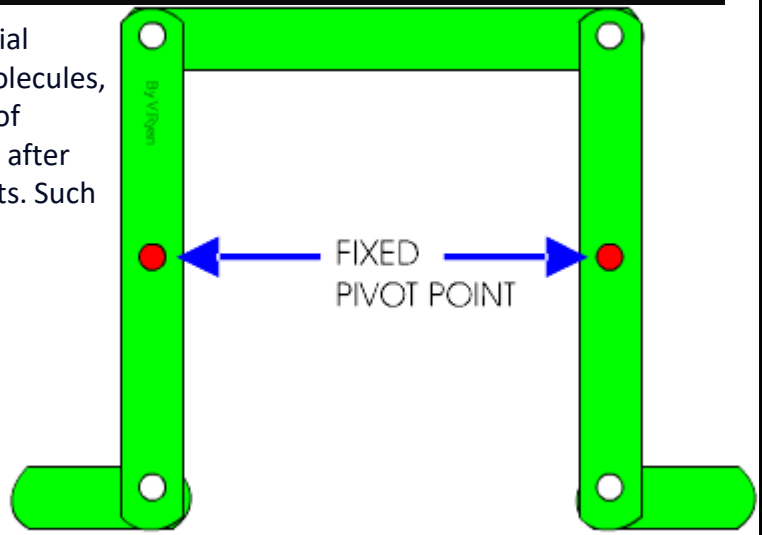
Pincers

Snips

Pliers

Grips

Elastomer: Any rubbery material composed of long chainlike molecules, or polymers, that are capable of recovering their original shape after being stretched to great extents. Such as elastic bands.



Linkages can transfer movement

Year 9 and 10 Knowledge Goals: Design and Technology

Tier 3 Vocabulary

	Key word	Definition
1	elastomer	Material that displays rubber-like elasticity.
2	trigger	A small device that releases a spring or catch
3	beam	A long, sturdy piece of squared timber or metal used to support a structure.
4	jaw	The gripping teeth of the handy grab.
5	linkage	A system of links which transfer movement.
6	handle	The part of an object you hold.
7	ergonomics	The study of people and their relationship with the environment around them.
8	anthropometrics	The study of the human body and its movement.
9	orthographic	A means of representing three-dimensional objects in two dimensions.
10	pivot	The central point, pin, or shaft on which a mechanism turns.
11	pliers	Pincers with parallel surfaces, used chiefly for gripping small objects or bending wire.
12	pincers	An instrument having two short handles and two grasping jaws working on a pivot and used for gripping things.

Notes

Handy Grab

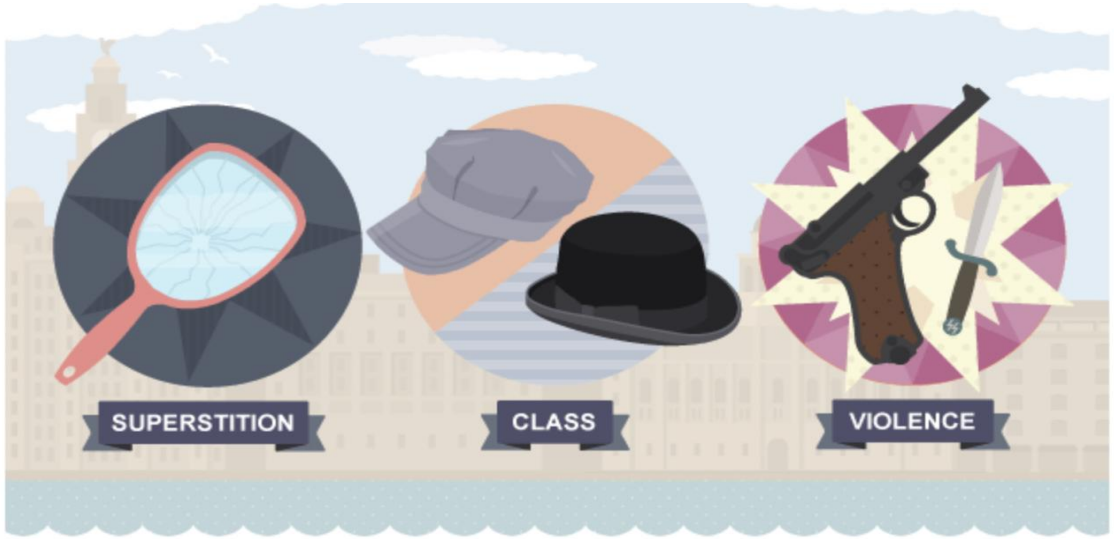
Year 9 and 10 Knowledge Goals: Drama (Blood Brothers)

Summary

Blood Brothers, a musical by Liverpudlian playwright Willy Russell, revolves around twin boys (Mickey and Edward) who are separated at birth and brought up in completely different environments in the city. The play, set in the 1960s, is divided into two acts, with songs throughout.

Mickey is brought up with his seven older siblings by his struggling single mother, Mrs Johnstone. His twin brother, Edward, however, is brought up as the only child of the wealthy Lyons family, who live nearby, after Mrs Lyons persuaded Mrs Johnstone to hand over one of her twins at birth. Mickey and Edward don't meet each other until they're seven years old, but immediately become best friends and blood brothers. The bond continues when the boys are teenagers and both live in the countryside, despite them both being in love with Mickey's neighbour Linda. However, as they get older, the huge difference in their backgrounds pulls them apart and eventually leads to their tragic deaths.

Themes

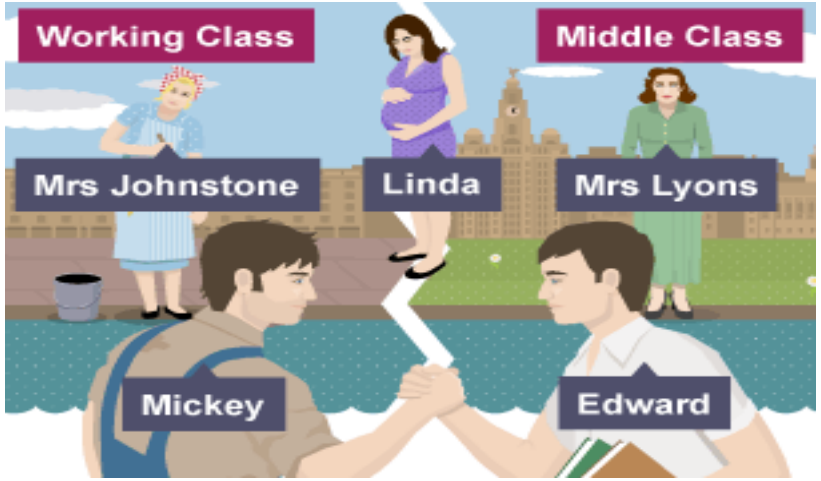


Characters

Main characters
- Mickey Johnstone
- Edward Lyons
- Mrs Johnstone
- Mrs Lyons

Secondary characters
- Linda
- Narrator

Minor characters
- Sammy
- Mr Lyons



Year 9 and 10 Knowledge Goals: Drama (Blood Brothers)

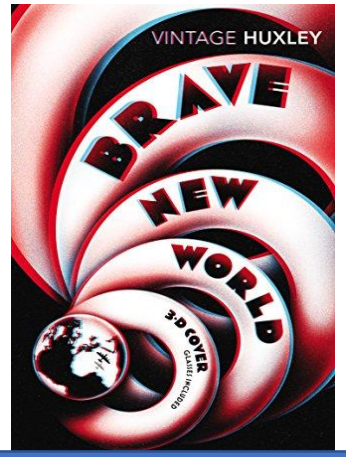
Tier 3 Vocabulary		
Key word		Definition
1	Vocal projection	The strength of speaking or singing whereby the voice is used powerfully and clearly.
2	Facial expressions	A way to show emotions and feelings using your face.
3	Body language	A way to show emotions and feelings using your body.
4	Gait	The way you walk.
5	Stance	The way you stand using your legs and feet.
6	Posture	The way you stand using your body.
7	Musical Theatre	Musical theatre is a form of theatrical performance that combines songs, spoken dialogue, acting and dance.
8	Superstition	A belief or practice resulting from ignorance, fear of the unknown, trust in magic or chance, or a false conception of causation
9	Plot	the main events of a play, novel, film, or similar work.
10	Tension	a state of uncertainty and lack of knowledge, sometimes also referring to the state of waiting.
11	Climax	the highest point of tension in a storyline, often depicted by a confrontation between the protagonist and antagonist.
12	Genre	the type of story being told
13	Style	How the story is presented on stage.

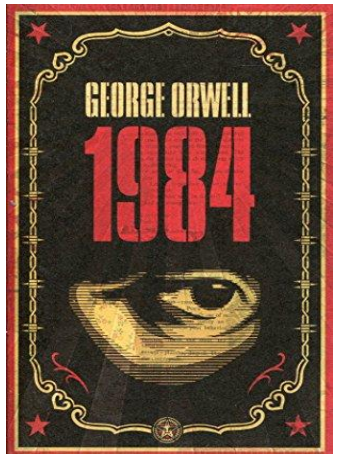
Notes:

Year 9 and 10 Knowledge Goals: English (Sci Fi)

Read and watch plot summaries of the following books. *Which stories sound most interesting and why?*

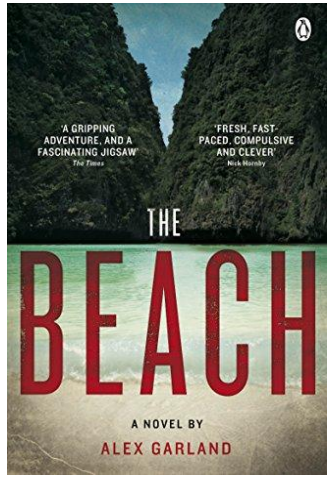
1. Read the Plot Summary on Brave New World - Plugged in
2. Watch Sparknotes: Aldous Huxley's Brave New World Summary

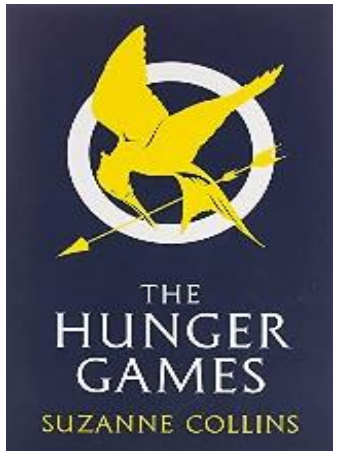




1. Read the Plot Summary on 1984 - Plugged in
2. 2. Watch 1984 Video Summary - Youtube

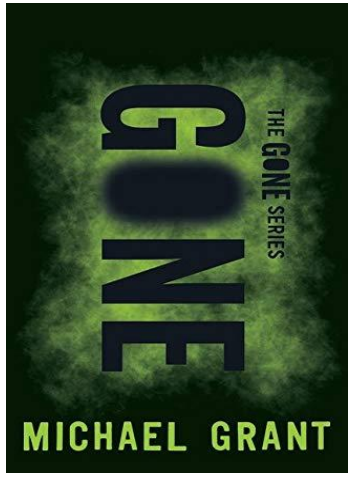
1. Read The Beach Summary and Study guide – BookRags.com
2. Watch The Beach by Alex Garland: Summary and Analysis –Study.com





1 Read the Plot Summary - Catching Fire – "Hunger Games" Series Books – Plugged in
2. Watch The Hunger Games in Minutes: Recap Youtube

1. Read the Plot Summary on Gone – Gone Series – Plugged in
2. Watch Gone by Michael Grant (in 5 minutes) - Youtube



Better still, READ the actual book

Test Yourself and others:

1. Do the quiz on "The Beach"

2. Choose another book; produce a quiz on it for the class (10 questions)

Year 9 and 10 Knowledge Goals: English (Sci Fi)

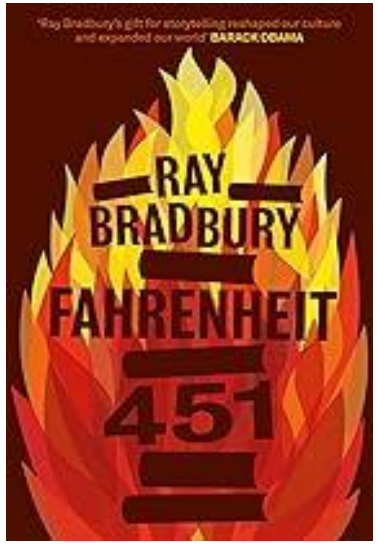
Summer Term: **Vocabulary (SI)**

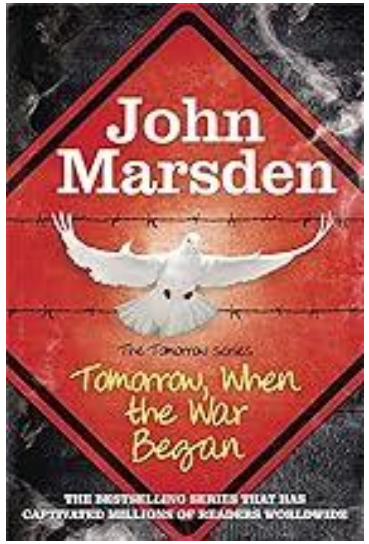
	Key word	Definition
1	utopia	A place or state of things in which everything is perfect: often imaginary.
2	dystopia	A place and/or society in which there is great suffering or injustice, typically one that is totalitarian or post-apocalyptic, for example, due to a nuclear or environmental disaster.
3	extra terrestrial	From outside the earth , from outer space.
4	technology	Machinery and equipment developed through scientific knowledge for practical purposes.
5	society	A number of people in a fairly ordered community
6	hierarchy	where people in a society are ranked according to wealth, authority or status.
7	politics	The activities to do with governing an area or country.
8	totalitarian	Government that is centralized and dictatorial and requires complete subservience.
9	authoritarian	Enforcing strict obedience to authority at the expense of personal freedom.
10	uniformity	Being the same and unchanging.

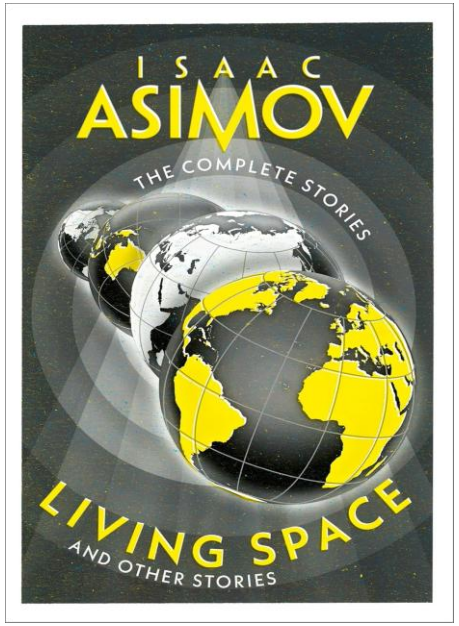
Summer Term: **Vocabulary (SI)**

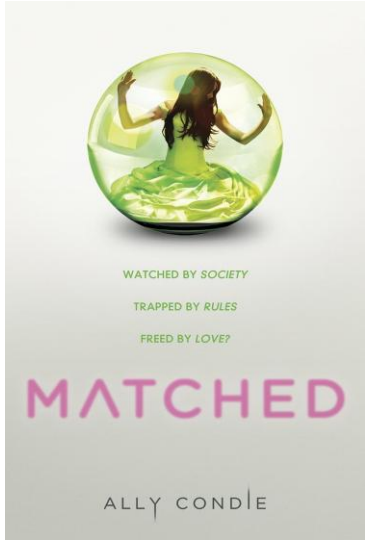
	Key word	Definition
11	apocalyptic	Describing the complete destruction of the world.
12	prophetic	Accurately predicting the future.
13	allegorical	Writing or a picture with a hidden meaning in order to communicate a moral.
14	a moral	Writing which promotes an idea of what is right behaviour.
15	exposition	Yhe background information about the setting and character(s).
16	rising action	A series of incidents that create interest, suspense and tension.
17	climax	The turning point of a narrative, its point of highest tension and drama.
18	falling action	After the climax when the main problem of the story begins to resolve.
19	resolution/ denouement	When the main problem is resolved or worked out: the conclusion.
20	theme	The subject, topic or idea in a piece of writing.
21	back story	A history/background created for a fictional character.
22	flashback	A scene set in a time before the main story.

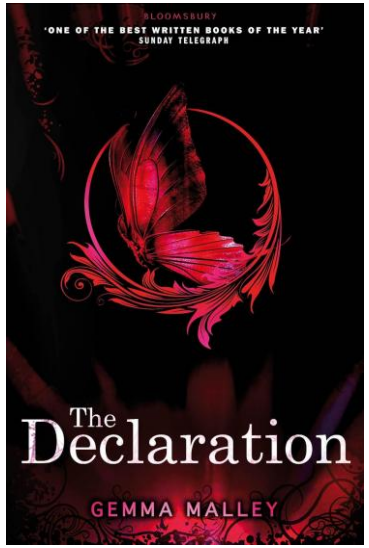
Other great dystopian novels and short stories to read and enjoy...











SHORT STORIES:

'Harrison Bergeron' by Kurt Vonnegut. ***In a future of enforced equality, one boy dares to be different.***

'The Lottery' by Shirley Jackson. ***A small town holds a disturbing annual ritual.***

'The Fun They Had' by Isaac Asimov. ***In a future without schools, two children discover a strange object: a book.***

Year 9 and 10 Knowledge Goals: 'Boys Don't Cry' Malorie Blackman

Boys Don't Cry by Malorie Blackman

Plot Overview

Dante is waiting for the postman. It's 'A' level results day and he has high hopes, but a knock on the door brings an old girlfriend and some news that will change his plans for good. Written from the point of view of two teenaged brothers: Dante, who is looking forward to university and a successful career, unexpectedly finds himself faced with the demands of full-time single parenthood, and Adam, who is happy to be gay and makes no secret of it, but ultimately suffers from the intolerance of those around him.

Key Characters

Dante
Dante is a representation of the complexities of growing up in modern Britain. At the start he reflects the meritocratic ideal that everybody can succeed; he is black and from a single-parent family but gains excellent A Level results and a place at University. However, he is initially selfish and immature in his handling of Emma and his attitude to Melanie. He is also volatile in his reaction to Adam's beating. Ironically it is Emma who teaches him responsibility and tolerance for others.

Adam
Adam is very positive and accepting of his homosexuality at the start of the novel. He is presented as very open about his feelings but is perhaps rather naïve in his assumption that others will accept him as he is. Adam's acceptance of his sexuality reflects the more enlightened views of 21st century society, and it is his loneliness and his fears about his appearance that prompt him to suicide, rather than any confusion over his sexuality.

Mr Bridgeman
Tyler Bridgeman is representative of modern single-parenthood with all its emotional and financial pressures. He also represents a generation of men who are unable to express or come to terms with their own emotions, as 'boys don't cry'. The high standards he sets for Dante cause conflict and appear callous, and it is not until the end of the book that it is revealed that Tyler is in fact trying to protect his son from making the same mistakes he made when young.

Melanie
only appears at the start of the book, and the ending does not make it clear whether she will eventually return to claim her daughter. She represents many of the emotional and financial challenges facing single mothers, especially teenager mothers. Dante's attitude towards her abandonment of her daughter reflect society's strong condemnation of mothers who leave their children.

Collette
Dante's girlfriend is representative of the traditional path many young people aspire to take. She has achieved good grades and has a place at University. However, is presented as immature and intolerant in her attitude towards Emma and involves social services. She is perhaps representative of the 'state' intrusion into the lives of those whose lives do not follow a traditional path.

Josh
is a friend of Dante's. His cruel nature and violent aggression towards Adam reflect his extreme emotional conflict over his sexuality. He is unable to admit to his homosexual feelings and keeps his relationship with Adam a secret. Josh represents the attitude of many in society who still have mixed feelings about open homosexuality.

Emma
her presence in the family is important in bringing Dante and his father closer. She represents innocence in the novel, making Adam realise that appearances do not matter. Emma is described as 'smelling of hope' and helps the family come to terms with what happens to Adam.

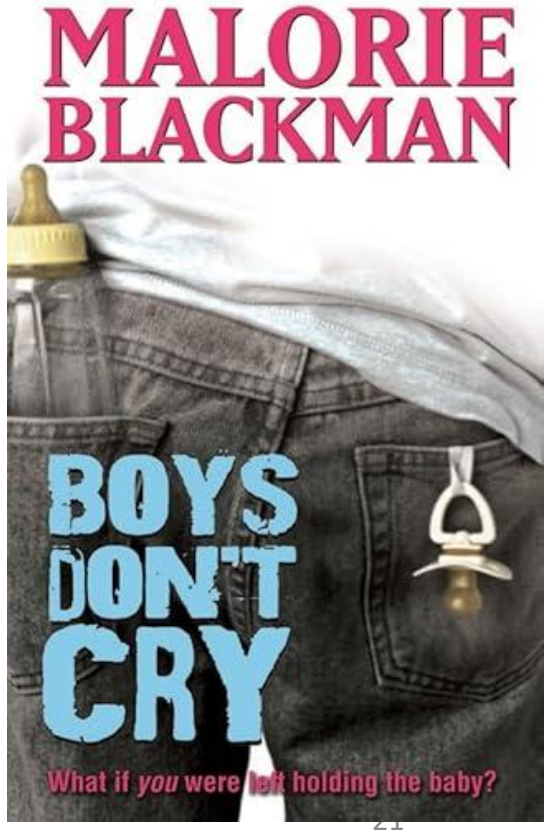
Aunt Jackie
Dante's mother's twin sister but described by him as 'vinegar' compared to his mother's 'honey'. She represents the wider family network and is initially resented by Dante and his father, but she becomes the conduit that brings the two together by showing them that they need to express their feelings.

Context: 20th and 21st Century Britain

Malorie Blackman
has been Children's Laureate since 2013. She was born in London but her parents were originally from Barbados. Until she wrote her best-selling Noughts and Crosses series ethnicity had never been central to her protagonists' lives. "I wanted to show black children just getting on with their lives, having adventures, and solving their dilemmas, like the characters in all the books I read as a child." In Boys Don't Cry, the family's ethnicity is only casually revealed halfway through.

Race
In the 1970s and 1980s, black people in Britain were the victims of racist violence perpetrated by far-right groups such as the National Front. Racism in Britain in general, including against black people, is considered to have declined over time and any discrimination on the basis of race has been enshrined in British law as an offence since 1976. However, incidents such as the Grenfell fire have brought to the forefront issues of poverty and inequality amongst BAME communities.

Sexuality –
There has been a notable increase in the acceptance of homosexuality in the UK in recent years and the LGBTQ movement now holds regular Gay Pride events across the country. Legislation during the latter part of the 20th and the early part of the 21st century made any kind of discrimination on the basis of sexuality illegal and in 2014 legislation was finally passed to allow same sex marriage. However, Adam's experiences with Josh reflect the difficulties still faced by some people when coming to terms with their sexuality.



Year 9 and 10 Knowledge Goals: 'Boys Don't Cry' Malorie Blackman

Context: 20th and 21st Century Britain

Single parents
Unlike the early part of the 20th century, single parent families are far more commonly accepted in the 21st century. They make up nearly a quarter of families with dependent children in the UK. However, 90% of these are women, so Dante's father-led single family is a modern representation of a family unit, and the unusual nature of it is reflected in the initial incredulity with which his friends meet Dante's decision to look after Emma on his own. Melanie's background also reflects the issues facing single mothers, as she feels she has no role model to draw upon in order to raise her own daughter.

The Welfare State
is a system whereby the state provides support to its citizens, and government expenditure on the welfare state is intended to improve societal areas such as health, education, employment and social security. Dante's experience with social services in the novel reflect an essential dichotomy of the welfare state; he is able to draw upon it for support but also has to face the power the state has to take away his daughter. The stigma of 'living off the state' is also reflected in the assumption of the woman in the shop that he is 'living off benefits'.

Education
There has been a continued rise in the number of young people going to university; in the 1960s it was 4%, now it is closer to 50%. Young people now have to stay in education or further training until they are over 18, and A Levels are seen as the gateway to further education, rather than an end in themselves. However, black students historically perform worst at A Level, with the lowest percentage achievement of all ethnic groups. Dante's university aspirations and grades are therefore unusual, particularly as he also comes from a single parent family and his father is not university educated.
.

Themes

Fatherhood & Masculinity
Blackman uses the novel to explore ideas about fatherhood and masculinity, such as the expectations that fathers are disciplinarians in families, and the need for men to hide their feelings for fear of appearing weak.

These ideas are reflected in the tough undemonstrative approach Dante's father takes to his son, and the inability of Dante to ask for help which results in him being filled with 'self-contempt'.

What it means to be masculine in modern society is also explored through the character of Josh, who is unable to face his own sexuality. Ironically, it is females, in the characters of Emma and Aunt Jackie, who help Dante and his father to express their feelings.

Family
Through the Bridgeman family, Blackman explores many aspects of the modern family; emotional issues such as loss of a parent, conflict over sexuality and the financial difficulties faced by single parents. However, despite the unconventional nature of the Bridgeman family, the concept of family is shown throughout the novel to be important.

At the start Melanie's abandonment of Emma because she is unable to cope, highlights the importance of a strong family unit, and it is only through the support of his father and brother that Dante is able to rise to the same challenge himself.

Blackman also presents readers with the idea that modern families do not have to be a traditional nuclear unit in order to be effective – Dante's father comes to terms with his son's sexuality and Aunt Jackie is absorbed as source of support.

Growing up
In some ways the novel is a 'coming of age' novel and reflects many of the complex emotional difficulties facing young people in modern society. For instance, it is recognisable teenage emotional conflict about loneliness and appearance that drives Adam to suicide, not the more obvious fact that he is gay.

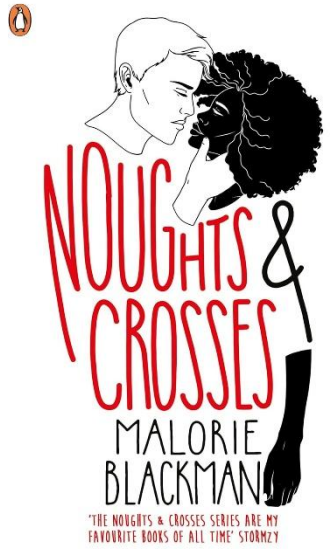
For Dante, his turmoil comes from Emma, who disrupts his carefully constructed life plans. He is shown to be initially resentful towards Emma, but the novel details his growing maturity as he begins first to accept her and then to love her.

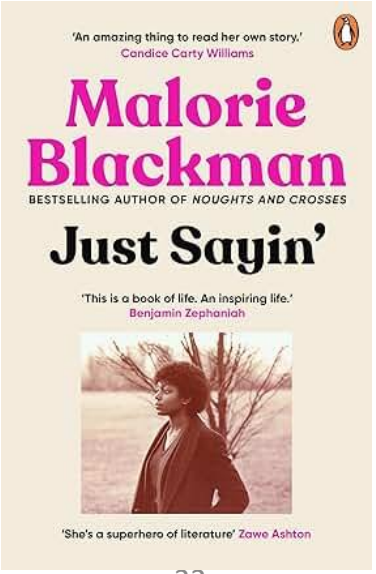
This contrasts with Collette, who also appears to have her future carefully mapped out but ultimately lacks the maturity to handle a relationship with Dante when he takes responsibility for his daughter.

Tolerance
A lack of tolerance leads to expressions of anger and violence throughout the novel. For instance, Dante comes to realise late in the novel that he has tolerated his friend's casual homophobia by calling it 'just a word'. The need for tolerance in terms of sexuality is an obvious theme of Adam's story, with violence presented as the ultimate result of a lack of tolerance.

Other forms of tolerance are explored through Dante's story - he initially only tolerates Emma's presence and it isn't until he fully accepts his fate that he is finally content. Intolerance is also shown towards Melanie, as readers are invited to judge her abandonment of Emma.

Interestingly, racial intolerance is not highlighted through the events of the novel, and the fact that the family are black is only briefly touched upon.





Year 9 and 10 Knowledge Goals: 'Boys Don't Cry' Malorie Blackman

Summer Term: Tier 3 Vocabulary	
Word	**Definition and Synonyms**
bildungsroman	a story which follows the main protagonist from youth into adulthood; a coming-of-age tale
catalyst	a person or thing which triggers a dramatic event or change
dialogue	a conversation between two or more people in a novel
dual narrative	a narrative which is told from two different perspectives
foil	A foil character is a contrast or opposite to the protagonist
homily	a sermon or moral lecture
empathy	the psychological identification with the emotions, thoughts, or attitudes of another
internal monologue	the internal conversations people have in their own minds
linear structure	a story which is told from start to finish in the order evens happen
protagonist	the main character within a story
slur	an insult or word designed to damage someone's reputation
stereotype	a widely held but oversimplified image or idea of a particular type of person or thing
speech tag	the verb or adverb which indicates how a character says something (hissed, shouted angrily)
subplot	a secondary plot within a novel

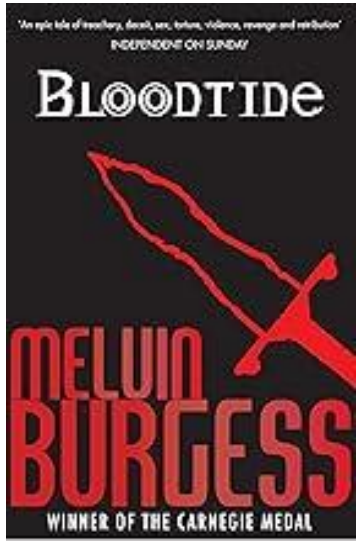
Year 9 and 10 Knowledge Goals: 'Boys Don't Cry' Malorie Blackman

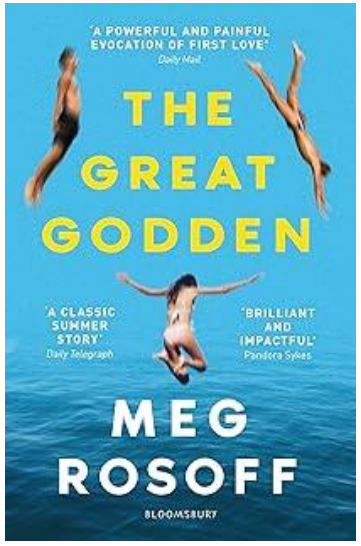
Summer Term: Tier 2 Vocabulary	
Word	**Definition and Synonyms**
derogatory	critical, negative or disrespectful; used to describe tone, manner or language
enigma	a puzzling or inexplicable occurrence or situation
gender	the characteristics of women, men, girls and boys that are socially constructed
homophobic	having or showing a dislike of or prejudice against gay people
masculinity	qualities or attributes regarded as characteristic of men
naive	a person or action showing a lack of experience, wisdom, or judgement; innocent
nuclear family	a couple and their dependent children; regarded as a basic social unit
paternal	of or relating to a father
pejorative	a type of word which expresses contempt, hatred or disapproval
prejudice	a preconceived opinion that is not based on reason or actual experience
sexuality	a person's identity in relation to the gender/s to which they are typically attracted; sexual orientation
stereotype	a widely held but fixed and oversimplified image or idea of a particular type of person or thing
unconventional	not conforming to what is generally done or believed
volatile	a person liable to display rapid changes of emotion

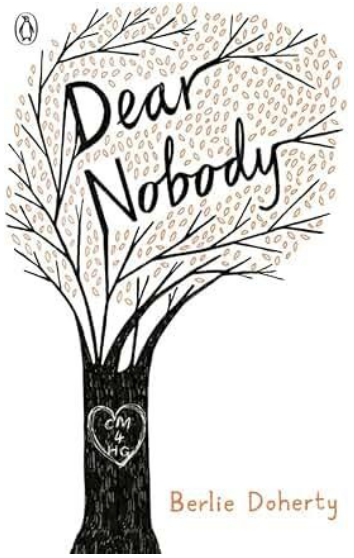
Year 9 and 10 Knowledge Goals: English 'Boys Don't Cry' Further Reading

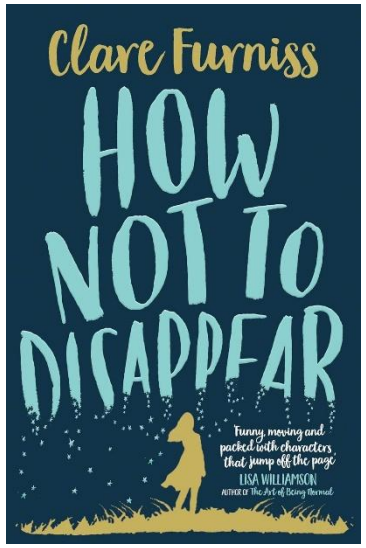
Settlebeck School
Respect | Responsibility | Aspiration

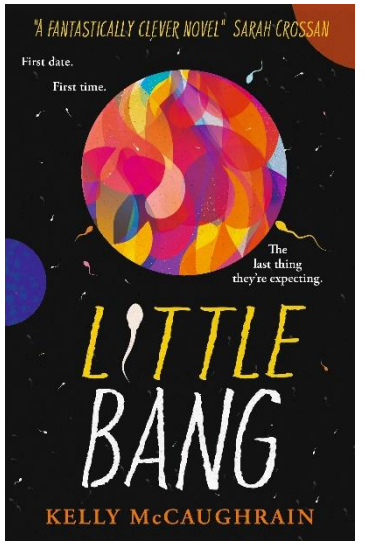
Other great YA novels and memoirs to read and enjoy...

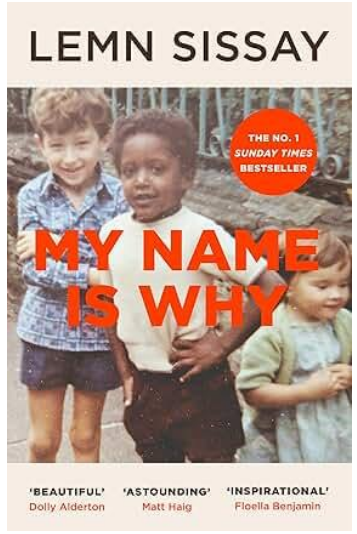


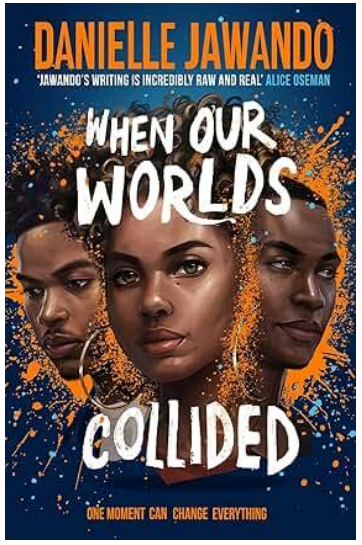


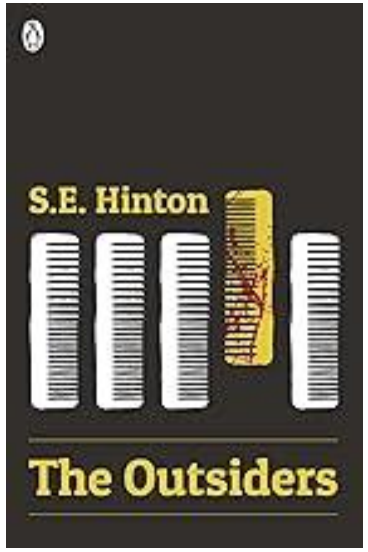


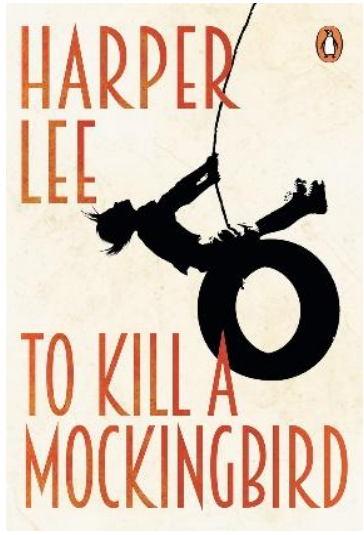


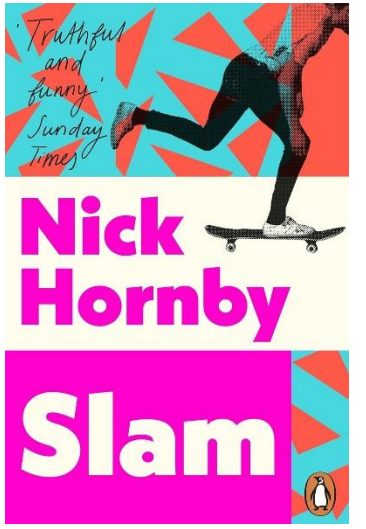












Year 9 and 10 Knowledge Goals: Food Technology

Teenagers have unique nutritional requirements due to rapid growth, hormonal changes, and increased energy needs. Here are the key nutrients they need:

Energy (Calories)
Boys typically need **2,500–2,800 kcal/day**, and girls need **2,000–2,200 kcal/day**, depending on activity levels.

Protein
Essential for growth, muscle development, and repair.

Carbohydrates
The main source of energy.
Should come from **complex carbohydrates** like whole grains, fruits, vegetables, and legumes, rather than sugary snacks.

Fats
Important for brain development and hormone production.
Focus on **healthy fats**

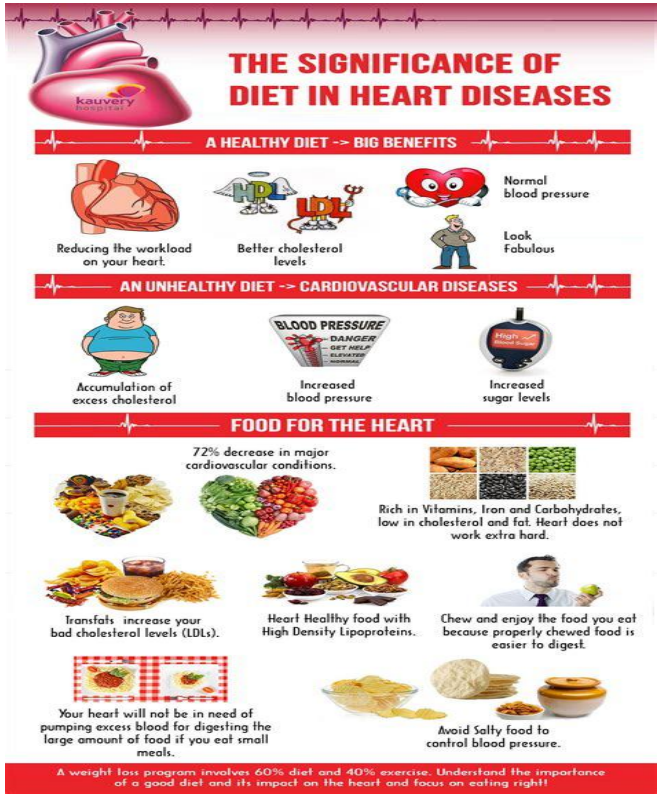
Calcium
Essential for strong bones and teeth, especially to help achieve **peak bone mass** and prevent osteoporosis later in life.

Vitamin D
Helps the body absorb calcium.

Iron
Needed for red blood cell production and to prevent **anaemia**, especially in teenage girls due to menstruation.

Vitamin C
Supports the immune system and helps absorb iron.

Fibre
Supports digestion and prevents constipation.

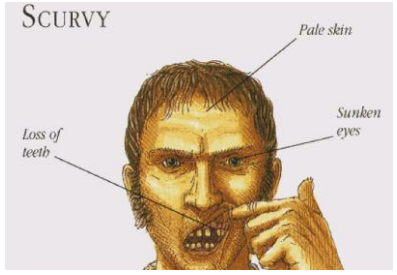


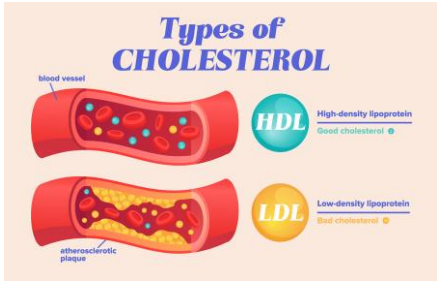
Diet during pregnancy

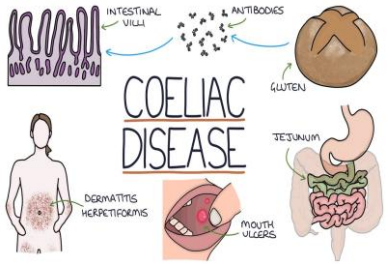
- **Calories** – Increased energy intake, especially in the second and third trimesters (around 300 extra kcal/day).
- **Protein** – Essential for the growth of the baby's tissues, including the brain, and the formation of placenta. Aim for around 71 grams of protein per day.
- **Folic Acid (Vitamin B9)** – Crucial for preventing neural tube defects. Aim for 400-600 mcg/day before and during early pregnancy.
- **Iron** – To support increased blood volume and prevent anaemia. Recommended intake is about 27 mg/day.
- **Calcium** – For the development of the baby's bones and teeth. Aim for 1,000 mg/day (increased to 1,300 mg if under 19).
- **Vitamin D** – Helps calcium absorption and supports immune function. Aim for 600 IU/day.
- **Omega-3 Fatty Acids** – Important for the baby's brain development. Sources include fish and fortified foods.
- **Water** – Increased fluid intake to stay hydrated and support amniotic fluid. Aim for about 8-10 cups per day.
- **Iodine** – Essential for thyroid function and baby's brain development. Aim for 220 mcg/day.

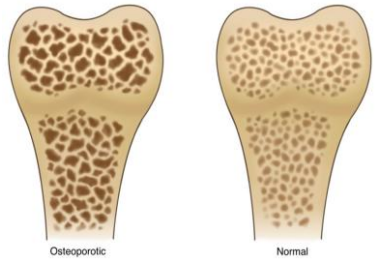
Elderly people should reduce fat and protein and ensure they have plenty of calcium and vitamin D

Younger children should have plenty of protein, vitamins and minerals.
Small portions on a regular basis.









Year 9 and 10 Knowledge Goals: Food Technology

Tier 3 Vocabulary

	Key word	Definition
1	gluten-free	A diet that avoids gluten, a protein found in wheat, barley, and rye, often followed by people with coeliac disease or gluten intolerance.
2	coeliac disease	An autoimmune condition where the immune system reacts to gluten, damaging the small intestine lining.
3	lactose intolerance	A condition where the body lacks the enzyme lactase, making it difficult to digest lactose, the sugar found in milk and dairy products.
4	dairy-free diet	A diet that avoids all dairy products, often followed by people with lactose intolerance or a milk allergy.
5	scurvy	A disease caused by a deficiency of vitamin C (ascorbic acid), leading to symptoms such as fatigue, swollen gums, joint pain, and bruising. It was historically common among sailors who lacked fresh fruits and vegetables in their diet
6	anaemia	A condition where the body has a lower than normal number of red blood cells or a lack of haemoglobin, leading to reduced oxygen transport in the blood. It often results in symptoms like fatigue, weakness, and pale skin. Iron-deficiency anaemia is the most common type and is caused by a lack of iron in the diet.
7	rickets	A disease caused by a deficiency of vitamin D, calcium, or phosphate, leading to weak and soft bones, skeletal deformities, and delayed growth in children. It can result in symptoms such as bowed legs, muscle weakness, and bone pain.
8	peak bone mass	The maximum bone density and strength a person reaches, usually in their late teens to early twenties. Achieving a high peak bone mass through a diet rich in calcium and vitamin D, along with regular weight-bearing exercise, helps reduce the risk of osteoporosis later in life
9	cholesterol	A type of fat (lipid) found in the blood that is essential for building cell membranes, producing hormones, and making vitamin D
10	coronary heart disease	A condition where the coronary arteries, which supply oxygen-rich blood to the heart, become narrowed or blocked due to a build up of fatty deposits (atherosclerosis). This can lead to symptoms like chest pain (angina), shortness of breath, and an increased risk of heart attacks.
11	Body Mass Index	A measurement that assesses a person's body weight in relation to their height.
12	osteoporosis	A condition where bones become weak, brittle, and more prone to fractures due to a loss of bone density. It is often caused by aging, hormonal changes, or a lack of calcium and vitamin D in the diet.

Notes

Year 9 and 10 Knowledge Goals: French

1. **Et à l'avenir où veux-tu habiter?**

2. **Alors ta maison idéale, c'est comment ?**

je voudrais habiter

- dans une grande maison
- dans un appartement de luxe
- dans un cottage

- au centre-ville
- au bord de la mer
- à la campagne
- à la montagne

A. Je fais mon lit
B. Je fais la vaisselle
C. Je fais le repassage
D. Je fais les courses
E. Je fais la cuisine
F. Je fais le jardinage
G. Je fais la lessive
H. Je passe l'aspirateur
I. Je mets la table
J. Je débarrasse la table
K. Je range ma chambre
L. Je lave la voiture
M. Je sors la poubelle

Year 9 and 10 Knowledge Goals: French

Tier 3 Vocabulary		
	Key word	Definition
1	**pronunciation**	The way in which a word is pronounced
2	**Fluency**	The ability to speak or write a foreign language easily and accurately. Fluency is not speed.
3	**Phonics**	A method of teaching people to read by correlating sounds with symbols in an alphabetic writing system.
4	**past participle**	The form of a verb typically ending in **é/u/i**
5	**Stem**	The root or main part of a word, to which inflections or formative elements are added.
6	**Infinitive**	The basic form of a verb, without an inflection binding it to a particular subject or tense.
7	**auxilary verbs**	Avoir and être used in the Past tense

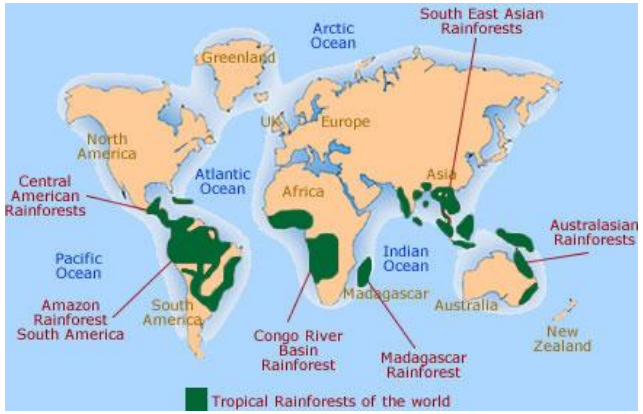
Languagenut
Exam skills
KS4

https://forms.office.com/e/9YuBGF2EV6

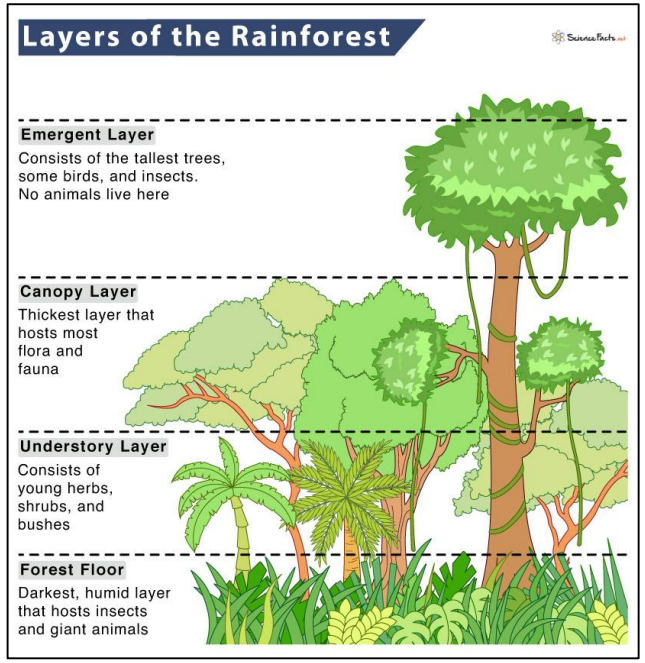
Notes

Year 9 and 10 Knowledge Goals: Geography

Distribution of Rainforests



Layers of the Rainforest



Importance of the Rainforest

Biodiversity – 90% of worlds invertebrates and 60% of worlds plants founds in rainforests

Medicine - 25% of all medicines originate from findings in the rainforest e.g some cancer or dementia drugs

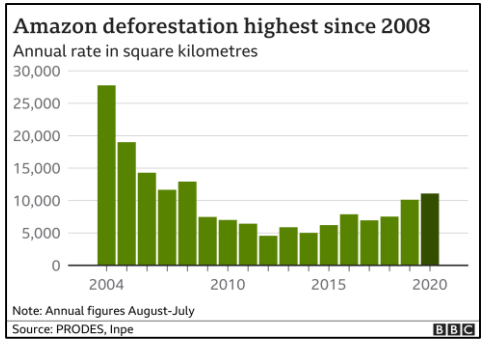
Foods- a rich source of food for people

Climate – much of the worlds climate is regulated and controlled by tropical rainforests.

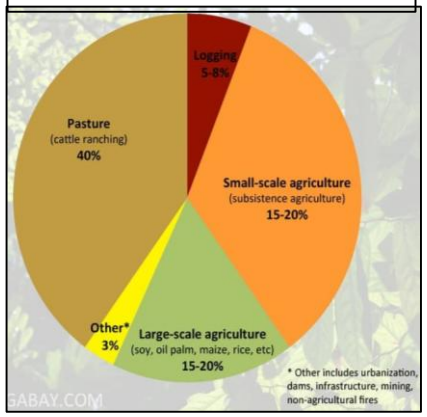
Carbon sink – rainforests can soak up much of the carbon dioxide from our atmosphere, releasing oxygen, they are considered the 'lungs of the planet'

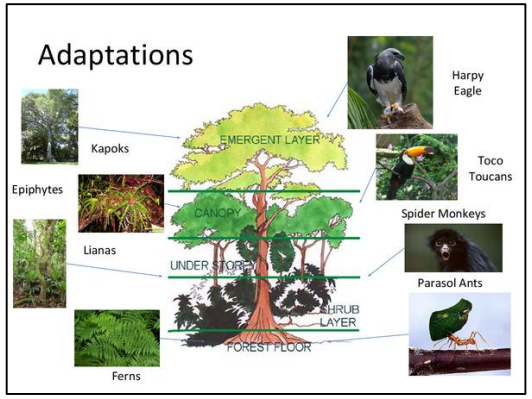
People – over 100 indigenous tribes in Rainforest, some still undiscovered with their own rich cultures dating back thousands of years.

Erosion and flooding – Rainforests prevent huge swathes of land being eroded away and can prevent vast areas from being flooded



Causes of deforestation





Impacts of deforestation

1. Increased erosion of land.
2. Increased risk of flooding.
3. Loss of habitat
4. More animals endangered or extinct.
5. More plants endangered or extinct.
6. More greenhouse gasses in our atmosphere.
7. Climate changes on a local, regional and global scale.
8. Loss of indigenous peoples and cultures.
9. Loss of possible medicines and foods undiscovered.

Solutions to deforestation

1. Sustainable farming methods.
2. Selective logging
3. International agreements
4. National parks and protected lands
5. Carbon offsetting
6. Ecotourism
7. Debt relief
8. Sustainable development.

Year 9 and 10 Knowledge Goals: Geography

Tier 3 Vocabulary		
Key word		Definition
1	ecosystem	A biological community of interacting organisms and their physical environment.
2	biome	A major community of plants and animals with similar life forms and environmental conditions.
3	adaption	The process in which a living thing changes slightly over time to be able to continue to exist in a particular environment.
4	environment	The surroundings or conditions in which a person, animal, or plant lives or operates.
5	flora	The plants of a particular region or habitat.
6	fauna	The animals of a particular region or habitat.
7	canopy	The upper parts of the trees house birds, insects, arachnids, reptiles and mammals in its leafy environment.
8	emergent layer	The layer where the most sunlight reaches and the tallest plants and trees reach.
9	forest floor	The lowest layer in a tropical rainforest, only receiving 2% of the sunlight, making it dark, damp, and hot.
10	predator	An animal that hunts, kills, and eats other animals.
11	prey	An animal that is hunted and killed by another for food.
12	biodiversity	The variety of plant and animal life in in a particular habitat.
13	deforestation	The action of clearing a wide area of trees.

Notes:

Quiz QR Code	Quiz Link
	Quiz Link

Year 9 and 10 Knowledge Goals: History

Context of the British sector of the Western Front

The Ypres Salient: Germans had the advantage with being on the higher ground. Tunnelling and mines were used by the British at Hill 60.
First Battle of Ypres - 1914.
Second Battle of Ypres -1915.
Third Battle of Ypres - 1917.

The Somme: Battle of the Somme - July-November 1917.
1st day of battle, 60,000 casualties and 20,000 died.
In total, 400,000 Allied casualties and this put pressure on medical services on the Western Front.

Arras: Battle of Arras - 1917.
Before the battle, Allied soldiers dug tunnels below Arras.
Tunnels led to rooms and included an underground hospital.

Cambrai: Battle of Cambrai -1917. 450 tanks used to advance on the German position, however, plan did not work because there was not enough infantry to support.

Impact of terrain on helping the wounded: Difficult to move around, + night, communication was difficult, collecting wounded from No Man's Land was dangerous. Stretcher bearers found it difficult to move around corners and transport of the wounded was difficult because of this.

Conditions requiring treatment on the Western Front

Ill health: Trench fever: caused by body lice and included flu-like symptoms including high temperature. **Treatment:** Passing electric current through infected area was effective. **Prevention:** Clothes disinfected and delousing stations were set up. Affected 0.5 million.
Trench foot: caused by soldiers standing in mud/waterlogged trenches. **Treatment:** soldiers advised to keep clean but worst cases, amputation. **Prevention:** Changing socks + keeping feet dry and rubbing whale oil into feet. Affected 20,000 in winter of 1914-1915.
Shell-shock: caused by stressful conditions of war and symptoms included tiredness, nightmares, headaches and uncontrollable shacking. **Treatment:** Not well understood. **Prevention:** rest and some received treatment in UK. Affected 80,000 and some were shot!
Weapons of war: Rifles: fired one at a time/loaded from cartridge case creating rapid fire.
Machine guns: Fired 500 rounds a minutes. Pierced organs and fracture bones.
Artillery: Bombardments were continuous, Artillery fire caused half of all causalities.
Shrapnel: Caused maximum damage exploded mid-air above enemy. Killed/injured.
Chlorine Gas: Led to death by suffocation. 1915, gas masks given to all British soldiers.
Phosgene Gas: Faster acting than Chlorine but with similar effects. Could kill within 2 days.
Mustard Gas: Odourless gas, worked in 12 hours. Caused blisters, burn the skin easily.

Helping the wounded on the Western Front

Evacuation route: Survival depended on speed of treatment. Care improved as war progressed. 1914 – 0 motor ambulances but by 1915, it was 250. Ambulance trains were introduced, as well as, ambulance barges used along River Somme.
Stretcher bearers: Collect wounded, 16 in each battalion + 4 for each stretcher.
Regimental Aid Post: Always close to the front line and staffed by a Medical officer selected those who were lightly wounded/needed more attention.
Field Ambulance and Dressing Station: Emergency treatment for wounded.
Casualty Clearing Station: Large, well equipped station, 10 miles from trenches.
Base Hospitals: X-ray, operating theatre and areas to deal with gas poisoning.
Underground hospital at Arras: Running water, 700 beds and operating theatre.
RAMC: Involved medical officers and learnt about wounds never seen before.
FANY: Volunteer nurses, who helped the wounded and also drove ambulances.

The impact of the Western Front on Medicine

The Thomas Splint: Stopped joints moving and increased survival rates from 20 to 82%. Reduced infection from compound fractures.
X-rays: Developed in 1895, X-rays used to diagnose issues before operations. But there were some problems: X-ray could not detect all problems, were fragile and overheat.
Mobile X-rays: 6 operated on the front line, used to locate shrapnel and bullet wounds. Transported around in a truck and enabled soldiers to be treated more quickly.
Blood Transfusions: Blood loss = major problem. Blood transfusions used at Base Hospitals by a syringe and tube to transfer blood from patient to donor. Extended to CCS from 1917.
Blood bank at Cambrai: Adding Sodium Citrate allowed blood to be stored for longer. Blood was stored in glass bottles at a blood bank and used to treat wounded soldiers.
Brain surgery: Magnets used to remove metal fragments from the brain. Local anaesthetic.
Plastic surgery: Harold Gillies developed new techniques, skin drafts developed for grafts.

Year 9 and 10 Knowledge Goals: History

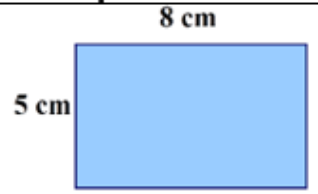
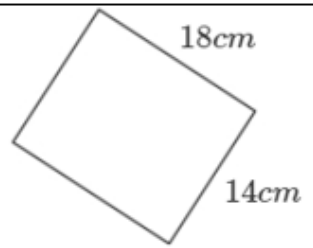
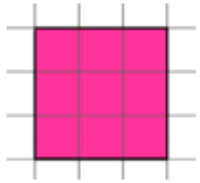
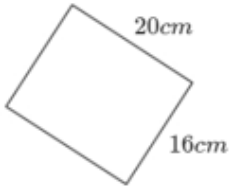
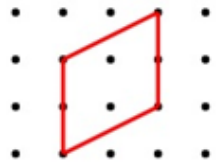
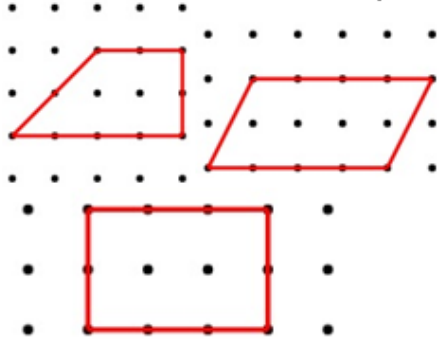
Key words
No Man's Land: Land between Allied and German trenches in WW1.
Trenches: Long, narrow ditches dug during the First World War.
Ypres Salient: Area around Ypres where many battles took place in WW1.
Gangrene: When a body decomposes due to a loss of bloody supply.
Shrapnel: A hollow shell filled with steel balls or lead, with gunpowder and a time fuse.
FANY: First Aid Nursing Yeomanry. Founded in 1907 by a soldier who hoped they would be a nursing cavalry to help the wounded in battle.
RAMC: Royal Army Medical Corps. This organisation organised and provided medical care. It consisted of all ranks from doctors to ambulance drivers and stretcher bearers.
Triage: A system of splitting the wounded into groups according to who needed the most urgent attention.
Compound Fracture: Broken bones pierces the skin + increases risk of infection in wound.
Debridement: Cutting away of dead and infected tissue from around the wound.
Gas Gangrene: Infection that produced gas in gangrenous wounds.
Mobile X-ray unit: Portable X-ray unit that could be moved around the Western Front.
Radiology department: Hospital department where X-rays are carried out.
Blood transfusions: Blood taken from a healthy person and given to another person.
General anaesthetic: Putting a patient to sleep during an operation.
Local anaesthetic: Area being operated on is numbed to prevent pain + patient awake.

Notes:

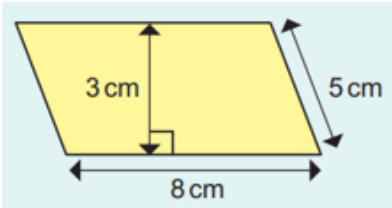
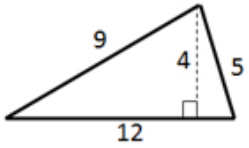
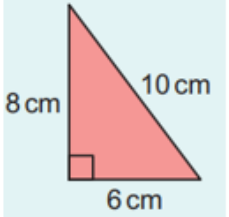
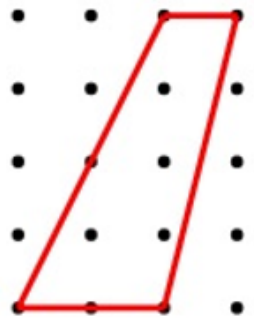
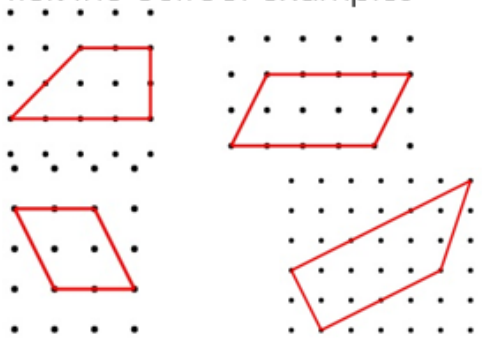
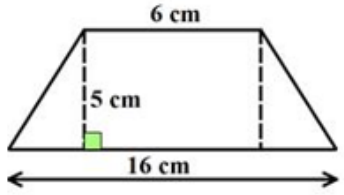
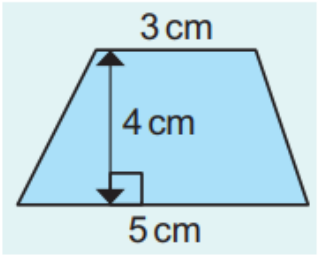
Use the information on the other side of this sheet to focus your home learning. This is a guide to the unit that we are currently studying in school. If you miss any lessons, or feel that you didn't understand any of the topics on here, then you can see more for more guidance, or use this as a basis for more independent learning.

Quiz QR Code	Quiz Link
	https://forms.office.com/e/zChyWfP9Mn

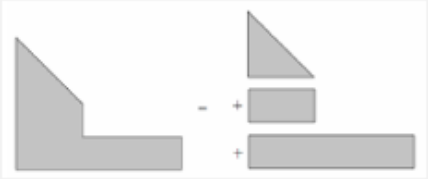
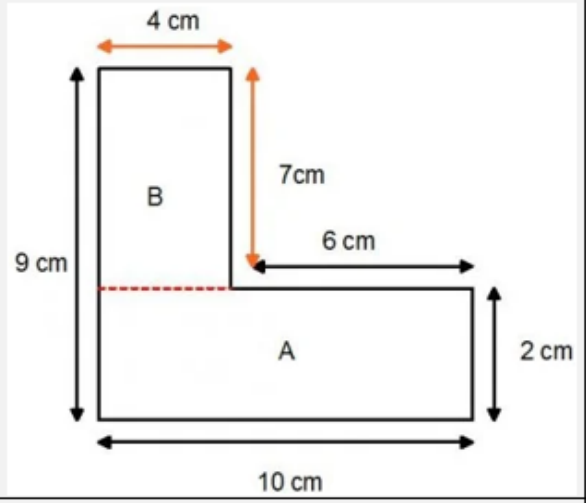
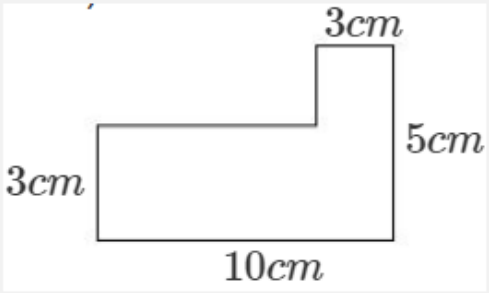
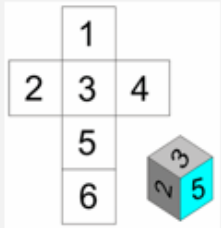
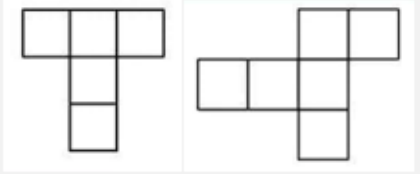
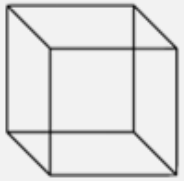
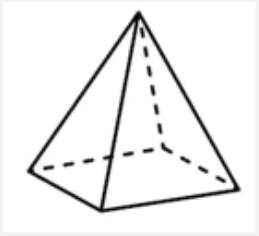
Year 9 and 10 Knowledge Goals: Foundation – Area, Perimeter, Volume

Topic/Skill	Definition/Tips	Example	Your Turn
Perimeter	The **total distance** around the **outside** of a shape. Units include: mm, cm, m etc.	 $P = 8 + 5 + 8 + 5 = 26cm$	
Area	The amount of **space inside** a shape. Units include: mm^2, cm^2, m^2	 Area : 9 squares	 Area:
Area of a Rectangle	**Length x Width**	 $A = 9x4 = 36cm^2$	
Parallelogram	A parallelogram has **two pairs of parallel sides.**		Tick the correct examples 

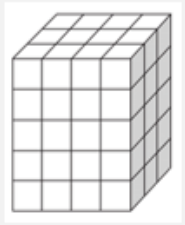
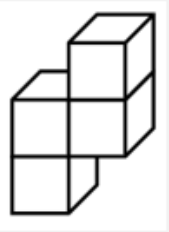
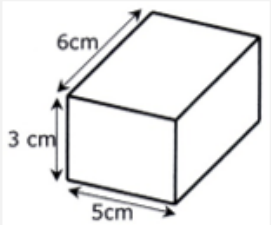
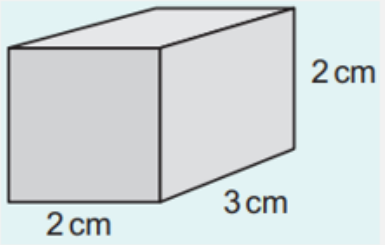
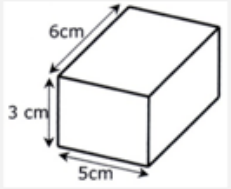
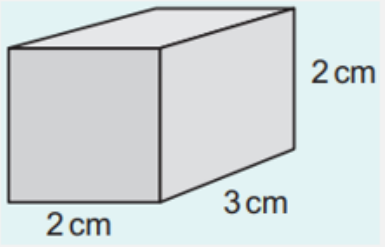
Year 9 and 10 Knowledge Goals: Foundation – Area, Perimeter, Volume

Area of a Parallelogram	**Base x Perpendicular Height** Not the slant height.	 $A = 3x7$ $= 21cm^2$	
Area of a Triangle	$\frac{Base\ x\ Height}{2}$ **(Perpendicular** Height – has to meet the base at **90o)**	 $A = \frac{12x4}{2}$ $=24cm^2$	
Trapezia	A trapezium is a quadrilateral with **just one pair of parallel sides.**		Tick the correct examples 
Area of a Trapezium	$\frac{(a+b)}{2} \times h$ "Half the sum of the parallel side, times the height between them. That is how you calculate the area of a trapezium"	 $A = \frac{16+6}{2} \text{x } 2$ $= 55cm^2$	

Year 9 and 10 Knowledge Goals: Foundation – Area, Perimeter, Volume

Compound Shape	A shape made up of a **combination of other known shapes** put together.		What shapes is this compound made out of?
Find the Missing Lengths of a Compound Shape	Use the opposite lengths of rectangles to work out parts of a side and then subtract to get the rest.		Find the missing lengths 
Net	A pattern that you can **cut and fold** to make a **model** of a **3D shape**.		Tick the net of a cube 
Properties of Solids	**Faces = flat surfaces** **Edges = sides/lengths** **Vertices = corners**	A cube has 6 faces, 12 edges and 8 vertices. 	 A square-based pyramid has…

Year 9 and 10 Knowledge Goals: Foundation – Area, Perimeter, Volume

Volume	Volume is a measure of the amount of space inside a solid shape. Units: mm^3, cm^3, m^3 etc.		 Volume: $4cm^3$
Volume of a Cube/Cuboid	$\boldsymbol{V = Length \times Width \times Height}$ $\boldsymbol{V = L \times W \times H}$ You can also use the Volume of a Prism formula for a cube/cuboid.	 volume = 6 x 5 x 3 = 90 cm^3	
Surface area a Cube/Cuboid	The total area of all the faces of a cube/cuboid	 Area of front and back = 3 x 5 x 2 = $30cm^2$ Area of left and right = 3 x 6 x 2 = $36cm^2$ Area of top and bottom = 5 x 6 x 2 = $60cm^2$ Surface area = 30 + 36 + 60 = $126cm^2$	

Year 9 and 10 Knowledge Goals: Foundation – Tier 3 Vocabulary

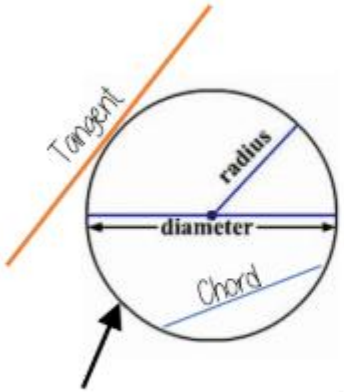
Settlebeck School

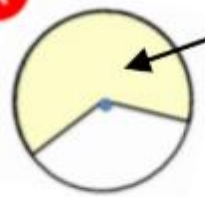
Tier 3 Vocabulary		
	Key Word	**Definition**
1	Perimeter	The total distance around the edge of a 2D shape.
2	Area	The amount of space inside a 2D shape, measured in square units (e.g., cm^2).
3	Parallelogram	A quadrilateral with two pairs of opposite sides that are equal and parallel.
4	Trapezium	A quadrilateral with one pair of parallel sides.
5	Height (altitude)	The vertical distance from the base to the top of a shape.
6	Base	The bottom side of a shape used in area calculations.
7	Cuboid	A 3D shape with 6 rectangular faces.
8	Prism	A 3D shape with a uniform cross-section - like a triangular prism.
9	Surface Area	The total area of all the faces (outside parts) of a 3D shape.
10	Volume	The amount of space inside a 3D shape, measured in cubic units (e.g., cm^3).
11	Compound Shape	A shape made from two or more simple shapes joined together.
12	Conversion	Changing between different units (like m^2 to cm^2 or litres to cm^3).
13	Hectare (ha)	A unit of area equal to 10,000 square metres (m^2).
14	Estimate	A sensible guess or rough calculation.
15	Missing Length	A side of a shape you need to calculate using area or other information.

Year 9 and 10 Knowledge Goals: Higher – Circles, Arcs, Sectors

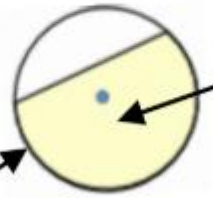
Parts of a circle

R





Sector (part of the circle made from two radii)



Segment (part of the circle made from a chord)

Circumference

An arc is a part of the circumference

Fractional parts of a circle

A circle is made up of 360°

Formula to remember:
Area of a circle = πr^2
Circumference of a circle = πd or $2\pi r$

30° represents $\frac{30}{360}$ of a full circle

$\frac{30}{360} = \frac{1}{12}$

$\frac{270}{360}$ of a full circle (in degrees)

$\frac{6}{8}$ of a full circle (in equal parts)

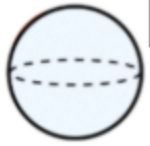
$\frac{3}{4}$ of a full circle

The fraction of the circle is as $\frac{\theta}{360}$

θ represents the degrees in the sector

Surface area of a sphere

Surface area = $4\pi r^2$



Radius = 5cm

Surface area = $4\pi r^2$

$= 4 \times \pi \times 5^2$

$= 4 \times \pi \times 25$

$= \underline{100\pi}$

The curved surface area of a sphere

A hemisphere has the curved surface AND a flat circular face

$= 100\pi \div 2 = 50\pi$

$= 50\pi + \pi \times 5^2$

Hemisphere $= \underline{75\pi}$

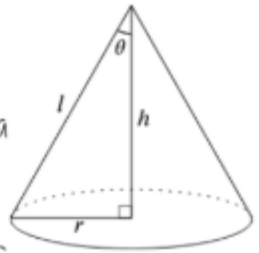
Surface area of cones and cylinders

Surface area cylinder = $2\pi r^2 + \pi dh$

The area of two circles (top and bottom face) + the area of the curved face

The length of shape B is the circumference of the circles

Curved surface area Cone = πrl



Look out for the use of Pythagoras to calculate the length l

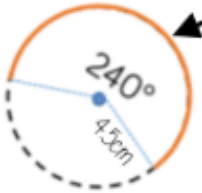
Total surface area = curved face + circle face (area of base)

Year 9 and 10 Knowledge Goals: Higher – Circles, Arcs, Sectors

Arc length

Remember an arc is part of the circumference

Circumference of the whole circle = $\pi d = \pi \times 9 = 9\pi$



Arc length = $\frac{\theta}{360} \times$ circumference

$= \frac{240}{360} \times 9\pi$

$= \frac{2}{3} \times 9\pi = 6\pi$

Perimeter

Perimeter is the length around the outside of the shape

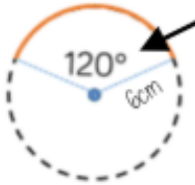
This includes the arc length and the radii that encloses the shape

Perimeter = $\frac{\theta}{360} \times$ circumference $+ 2r$ $= 6\pi + 9$

Sector area

Remember a sector is part of a circle

Area of the whole circle = $\pi r^2 = \pi \times 6^2 = 36\pi$

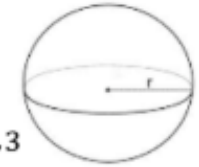


Sector area = $\frac{\theta}{360} \times$ area of circle

$= \frac{120}{360} \times 36\pi$

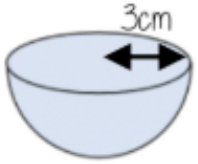
$= \frac{1}{3} \times 36\pi = 12\pi$

Volume of a sphere



Volume Sphere = $\frac{4}{3}\pi r^3$

NOTE: This is now a **cubed** value



Volume Sphere = $\frac{4}{3}\pi r^3$

$= \frac{4}{3} \times \pi \times 3^3$

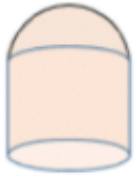
$= \frac{4}{3} \times \pi \times 27 = 36\pi$

A hemisphere is half the volume of the overall sphere

$= 36\pi \div 2$

$= 18\pi$

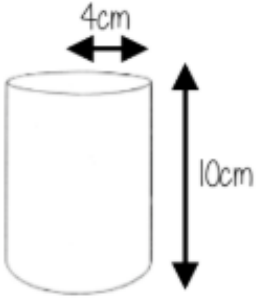
Look out for hemispheres being placed on other 3D shapes, e.g cones and cylinders



Volume of a cone and a cylinder

Volume Cylinder = $\pi r^2 h$

A cylinder is a prism – cross section is a circle



$V = \pi r^2 h$

$= \pi \times 4^2 \times 10$

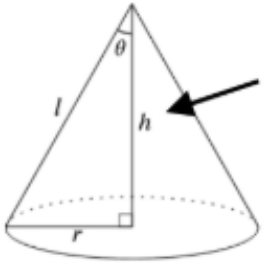
$= \pi \times 160$

$= 160\pi$ cm^2

Give your answer in terms of π' means NOT in terms of pi $= 502.7$cm^2

Volume Cone = $\frac{1}{3}\pi r^2 h$

A cone is a pyramid with a circular base



The height of a cone is the perpendicular height from the vertex to the base

Look out for trigonometry or Pythagoras theorem – the radius forms the base of a right-angled triangle

Year 9 and 10 Knowledge Goals: Higher – Bounds and Error Intervals

Settlebeck School

What you need to know: Rounding and Truncation to state error intervals

The upper and lower bound come from the largest and smallest values that would **round** to a particular number.

Take 'half a unit above and half a unit below'. For example rounded to 1 d.p means nearest 0.1, so add 0.05 and subtract 0.05 to get the bounds.

All error intervals look the same like this:

$$\leq x <$$

The lowest value a number could have been is the lower bound.
The highest value a number could have been is the upper bound.

E.g. 1 State the upper and lower bound of 360 when it has been **rounded** to 2 significant figures:
2 significant figures is the nearest 10, so 'half this' to get 5, and add on to 360 and take it off 360,

$$355 \leq x < 365$$

Note: You should know it could be 364.9999... but we write 365 as the upper bound for ease of calculations.

E.g. 2 **Truncation:** State the error interval of 4.5 when it has been **truncated** to 1decimal place. This means it has been 'chopped off'. The lowest value it could have been is 4.5, thehighest is 4.59999... so in an error interval

$$4.45 \leq x < 4.55$$

Notes:

Year 9 and 10 Knowledge Goals: Higher –Tier 3 Vocabulary

Settlebeck School

Tier 3 Vocabulary		
	Vocabulary	**Definition**
1	Compound Shape	A shape made by joining two or more simple shapes.
2	Trapezium	A 4-sided shape with one pair of parallel sides.
3	Metric Units	Units of measurement based on powers of 10 (e.g., mm, cm, m, km).
4	Circumference	The distance around the edge of a circle.
5	π (Pi)	A constant (≈ 3.14159) used in calculations involving circles.
6	Sector	A part of a circle shaped like a slice of pizza, defined by two radii.
7	Arc	A curved part of the circumference of a circle.
8	Radius	The distance from the centre of a circle to any point on its edge.
9	Diameter	The distance across a circle through its centre (twice the radius).
10	Prism	A 3D shape with two identical, parallel faces and flat sides connecting them.
11	Cylinder	A 3D shape with two circular bases and one curved side.
12	Sphere	A perfectly round 3D shape, like a ball.
13	Pyramid	A 3D shape with a polygon base and triangular faces that meet at a point.
14	Cone	A 3D shape with a circular base and one curved side that ends in a point.
15	Error Interval	The range of possible values a measurement can be, based on rounding.
16	Upper/Lower Bound	The highest (upper) or lowest (lower) value a rounded number could be.

Year 9 and 10 Knowledge Goals: Media

Uses and Gratification Theory

The need to be **INFORMED** & **EDUCATED** about the world in which they live.

The need to **IDENTIFY** personally with characters and situations in order to learn more about themselves.

The need to be **ENTERTAINED** by a range and variety of well constructed texts.

The need to use media as a talking point for SOCIAL **INTERACTION** & **DISCUSSION**.

The need to **ESCAPE** from their 'daily grind' into other worlds and situations.

Theories

- The dominance of this image suggests she is the protagonist of this narrative, the 'hero' according to Vladimir Propp's character theory. She is heroic because she is embracing sport; she doesn't appear to care what anyone thinks and has shed any inhibitions.

Media Lang

- Advert features a mid-shot of a woman exercising
- She is not a celebrity, making her relatable to ordinary women
- The woman is the protagonist of the narrative and is heroic for embracing sport
- The campaign uses a mantra, "Sweating like a pig, feeling like a fox", to turn a derogatory comment into a positive statement
- The name of the campaign, "This Girl Can", is a positive statement that reinforces the idea that all women should exercise
- Hashtag #thisgirlcan connects readers to the campaign's social media pages
- The advert has a raw, unpolished finish and features real women as aspirational role models

Representation

- Campaign aims to encourage women to participate in physical activities by challenging dominant ideology
- Portrays women positively to challenge stereotypes and convince women of their potential
- Uses "real" women without glossy finish to make them aspirational role models for readers
- Brand name "This Girl Can" uses "girl" as an all-encompassing term to make women feel included and a united front
- "Girl" used instead of "woman" may make older women feel disconnected from the campaign

Year 7 and 8 Knowledge Goals: Media

Tier 3 Vocabulary		
Key word		Definition
1	historical context	The circumstances, events, and conditions that existed at a particular time.
2	audience	Spectators or listeners.
3	personal identity	Sense of self that an individual develops, encompassing their beliefs, values, experiences, and personality
4	information	Facts provided or learned about something or someone
5	escapism	The tendency to seek distraction and relief from (sometimes unpleasant) realities, especially by seeking entertainment or engaging in fantasy.
6	social integration	The process by which individuals become part of a wider society, participating in its social structures and relationships.
7	ideology	A system of ideas and ideals, especially one which forms the basis of economic or political theory and policy.
8	stereotype	A widely held, but oversimplified and often inaccurate, belief about a particular group of people
9	character theory	Propp's theory of several archetypal character roles that often appear in fairy tales and narratives, including the hero, villain, donor, helper, princess/reward, dispatcher, and false hero.
10	representation	The way aspects of society, like people, issues, and events, are depicted in media products

Notes:

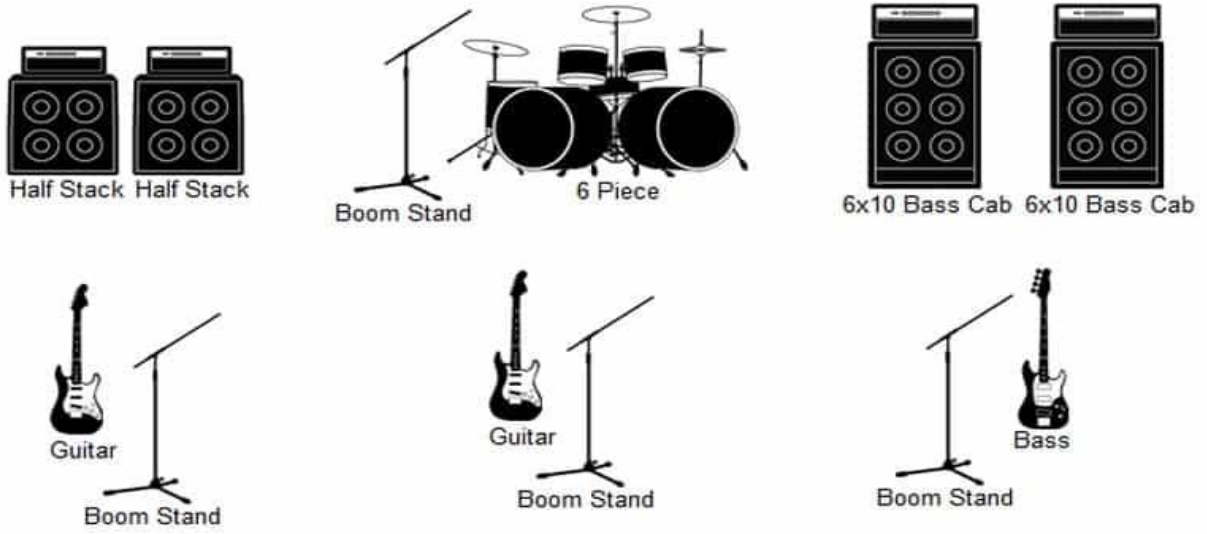
Year 9 and 10 Knowledge Goals: Music

Creating a Live Performance:

Checklist of what is involved:

- Choose repertoire
- Research detailed information about the repertoire including music and lyrics.
- Rehearse repertoire: learn to perform the music, change and improve, both as an ensemble and individually as required.
- Develop stage presence and audience interaction.
- Learn to set up your equipment ready for a performance, including any tuning of instrument, space used, setting up of amplifiers, microphones and any other electronics.
- Be mindful of the health and safety or your equipment within rehearsal and performance space.
- Promote the event, sell tickets if required.
- Set up, sound check and rehearse on the day of performance.
- Perform event.
- Analyse and evaluate performance.

Band Set-up



Tips for a great performance:

- Don't worry about mistakes, and don't stop in the middle of the song if you make a mistake.
- Engage with the audience.
- Be unique with your music, arrangements and the performance, don't just play the same as everyone else.
- Listen to each other.
- Have fun - if you have fun so will the audience.

Year 9 and 10 Knowledge Goals: Music

Tier 3 Vocabulary		
	Key word	Definition
1	tempo	The speed of the music.
2	dynamics	The volume of the music.
3	major/minor chord	Notes I, III & V played together.
4	progression	Chord changes in a piece of music.
5	root note/chord	Chord or note I (1) in a piece of music.
6	tonic	Another term for chord/note I.
7	the circle of 5ths	The order of key signatures, all a 5^{th} apart.
8	relative minor	A minor key with the same key signature as it's relative major.
9	root position	A chord with notes in the order I III V.
10	1^{st} inversion	A chord with notes in the order III V I.
11	2^{nd} inversion	A chord with notes in the order V I III.
12	octave	The same note played an interval of 8 notes apart.

Notes

Year 9 and 10 Knowledge Goals: Physical Education (Softball)

Rules of softball:

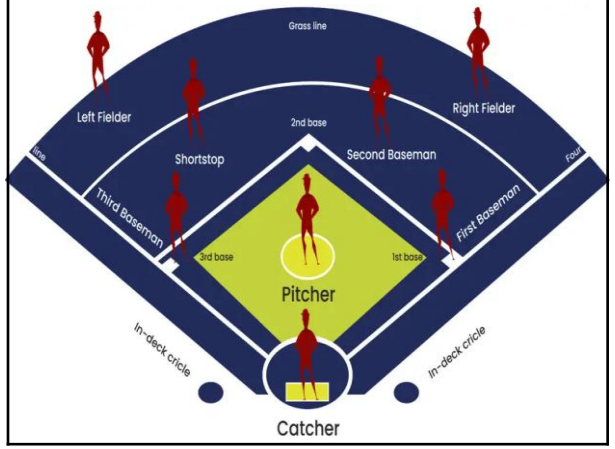
- The object of softball is to hit the ball with a bat before the player tries to run around an infield with four bases.
- Once a player manages to get round without being given out a run is scored. The team with the most runs at the end of the game wins.
- Players & Equipment Each softball team has 9 players.
- The game takes place over 7 innings.
- Fielders have a specialist softball glove for their nonthrowing arm to assist with fielding.
- An innings is split into two sections called the top and the bottom of the innings.
- The in-field has four bases in a diamond shape.
- The bases are home base (where the batter stands), first base, second base and third base. The fielding team has a pitcher, catcher, a player on first base, second base, third base, three deep fielders and short stop.
- Home plate can be found in the centre of the field where the pitcher must stand to throw the ball.
- The pitcher must throw the ball underarm and must have at least one foot on the plate at the point of delivery.
- A batter can be given out by being caught by a fielder without the ball bouncing, missing the ball three times in which a strike is called or by being tagged by a fielder holding the ball whilst running between bases. A batter can walk to first base if the pitcher fails to get the ball within the strike zone 4 times.
- Down the first and third base line is a foul area. Once the ball crosses this line before it bounces the ball is deemed 'dead' and play restarts with a new pitch.

Scoring:

- To score a run the batter must successfully first hit the ball and make it around the bases without being given out.
- One run is scored for every batter they manage to get round.
- A run can be scored even if the batter who hit the ball doesn't make it round to home plate but manages to get a player that's already on one of the bases home.

Positions:

Total of nine positions that are always played by the defensive team. The positions are called: 1. First base 2. Second base 3. Shortstop 4. Third base 5. Left field 6. Centre field 7. Right field 8. Pitcher 9. Catcher.



Skills:

Fielding skills:	**Infield and Outfield Positions:** Infielders are responsible for fielding ground balls that are near their position on the field. Must have quick reflexes, as these are the closest positions to home plate. The outfielders are positioned outside the area marked by the four bases, with the right one standing closest to first base. Their job is to catch and throw balls that fly out of the infield and backing up their teammates at the bases. **Fielding Ground Balls:** The knees should be bent and back should be parallel to the ground, and both arms should be outstretched in front of the body. The back of the fielder's glove should be on the ground with the throwing hand above it. **Catching Fly Balls:** Get your glove up in-line with the ball with your fingers pointing to the sky. Catch the ball in front of your head off the throwing side of the body. Catch the ball with one hand (glove), covering the ball in your glove with your bare hand. **Throwing:** You will need to practice your underarm and overhead throws over short and long distances. **Tag-Outs:** A tag, is a play in which a baserunner is out because a fielder touches them with the ball.
Running skills:	**Base-Running:** Runners may attempt to advance from base to base on any fair ball that touches the ground. **Leading Off/Stealing:** When a runner runs to the next base without the ball being hit. The runner may not leave the base until after the pitcher releases the ball. If they are tagged, they are out.

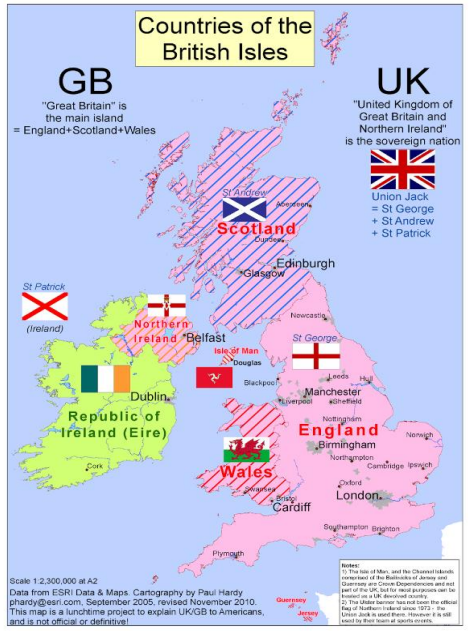
Year 9 and 10 Knowledge Goals: Physical Education (Softball)

Tier 3 Vocabulary

	Key word	Definition
1	pitcher	The player who throws the ball to the batter from the pitcher's mound. In **fast-pitch** softball, the pitcher delivers the ball with a windmill motion, while in **slow-pitch**, the ball is thrown in an arc.
2	strike	A pitched ball that the batter either swings at and misses or doesn't swing at but the umpire calls within the strike zone. A batter is allowed three strikes before being called out.
3	strike zone	The area over the plate, typically between the batter's knees and the midpoint of their torso. If the ball passes through this zone and the batter doesn't swing, it is called a strike.
4	infield	The area of the field inside the bases, consisting of the pitcher, catcher, first baseman, second baseman, shortstop, and third baseman. The infield is the primary area of play for most ground balls.
5	steal	When a base runner attempts to advance to the next base while the pitcher is delivering the ball to the batter
6	outfield	The area of the field outside the infield, consisting of the left fielder, center fielder, and right fielder. Outfielders catch fly balls and attempt to throw runners out
7	double play	A defensive play that results in two outs during the same play. For example, a shortstop might throw to second base for a force out and then the second baseman throws to first base to get the batter out.
8	tag out	A play where a fielder physically touches a base runner with the ball or glove while the runner is not touching a base. This results in the runner being called out.
9	force out	When a defensive player forces a base runner out by touching the base to which the runner is forced to run before the runner gets there, typically when a batter becomes a runner and there is a force at a base.
10	home run	A hit that allows the batter to circle all four bases and score a run without being tagged out. In some variations of softball, a home run may occur when the ball is hit over the outfield fence.

Notes

Year 9 and 10 Knowledge Goals: PSHE



Find out more about the equalities act

Signs of radicalization

childline

ONLINE, ON THE PHONE, ANYTIME

childline.org.uk | 0800 1111

Gang Culture in the UK

Gang culture in the UK refers to organized or semi-organized groups, often involved in criminal activities such as drug dealing, violence, and territorial disputes.

The term **"county lines"** refers to a form of criminal activity in the UK where drug gangs from major cities expand their operations into smaller towns and rural areas. They use **dedicated phone lines** (hence the name) to take drug orders and exploit vulnerable people—often children or at-risk adults—to transport and sell drugs

Extremism is on the increase. In Cumbria there is an increase in the far right

Year 9 and 10 Knowledge Goals: PSHE

Tier 3 Vocabulary

	Key word	Definition
1	British Isles	Group of islands off the northwestern coast of Europe. The group consists of two main islands, Great Britain and Ireland, and numerous smaller islands and island groups, including the Hebrides, the Shetland Islands, the Orkney Islands, the Isles of Scilly, and the Isle of Man. Some also include the Channel Islands in this grouping.
2	equalities act	The Equality Act 2010 legally protects people from discrimination in the workplace and in wider society.
3	identity	Identity is the qualities, beliefs, personality traits, appearance, and/or expressions that characterize a person or group.
4	hate crime	A hate crime is defined as 'Any criminal offence which is perceived by the victim or any other person, to be motivated by hostility or prejudice based on a person's race or perceived race; religion or perceived religion; sexual orientation or perceived sexual orientation; disability or perceived disability and any crime motivated by hostility or prejudice against a person who is transgender or perceived to be transgender.'
5	discrimination	Treating someone 'less favourably' than someone else, because of: age disability gender reassignment marriage and civil partnership pregnancy and maternity race religion or belief sex sexual orientation.
6	bullying	The repetitive, intentional hurting of one person or group by another person or group, where the relationship involves an imbalance of power. Bullying can be physical, verbal or psychological.
7	cyberbullying	Cyberbullying is bullying that takes place over digital devices like cell phones, computers, and tablets.
8	extremism	Holding extreme political or religious views.
9	radicalisation	The process through which a person comes to support or be involved in extremist ideologies.
10	terrorism	The unlawful use of violence and intimidation to bring about political or social change.
11	county Lines	The term **"county lines"** refers to a form of criminal activity in the UK where drug gangs from major cities expand their operations into smaller towns and rural areas. They use **dedicated phone lines** (hence the name) to take drug orders and exploit vulnerable people—often children or at-risk adults—to transport and sell drugs.
12	recreational drugs	**Recreational drugs** are substances that people use for enjoyment, relaxation, or social reasons rather than for medical purposes. These drugs can alter mood, perception, or consciousness and are often taken to achieve a pleasurable effect.

Notes

Year 9 and 10 Knowledge Goals: Religion & Life

Religious people believe they have a duty to look after the planet (**Stewardship**) and treat it with respect. Life is sacred to all religious believers. Humans have **dominion** (power) over nature by permission of God.

ENVIRONMENTAL DAMAGE: Pollution: damage and solutions - Pollution causes damage to the sea, (water) and land. Pollution is the main reason for global warming

GLOBAL WARMING: Global warming causes climate change as the earth becomes hotter. Extreme weather patterns - too hot, too wet, too dry - all lead to floods, droughts, damage to animals' habitats, ice caps melting, more deserts and reduction in rainforest.

DESTRUCTION OF NATURAL HABITATS: refers to activites that damage forest and areas of nature beyond repair so that creatures' living space is lost. Deforestation sees land taken for grazing, house building, mining and roads, and planting of cash crops like palm oil plantations.

ABUSE OF NATURAL RESOURCES: Natural resources include minerals and fossil fuels, which have taken millions of years to form. Humans are overusing them and they are non-renewable.

CARING FOR THE WORLD: Sustainable development is the idea that technological advances should be long-lasting and within reach of all nations. **Conversation** is the act of protecting an area or species. Areas of nature need to be returned to their original state of natural beauty, before they suffered the damage inflicted by humans. People can: ● Make small changes to life patterns. ● Adopt animals in reserves where their habitats are protected. ● Recycle.

ANIMAL RIGHTS: are the rights animals have to live without cruelty and to have good treatment. They have the right to be treated properly, fairly and with kindness, even when intend to kill them. Laws in the **UK protect domestic animals (pets) and endangered species** by enforcing their care.

ANIMAL EXPERIMENTATION: Some animals are bred deliberately for life as an experiment subject. Most experiments test for toxicity, of medicines and medical techniques. Animals are also tested on to improve surgical skills for operations.

USE OF ANIMALS FOR FOOD: Most food rules in religions are about the eating of meat. **BUDDHISM**: Many Western Buddhists are vegetarian out of respect for all life - animals are also part of the cycle of rebirth and the First Precept of non-harming. **CHRISTIANITY:** Many Christians eat no red meat on Fridays; many eat no meat at all during Lent.

ORIGINS OF THE UNIVERSE: The Big Bang Theory says that the universe began 20 billion years ago. There **was nothing and then a huge explosion** made clouds of dust and gas. Over time the universe formed. The earth was hot, covered in **primordial soup,** these fused to give the first life forms and thus life developed. But **how nothing is able to explode?**

EVOLUTION: **Charles Darwin** claimed the world is a place of change and the variety of creatures is the result of years of **adaptation (evolution).** There is a struggle for survival between creatures through climates, resources and habitat and **species failing to adapt become extinct**. Only the fittest survived (**natural selection)**.

'Where a person is definitely going to die, and keeping them alive leads to more suffering, then termination of life is permitted under Mahayana Buddhism' Dalai Lama

THE SANCTITY OF LIFE: all life is special as it was created by God so needs to be protected. Everyone believes life is special in one way or another.

QUALITY OF LIFE: relates to how good a person's life is - how they feel, how comfortable they are, how easy it is for them to live. It is also about whether life is worth living if they have a medical condition. Quality of life is a key factor in abortion and euthanasia.

RELIGIOUS ATTITUDES TO LIFE: BUDDHISM: ● Life is special and must be protected. ● **The First Precept is to help others, not harm them**. ● The heart of Buddhist practice is to overcome suffering (dukkha). **CHRISTIANITY**: ● **Do not Kill (Ten Commandments - Exodus) ● I, your God, give life and I take it away. (Job)** ● The Catholic Church teaches that life must be respected from conception until natural death. ● Doctors don't have an obligation to prolong life by all means possible (Church of England).

ABORTION & EUTHANASIA: Abortion Act 1967 bans abortion after 24 weeks. **BUDDHISM:** intention is key - helping to save the woman's life is compassionate even if the foetus dies. The same goes for euthanasia, if it's necessary its ok. **CHRISTIANITY:** if the pregnancy threatens the woman's life it is justified (CoE). For Catholics if abortion is a side effect of a medical procedure it can be accepted.

RELIGIOUS ATTITUDES TO THE ENVIRONMENT AND ANIMALS: BUDDHISM CHRISTIANITY

- **Ignorance and greed** (two of **the three poisons**) lead to most of the pollution being caused.
- **The First Precept** tells us to not harm other sentient beings.
- **Right Livelihood** implies that Buddhists should not work in a job that exploits animals.
- All sentient beings fear being put to death – **"let no one kill or cause others to kill" (Dhammapada).**
- God gave us the world; humans have responsibility to look after it as **stewards.** A responsibility for each other, the poor of the world and our future children.
- Animals are part of creation and deserve respect and protection (Assisi).
- Scientists must abandon laboratories and factories of death (Pope).

'God created life in his own image.' (Genesis)

Year 9 and 10 Knowledge Goals: Religion & Life

Tier 3 Vocabulary		
Key word		**Definition**
1	abortion	Deliberate termination of a pregnancy.
2	afterlife	Beliefs about what happens to our self/soul after we die.
3	big bang theory	Scientific view of the beginning of the universe.
4	euthanasia	Endling life for someone who is terminally ill or has a degenerative disease. Voluntary (the decide). Involuntary (someone else decides).
5	evolution	Scientific theory that states life evolved from a simple form through a process of natural selection and survival.
6	reincarnation	Rebirth (into another form of life after death).
7	origins of the universe	How the universe began; scientific theory or religious belief.
8	quality of life	How good/comforting life is.
9	responsibility	Duty to do a certain thing/carry out specific action.
10	sanctity of life	Life is special as it is created by God.
11	scientific view	Knowledge coming from observed regularities in nature and experiment.
12	stewardship	Duty to look after the world and all life within it.

Notes:

Quiz QR Code	Quiz Link
	Quiz Link

Year 9 and 10 Knowledge Goals: Science (Chemical Change)

The reactivity series of metals

When metals react with other substances, the metal atoms lose **electrons** to form positive **ions**.
The reactivity series of metals is a chart showing metals in order of **decreasing** reactivity. In general, the more **reactive** a metal is:

- the more vigorous its reactions are
- the more easily it loses electrons in reactions to form positive ions

Metal	Reaction with cold water	Reaction with dilute acids	Reactivity
Potassium	Violent	Violent	Most reactive
Sodium			
Lithium			
Calcium	Fast	Rapid	
Magnesium	Very slow		
(Carbon)			
Zinc	Usually no reaction	Slow	
Iron	Rusts slowly		
(Hydrogen)			
Copper	No reaction	No reaction	
Gold			Least reactive

electrolysis

Displacement with carbon

Reactions of metals with water

When a metal reacts with water, a metal hydroxide and hydrogen are formed. For example, sodium reacts rapidly with cold water:

Sodium + water → sodium hydroxide + hydrogen

$2Na(s) + 2H_2O(l) \rightarrow 2NaOH(aq) + H_2(g)$

Reactions of metals with dilute acids

When a metal reacts with a dilute **acid**, a **salt** and hydrogen are formed. For example, magnesium reacts rapidly with dilute hydrochloric acid:

Magnesium + hydrochloric acid → magnesium chloride + hydrogen

$Mg(s) + 2HCl(aq) \rightarrow MgCl_2(aq) + H_2(g)$

Oxidation
Is
Loss of electrons (cations +VE)
Reduction
Is
Gain (anions – VE)

Displacement in solutions

A more reactive metal can displace a less reactive metal from its compounds. For example, magnesium is more reactive than copper. It displaces copper from copper sulfate solution:

Magnesium + copper sulfate → magnesium sulfate + copper

$Mg(s) + CuSO_4(aq) \rightarrow MgSO_4(aq) + Cu(s)$

In this displacement reaction:
magnesium becomes coated with copper
the blue colour of the solution fades as blue copper sulfate solution is replaced by colourless magnesium sulfate solution

magnesium atoms lose **electrons** - they are **oxidised**
copper ions gain electrons - they are **reduced**
Reduction and **oxidation** happen at the same time, so the reactions are called **redox reactions**.

Extraction methods

The extraction method used depends upon the metal's position in the reactivity series.

Displacement:

If a metal is less **reactive** than carbon, it can be extracted from its compounds by heating with carbon. E.g.

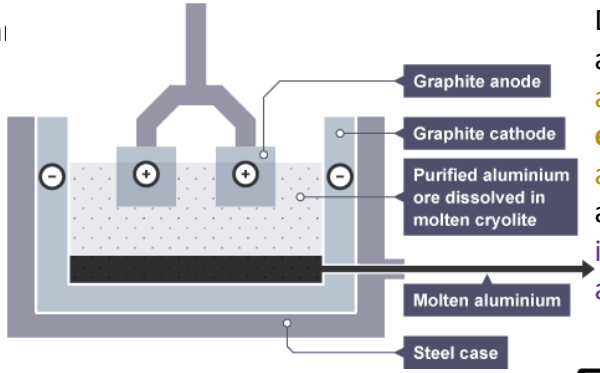
Copper oxide + carbon → copper + carbon dioxide

$2CuO(s) + C(s) \rightarrow 2Cu(l) + CO_2(g)$

Copper oxide is **reduced** as carbon is **oxidised**, so this is an example of a **redox** reaction.

Electrolysis:

There are two types:
Aqueous (solid dissolved in a solution)
Molten (solid has been melted so it is now a liquid)



During electrolysis:
at the **cathode**, aluminium **ions** gain **electrons** and form aluminium **atoms**
at the **anode**, oxide ions lose electrons and form oxygen gas

More information

Quiz

Year 9 and 10 Knowledge Goals: Science (Chemical Change)

Tier 3 Vocabulary		
	Key word	Definition
1	anode	The positive electrode during electrolysis.
2	cathode	The negative electrode during electrolysis.
3	displace	Take the place of another substance in a chemical reaction. For example, a metal can displace a less reactive metal from its oxide, removing oxide ions from the less reactive metal and becoming an oxide itself.
4	dissolved	A substance is said to be dissolved when it breaks up and mixes completely with a solvent to produce a solution.
5	electrolysis	The decomposition (breakdown) of a compound using an electric current.
6	extraction	The process of obtaining a metal from a mineral, usually by reduction or electrolysis.
7	half equation	An equation, involving ions and electrons, that describes the process happening at an electrode.
8	molten	A term used to describe a liquid substance (eg rock, glass or metal) formed by heating a solid.
9	redox reaction	When reduction and oxidation take place at the same time.
10	salt	The substance formed when the hydrogen ion in an acid is replaced by a metal ion.
11	inert	A chemical which does not react.
12	ore	A rock containing enough quantities of a mineral for extraction.

Notes

Year 9 and 10 Knowledge Goals : Science (Organisation)

Principles of Organisation





cell	→ tissue	→ organ	→ organ system	→ organism
Cells are the basic building blocks of all living things.	A group of cells with a similar structure and function is called a tissue.	An organ is a combination of tissues carrying out a specific function.	Organs work together within an organ system.	Organ systems work together to form whole living organisms.

Food Tests (Required Practical)

What are you testing for?	Which indicator do you use?	What does a positive result look like?
sugar	Benedict's reagent	Once heated, the solution will change from blue-green to yellow-red.
starch	iodine	Blue-black colour indicates starch is present.
protein	biuret	The solution will change from blue to pink-purple.
lipid	sudan III	The lipids will separate and the top layer will turn bright red.

Effect of pH on the Rate of Reaction of Amylase (Required Practical)

Iodine is used to test for the presence of **starch**. If starch is present, the colour will change to blue-black.

The **independent variable** in the investigation is the pH of the buffer solution.

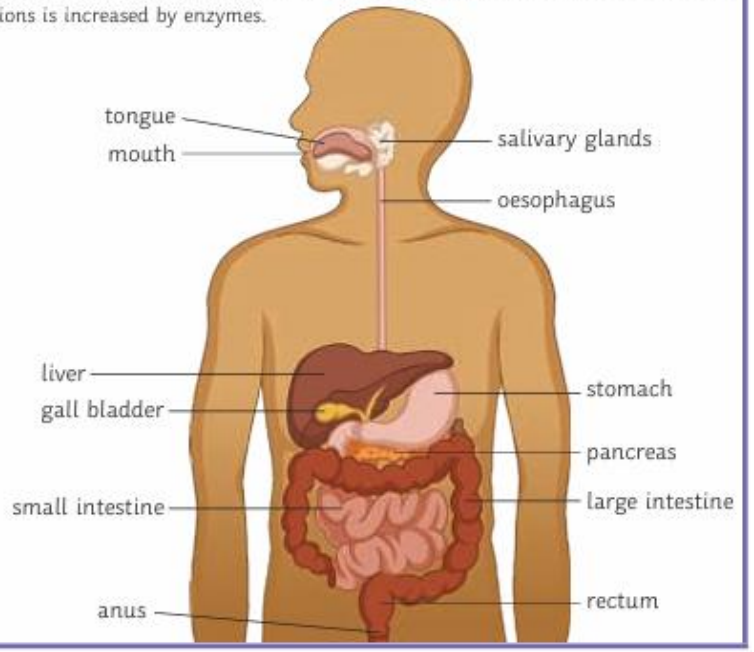
The **dependent variable** in the investigation is the time taken for the reaction to complete (how long it takes for all the starch to be digested by the amylase).

Method:

1. Use the marker pen to label a test tube with the first value of pH buffer solution (pH 4) and stand it in the test tube rack.
2. Into each well of the spotting tiles, place a drop of iodine.
3. Using a measuring cylinder, measure 2cm^3 of amylase and pour into the test tube.
4. Using a syringe, measure 1cm^3 of the buffer solution and pour into the test tube.
5. Leave this to stand for five minutes and then use the thermometer to measure the temperature. Make a note of the temperature.
6. Add 2cm^3 of starch solution into the test tube, using a different measuring cylinder to measure, and begin a timer (leave the timer to run continuously).
7. After 10 seconds, use a pipette to extract some of the amylase/starch solution, and place one drop into the first well of the spotting tile. Squirt the remaining solution back into the test tube.
8. Continue to place one drop into the next well of the spotting tile, every 10 seconds, until the iodine remains orange.
9. Record the time taken for the starch to be completely digested by the amylase by counting the wells that were tested positive for starch (indicated by the blue/black colour change of the iodine). Each well represents 10 seconds of time.
10. Repeat steps 1 to 8 for pH values 7 and 10.

The Digestive System

The purpose of the digestive system is to break down large molecules into smaller, soluble molecules, which are then absorbed into the bloodstream. The rate of these reactions is increased by enzymes.



Notes

Year 9 and 10 Knowledge Goals : Science (Organisation)

Enzymes

An enzyme is a biological **catalyst**; enzymes speed up chemical reactions without being changed or used up.

This happens because the enzyme lowers the **activation energy** required for the reaction to occur. Enzymes are made up of chains of amino acids folded into a globular shape.

Enzymes have an **active site** which the **substrate** (reactants) fits into. Enzymes are very specific and will only catalyse one specific reaction. If the reactants are not the complimentary shape, the enzyme will not work for that reaction.

Enzymes also work optimally at specific conditions of pH and temperature. In extremes of pH or temperature, the enzyme will **denature**. This means that the bonds holding together the 3D shape of the active site will break and the active shape will deform. The substrate will not be able to fit into the active site anymore and the enzyme cannot function.

Enzyme	Reactant	Product
amylase	starch	sugars (glucose)
protease	protein	amino acids
lipase	lipid	glycerol and fatty acids

The products of digestion are used to build new carbohydrates and proteins and some of the glucose is used for respiration.

Bile is produced in the **liver** and stored in the gall bladder. It is an **alkaline** substance which **neutralises** the hydrochloric acid in the stomach. It also works to **emulsify** fats into small droplets. The fat droplets have a higher **surface area** and so the rate of their digestion by lipase is increased.

The Heart and Blood Vessels

The **heart** is a large muscular organ which **pumps blood** carrying oxygen or waste products around the body. The **lungs** are the site of **gas exchange** where oxygen from the air is exchanged for waste carbon dioxide in the blood. Oxygen is used in the **respiration** reaction to release energy for the cells and carbon dioxide is made as a waste product during the reaction.

glucose + oxygen ⟶ carbon dioxide + water + [energy]

vein	artery	capillary

The three types of blood vessels, shown above, are each adapted to carry out their specific function.

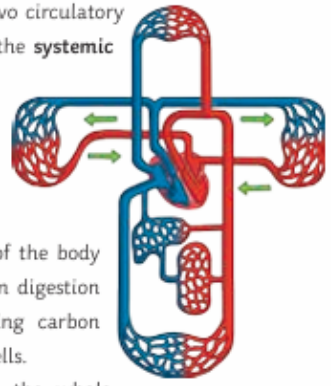
Capillaries are narrow vessels which form networks to closely supply cells and organs between the veins and arteries. The walls of the capillaries are only **one cell thick**, which provides a short **diffusion pathway** to increase the rate at which substances are transferred.

The table below compares the structure and function of arteries and veins:

	Artery	Vein
direction of blood flow	away from the heart	towards the heart
oxygenated or deoxygenated blood?	oxygenated (except the pulmonary artery)	deoxygenated (except the pulmonary vein)
pressure	high	low (negative)
wall structure	thick, elastic, muscular, connective tissue for strength	thin, less muscular, less connective tissue
lumen (channel inside the vessel)	narrow	wide (with valves)

The Heart as a Double Pump

The heart works as a **double pump** for two circulatory systems; the **pulmonary** circulation and the **systemic** circulation.



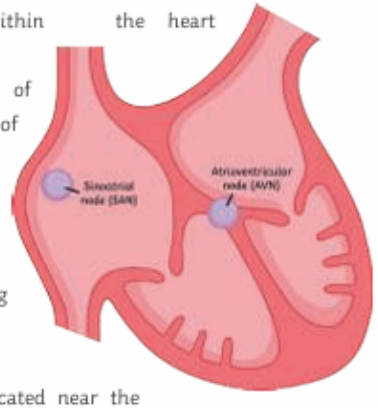
The pulmonary circulation serves the lungs and bring deoxygenated blood to exchange waste carbon dioxide gas for oxygen at the **alveoli**.

The systemic circulation serves the rest of the body and transports oxygen and nutrients from digestion to the cells of the body, whilst carrying carbon dioxide and other waste away from the cells.

The systemic circulation flows through the whole body. This means the blood is flowing at a much higher pressure than in the pulmonary circuit.

The Heart as Pacemaker

The rate of the heart beating is very carefully, and automatically, controlled within the heart itself.



Located in the muscular walls of the heart are small groups of cells which act as pacemakers. They produce electrical impulses which stimulate the surrounding muscle to contract, squeezing the chambers of the heart and pumping the blood.

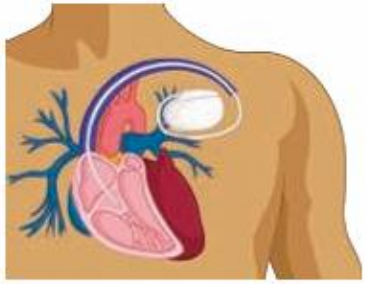
The **sino-atrial node (SAN)** is located near the right atrium and it stimulates the atria to contract.

The **atrio-ventricular node (AVN)** is located in between the ventricles and stimulates them to contract.

Notes

Year 9 and 10 Knowledge Goals : Science (Organisation)

Artificial pacemakers can be surgically implanted into a person if their heart nodes are not functioning correctly.



Coronary Heart Disease

Coronary heart disease is a condition resulting from **blockages** in the **coronary arteries**. These are the main arteries which supply blood to the heart itself and they can become blocked by build-up of **fatty deposits**.

In the UK and around the world, coronary heart disease is a major cause of many **deaths**.

The main symptoms can include **chest pain**, **heart attack** or **heart failure**. Yet, not all people suffer the same symptoms, if any at all.
Lifestyle factors can increase the risk of a person developing coronary heart disease.

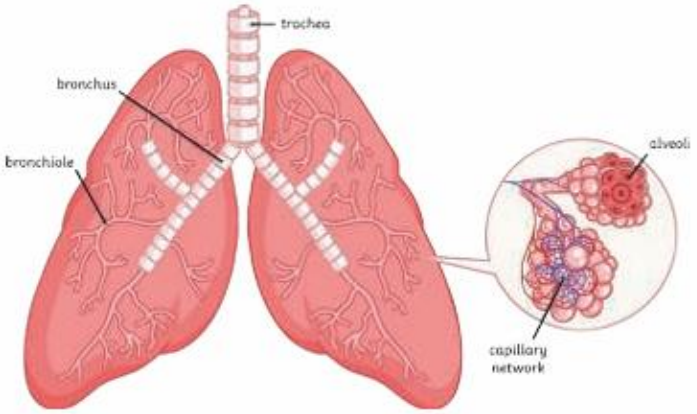
Diet – a high-fat diet (containing lots of saturated fat) can lead to higher cholesterol levels and this cholesterol forms the fatty deposits which damage and block the arteries.

Smoking – chemicals in cigarette smoke, including nicotine and carbon monoxide, increase the risk of heart disease. Carbon monoxide reduces the amount of oxygen which can be transported by the red blood cells and nicotine causes an increased heart rate. The lack of oxygen to the heart and increased pressure can lead to heart attacks.

Stress – prolonged exposure to stress or stressful situations (such as high pressure jobs) can lead to high blood pressure and an increased risk of heart disease.

Drugs – illegal drugs (e.g. ecstasy and cannabis) can lead to increased heart rate and blood pressure, increasing the risk of heart disease.

Alcohol – regularly exceeding unit guidelines for alcohol can lead to increased blood pressure and risk of heart disease.



Blood

Blood is composed of red blood cells (erythrocytes), white blood cells and platelets, all suspended within a plasma (a tissue).

The **plasma** transports the different blood cells around the body as well as carbon dioxide, nutrients, urea and hormones. It also distributes the heat throughout the body.

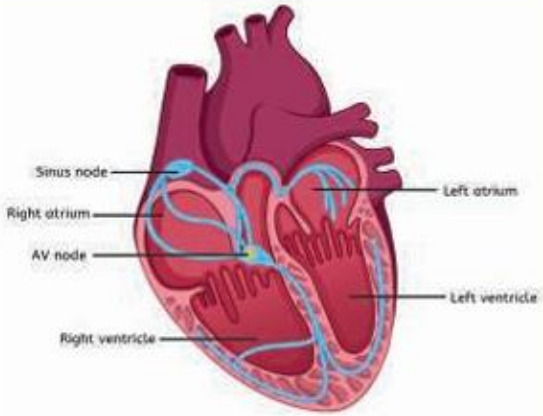
Red blood cells transport oxygen attached to the haem group in their structure. It has a biconcave shape to increase surface area and does not contain a nucleus so it can bind with more oxygen molecules.

White blood cells form part of the immune system and ingest pathogens and produce antibodies. **Platelets** are important blood clotting factors.

at the lungs

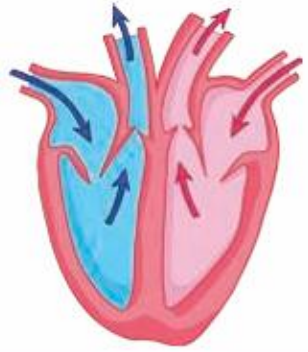
haemoglobin + oxygen $\rightleftharpoons$ oxyhaemoglobin

at the cells



The **right atrium** receives deoxygenated blood via the **vena cava**. It is then pumped down through the valves into the right ventricle. From here, it is forced up through the **pulmonary artery** towards the **lungs** where it exchanges carbon dioxide for oxygen. The oxygenated blood then enters the **left atrium** via the **pulmonary vein** and down into the left ventricle. The muscular wall of the **left ventricle** is much thicker so it can pump the blood more forcefully out of the heart and around the entire body, via the **aorta**.

The blood only flows in **one direction**. This is because there are **valves** in the heart which close under pressure and prevent the backward flow of blood.



Notes

Year 9 and 10 Knowledge Goals : Science (Organisation)

Rate Calculations for Blood Flow

The number of beats the heart performs each minute is called the **pulse** (or heart rate).

It is easily measured by counting the number of beats in a given time, e.g. 15s, and finding the total beats **per minute**.

Typically, a lower resting pulse rate indicates a greater level of physical **fitness**. During exercise, and for some time after, the pulse rate increases while the heart is working to provide more **oxygen** to the muscles.

Cardiac output is a measure of the volume of blood pumped by the heart each **minute**. **Stroke volume** is a measure of the volume of blood pumped from the heart each **contraction** (heart beat).

Cardiac output (cm^3/min) = heart rate (bpm) × stroke volume (cm^3/beat)

Cancer

Cancer is the result of **uncontrolled** cell growth and division. The uncontrolled growth of cells is called a **tumour**.

Benign Tumour	Malignant Tumour
• Usually grows slowly. • Usually grows within a membrane and can be easily removed. • Does not normally grow back. • Does not spread around the body. • Can cause damage to organs and be life-threatening.	• cancerous • Usually grows rapidly. • Can spread around the body, via the bloodstream. • Cells can break away and cause secondary tumours to grow in other areas of the body (metastasis).

Plant Tissues, Organs and Systems

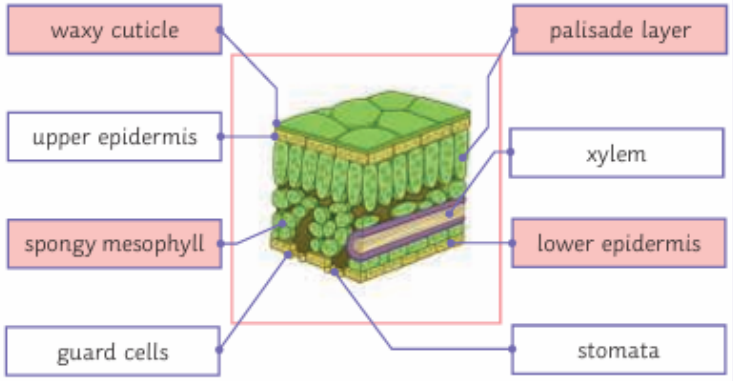
Leaves are plant organs and their main function is to absorb sunlight energy for use in **photosynthesis**. Within the cells are small organelles called **chloroplasts** which contain a green pigment called **chlorophyll**. This is the part of the plant which absorbs the sunlight and where photosynthesis occurs.

$$\text{carbon dioxide + water} \xrightarrow{\text{sunlight}} \text{oxygen + glucose}$$

Leaves are adapted to carry out their function. Leaves are typically flat and thin with a large **surface area**. This means they have a maximum area to absorb the sunlight and carbon dioxide. The **thin** shape reduces the distance for **diffusion** of water and gases.

Leaves contain vessels called xylem and phloem. The **xylem** transport water and dissolved minerals toward the leaves. The **phloem** transport glucose and other products from photosynthesis around the plant.

The large **air spaces** between the cells of the spongy mesophyll layer allow for the diffusion of gases. **Carbon dioxide** enters the leaves and **oxygen** exits the leaves.



The **guard cells** are specially adapted cells located on the underside of the leaf. They are positioned in pairs, surrounding the **stomata** (a small opening in the epidermis layer). The guard cells change shape to open and close the stomata, controlling the rate of **gas exchange** in the leaf.

Root Hair Cells

Plants absorb water by **osmosis** through the root hair cells of the roots. Dissolved in the water are important minerals for the plant's growth and development, which are absorbed by **active transport**.

The **root hair cells** are adapted to their function with the following features:

- Finger-like projection in the membrane increases the **surface area** available for water and minerals to be absorbed across.
- The narrow shape of the projection can squeeze into small spaces between soil particles, bringing it closer and reducing the distance of the **diffusion pathway**.
- The cell has many **mitochondria**, which release energy required for the active transport of some substances.

Xylem and Phloem

Xylem vessels transport **water** through the plant, from roots to leaves. They are made up of **dead**, lignified cells, which are joined end to end with no walls between them, forming a long central tube down the middle. The movement of the water, and dissolved minerals, along the xylem is in a **transpiration** stream.

Xylem vessels also provide **support** and **strength** to the plant structure. They are found in the middle of roots so they aren't crushed within the soil. They are found in the middle of the stem to provide strength and prevent bending. In the leaves, they are found in **vascular bundles** alongside the phloem and can be seen as the veins which network across the leaf.

Notes

Year 9 and 10 Knowledge Goals : Science (Organisation)

Phloem vessels transport **food** such as dissolved sugars and glucose from photosynthesis. The food is transported around the plant to where growth is occurring (root and shoot tips), as well as to the organs which store the food. The transport occurs in **all directions** throughout the plant. The cells making up the phloem tube are **living**, with small holes in the walls where the cells are joined.

Transpiration and Translocation

Transpiration is the loss of water, by **evaporation** and **diffusion**, from the leaves of the plant. Water is a cohesive molecule and as it evaporates, there is less water in the leaf, so water from further back moves up to take its place. This, in turn, draws more water with it. This is the **transpiration stream**.

Transpiration occurs naturally as there is a tendency for water to diffuse from the leaves (where the concentration is relatively high) to the air around the plants (where the concentration is relatively low), via the **stomata**.

Environmental factors can change the rate at which transpiration occurs:

- Increased **light intensity** will increase the rate of transpiration because light stimulates the stomata to open. The leaf will also be warmed by the sunlight.
- Increased **temperature** will cause the water to evaporate more quickly and so increase the rate of transpiration.
- Increased **humidity** (moisture in the air) will reduce the rate of transpiration. Whereas if the air becomes drier, the rate increases. A greater concentration gradient will increase the rate of diffusion.
- If the **wind speed** increases, then the rate of transpiration also increases. This is because as the water surrounding the leaves is moved away more quickly, the concentration gradient is increased.
- If the **water content** in the soil is decreased, then the rate of absorption in the roots decreases. This causes the stomata to become flaccid and close, reducing transpiration. If the loss of turgor affects the whole plant, then it will wilt.

Disease Interactions

Having one type of illness can often make a person more susceptible to another type of illness:

- immune disorders → increased risk of infectious disease
- viral infection of cells → increased risk of cancer
- immune reactions → can trigger allergies
- very poor physical health → increased risk of depression or other mental illness

Health and Disease

Health is the state of being free from **illness** or **disease**. It refers to **physical** and **mental** wellbeing.

Disease and lifestyle factors, such as diet, stress, smoking, alcohol consumption and the use of illegal drugs, can all impact the health of a person.

Some conditions are associated with certain lifestyle choices:

- Liver conditions are associated with poor **diet** and prolonged excessive **alcohol** consumption.
- Lung cancer is associated with **smoking**.
- Memory loss, poor physical health and hygiene are associated with the use of illegal or recreational **drugs**.
- Obesity and diabetes are associated with poor diet.
- Anxiety and depression are associated with **stress** and prolonged excessive alcohol consumption.

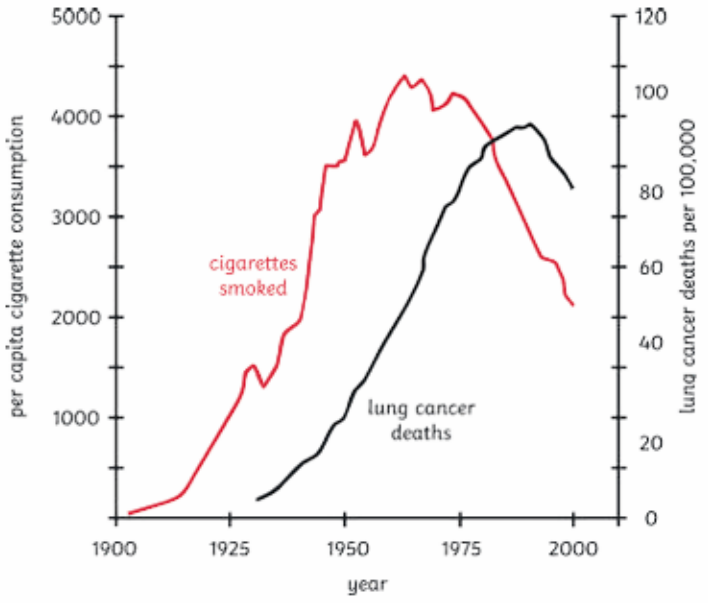
There can often be correlations between some factors and types of illness or specific diseases.

For example, in the graph shown to the right, there is a positive correlation between the number of cigarettes smoked and the number of lung cancer deaths.

However, there are other factors which can contribute to the development of lung cancer e.g. working with asbestos, genetic predisposition.

This means that although the evidence in the graph gives a strong indication that smoking is a cause of lung cancer, it cannot be stated that **'smoking will cause lung cancer'**. Not every person who smokes will develop lung cancer and not every person who develops lung cancer will be a smoker.

Therefore, it can be stated that **smoking increases the risk of lung cancer**.



Notes

Year 9 and 10 Knowledge Goals : Science (Energy Change)

Keywords - Learn the key terms and their definitions

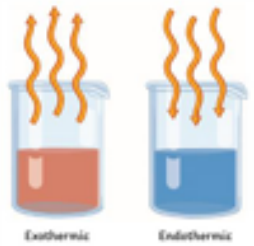
Key Terms	Definitions
Activation energy	The energy that has to be put into a chemical reaction to cause a reaction
Reaction profile	Diagram showing the energy changes in a reaction
Independent Variable	The variable that is altered/changed during a scientific experiment. (There is ONE)
Dependent variable	The variable being tested or measured during a scientific experiment. You will write this in your results table
Controlled variable	a variable that is kept the same during a scientific experiment so that tests can be compared
Insulator	A materials that reduces the passage of heat through iit

Exothermic and Endothermic reactions

Learn the definitions and examples of both types of reaction

When energy is transferred to the surroundings, this is called an **exothermic** reaction, and the temperature of the surroundings increases.
Examples of exothermic reactions include:
- **combustion** reactions
- many **oxidation** reactions
- most **neutralisation** reactions

Everyday uses of include self-heating cans and hand warmers.

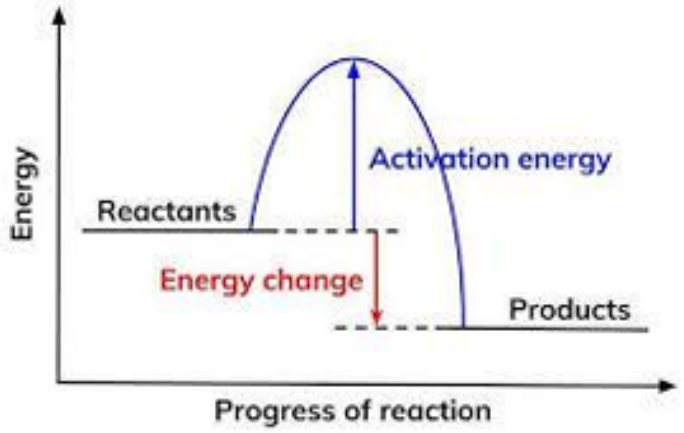


When energy is taken in from the surroundings, this is called an **endothermic** reaction and the temperature of the surroundings decreases. Examples of endothermic reactions include:
- **thermal decomposition** reactions
- the reaction of citric acid and sodium hydrogencarbonate

Everyday uses include instant ice packs which can be used to treat sports injuries.

Reaction Profiles

Learn to draw and label the profiles for exothermic reaction and give the key features

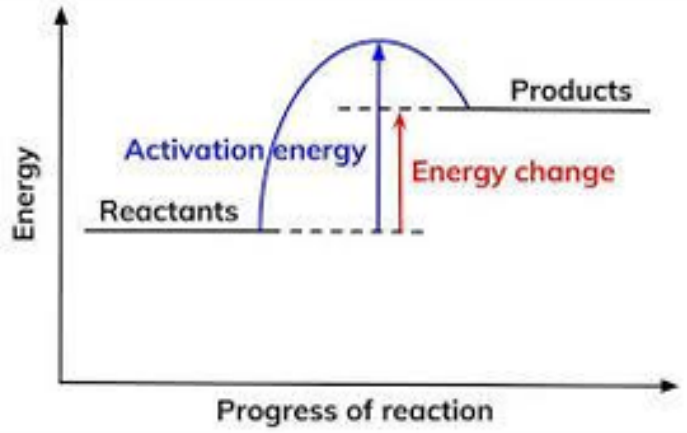


Key features:

1. The products have ***less*** energy than the reactants (this is because energy has been released)
2. *Energy Exits* the system in *Exothermic* reactions

Reaction Profiles

Learn to draw and label the profiles for endothermic reaction and give the key features



Key features:

1. The products have ***more*** energy than the reactants (this is because energy has been taken in)
2. *Energy Enters* the system in *Endothermic* reactions

Year 9 and 10 Knowledge Goals : Science (Energy Change)

Required practical: Temperature changes in Reacting Solutions

- *Acids and Metals*

Learn the variables and the basic method:

Independent: Mass of Magnesium
Dependent: Temperature Change
Control: Volume of acid, concentration of acid, type of metal, surface area of metal, start temperature, cup material and position

Method:

1.Place the polystyrene cup inside the glass beaker to make it more stable.

2.Measure 25 cm^3 of 1M Hydrochloric acid using a measuring cylinder

3.Measure 0.2g of Magnesium powder using electronic scales.

4.Place the acid in the polystyrene cup.

5.Record the temperature of the solution using a thermometer

6.Add the magnesium powder and record the highest temperature obtained.

7. Repeat the experiment using 0.4g of Magnesium then 0.6, 0.8 and 1.0g

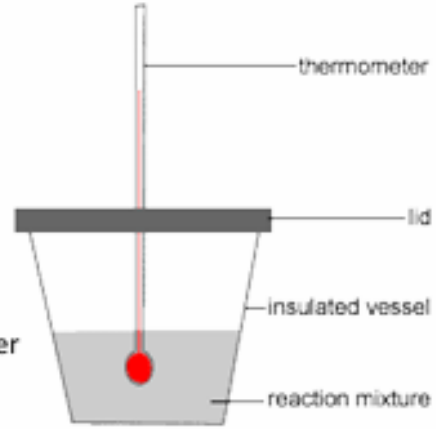
8.Repeat each individual mass three times, identify and discount any anomalies then calculates the mean temperature rise.

Required practical: Temperature changes in Reacting Solutions

- *Acids and Alkali*

Learn the variables and the basic method:

Independent: Volume of alkali
Dependent: Temperature after each addition
Control: Volume of acid, concentration of acid, type of alkali, concentration of alkali, start temperature, cup material and container



Method:

1.Place the polystyrene cup inside the glass beaker to make it more stable.

2.Measure 25cm^3 of 1M HCl using a measuring cylinder.

3.Place the acid into the polystyrene cup.

4.Record the temperature of the acid solution using a thermometer.

5.Add 1cm^3 of 1M NaOH using either a 1cm^3 pipette or using a burette. Record the temperature change.

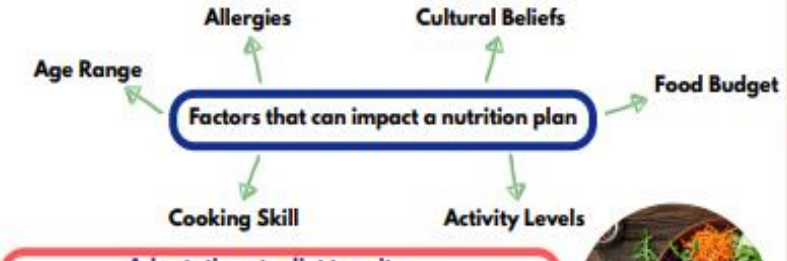
6. Quickly keep adding 1cm^3 of 1M NaOH and record the temperature after each addition.

7. Add alkali up to a volume of 40cm^3.

Year 9 and 10 Knowledge Goals: Sport (Nutrition and Sports performance)

Key information

Topic area 3: Developing a balanced nutrition plan for a selected sporting activity.



Adaptations to diet to suit a specific sporting activity:

- Add or remove nutrients
- Change portion sizes
- Change timings of mealtimes
- Alter the number of meals

TOPIC AREA 3

SPORT SCIENCE R183 PART 2

Increased carbohydrate intake = Increased Energy

Reduced fat intake = Weight Loss

Increased protein intake = Quicker Muscle Repair

Evaluating a nutritional plan

E.g. after several months of training with an increased protein intake, a weightlifter should find that they are now lifting heavier weights, are able to train at a greater intensity and recover quicker.

Topic area 4: How nutritional behaviours can be managed to improve sports performance

The Negative Effects of Undereating Include:

- Drop in weight
- Reduced energy levels
- Reduced concentration

Effects of Overeating:

- Speed
- Flexibility
- Agility
- Stamina

These components of fitness will all decrease/worsen as a result of additional fat intake (resulting in weight gain)

TOPIC AREA 4

- Nausea
- Headaches
- Cramp
- Dehydration can result in...
- Heat stroke
- Decision Making
- Concentration

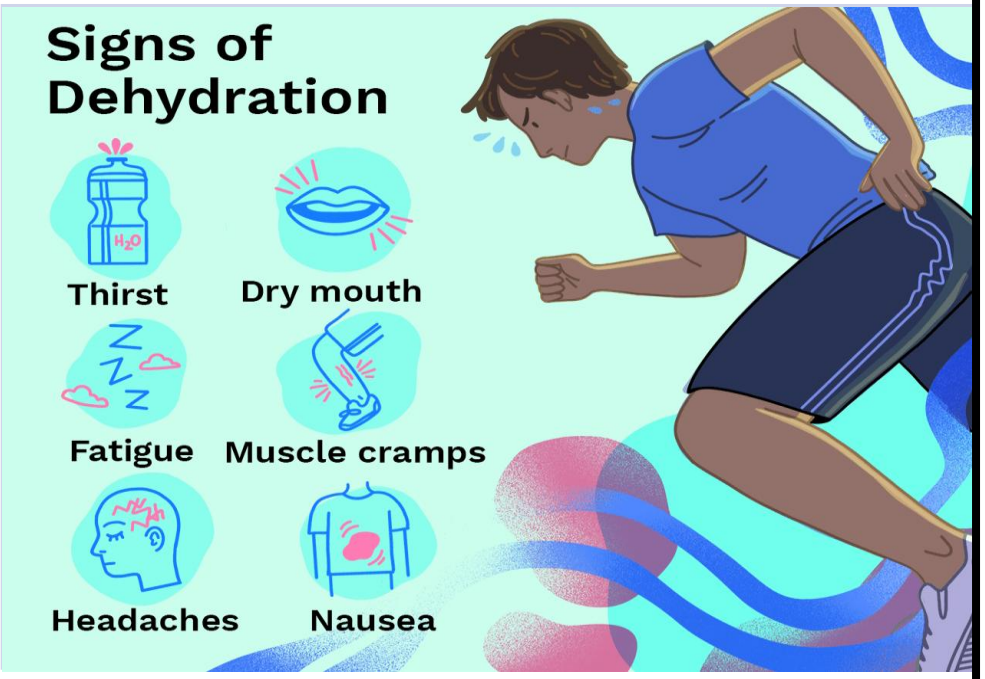
In some sports dehydration is sometimes used as a tool to lose weight very quickly.

A boxer may reduce their water intake before a weigh-in ensure they meet their weight requirements.

This is dangerous as dehydration can lead to headaches, nausea or even life-threatening conditions.

Topic area 3: Factors to consider when developing a balanced nutrition plan for a selected athlete.

Topic area 3 & 4: The effects of dehydration.



Year 9 and 10 Knowledge Goals: Sport (Nutrition and Sports performance)

Tier 3 Vocabulary		
	Key word	Definition
1	calories	Unit of energy in food.
2	balance energy	When the amount of energy consumed equals the amount needed.
3	positive energy balance	When the amount of energy consumed is greater than needed.
4	negative energy balance	When the amount of energy consumed is less than needed.
5	BMR	Basal Metabolic Rate- How quickly the body is using energy.
6	macronutrients	The foods which you need in large amounts – Carbohydrates, Protein and Fat.
7	micronutrients	The food that you need in small amounts for normal growth; vitamins and minerals.
8	nutrients	The substances in food needed for the body to function.
9	rehydration	Replacing lose fluids.
10	eat well guide	A guidance to a balance, healthier diet showing the different food groups.
11	glycogen	Storage from glucose found in the muscle and liver.
12	nutrition plan	A plan which obtained the correct quantities of nutrition's to need the individual needs of the performer.

Notes

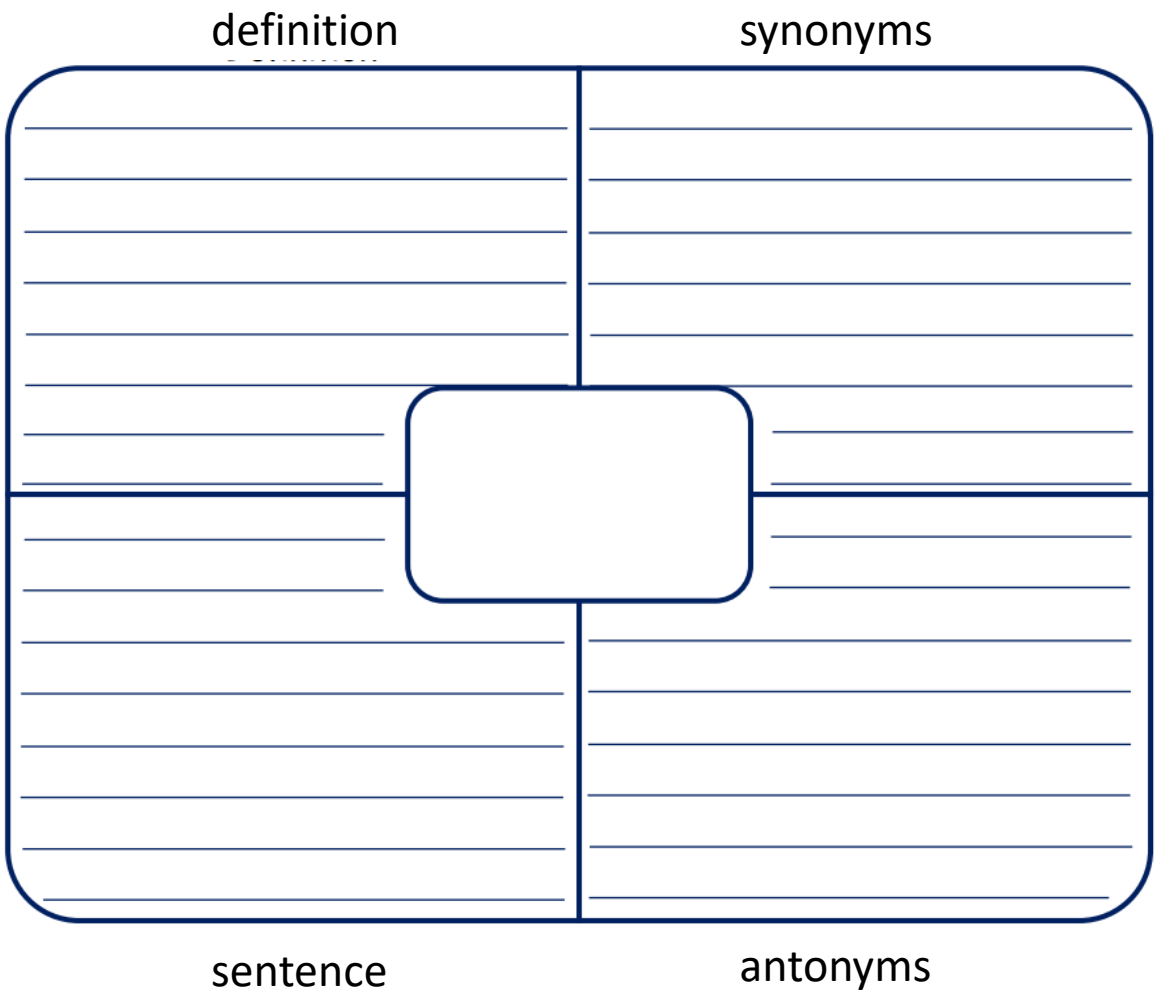
Tier 2 Vocabulary

ablution	abrasion	access
acquire	adapt	adequate
advocate	aggressive	albeit
alleviate	alter	altitude
ameliorate	analogous	analyse
behind	benign	beverage
bewitch	brawl	budge
calamity	calculate	callous
capacity	cause	central
challenge	chant	chirp
chore	circulate	claim
clear	collaborate	collude
command	committee	companion
compare	complex	confer
debate	decisive	decompose
define	delineate	deny
deteriorate	detrimental	dimension
disagree	discover	direct
eccentric	ecstasy	eloquent
emerge	emphasis	employ
encounter	epic	epitome
era	escalate	establish
evaluate	excavate	explore
farce	ferocious	flaw
flighty	formidable	function
ginormous	grapple	grizzly
hamper	harmful	harness
hierarchy	hitch	honour
hybrid	hypothesis	hysteria
identical	identify	ignorance
illusion	illustrate	immense

impeccable	imperative	impression
inevitable	innate	intense
interact	intercept	irreversible
jaunt	jubilant	justify
legacy	liberal	liberate
malicious	manipulate	match
measure	menace	meteoric
migrate	misconstrue	mitigate
native	network	notation
notice	notion	numeral
objective	observe	occupy
ointment	opaque	opponent
overall	overstate	overthrow
pallid	parallel	partition
persevere	persuade	pigment
pivot	pledge	ponder
pose	precedent	prepare
presume	previous	principal
radiant	raucous	ravage
rearrange	reckless	recline
refine	reflect	region
rejoice	relate	remote
replace	request	require
revise	rewrite	rhythm
salvation	scheme	sculpt
shift	shrewd	significant
slither	solar	sparse
specify	stability	state
supreme	surge	synonymous
tamper	technique	teeming
tentative	testament	transform

treaty	trivial	troublesome
underestimate	unscathed	update
validity	vanquish	verbose
verify	versatile	version
vibrant	victor	victory
virtuous	welfare	zealous

Literacy: Tier 2 Vocabulary – Frayer Model



Synonyms are words with the same or similar meaning:

- words such as happy, cheerful and merry.
- words such as sad, miserable and heartbroken.

Antonyms are words with opposite meanings:

- words such as angry and peaceful.
- words such as funny and serious.

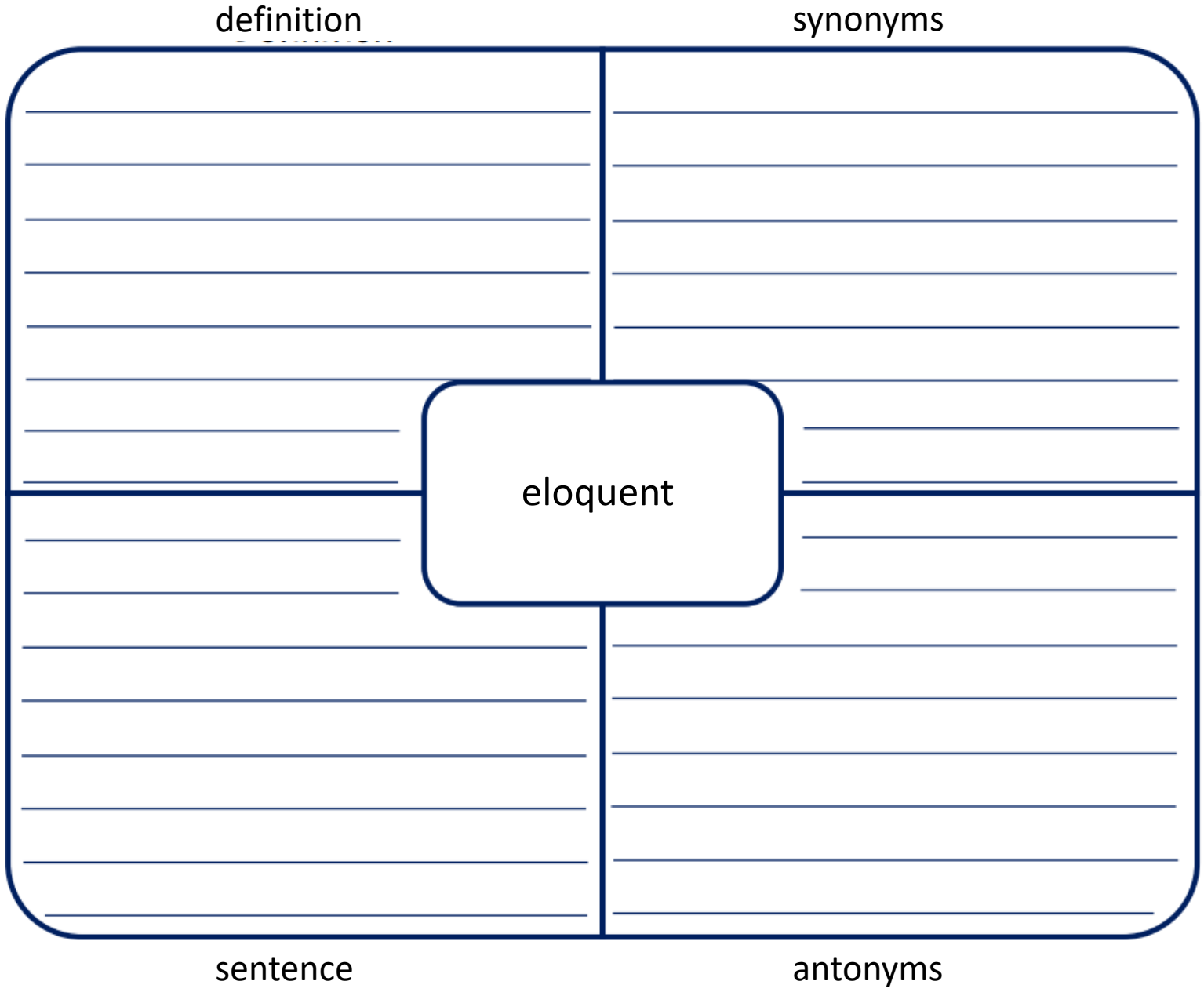
You can use a **thesaurus** to find **synonyms** and **antonyms** for words.

Scan to view thesaurus

click to view thesaurus

Have a go at creating a Frayer Model for each of the 6 tier 2 words from this term (blank templates are at the back of the booklet for you to complete this activity).

Frayer Model: Eloquent



Complete a Frayer Model for the word **eloquent**.

Scan to view thesaurus

click to view thesaurus

Frayer Model: Flighty

definition

synonyms

flighty

sentence

antonyms

Complete a Frayer Model for the word **flighty**.

Scan to view thesaurus

click to view thesaurus

Frayer Model: Hysteria

definition

synonyms

hysteria

sentence

antonyms

Complete a Frayer Model for the word **hysteria**.

Scan to view thesaurus

click to view thesaurus

Frayer Model: Overstate

definition

synonyms

overstate

sentence

antonyms

Complete a Frayer Model for the word **overstate**.

Scan to view thesaurus

click to view thesaurus

Frayer Model: Shrewd

definition

synonyms

shrewd

sentence

antonyms

Complete a Frayer Model for the word **shrewd**.

Scan to view thesaurus

click to view thesaurus

Frayer Model: Versatile

definition

synonyms

versatile

sentence

antonyms

Complete a Frayer Model for the word **versatile**.

Scan to view thesaurus

click to view thesaurus