



ASH MANOR SCHOOL  
Aspire & Achieve

# Year 9 Spring Term Knowledge organiser

Name:

Tutor group:

Tutor:

Tutor room:

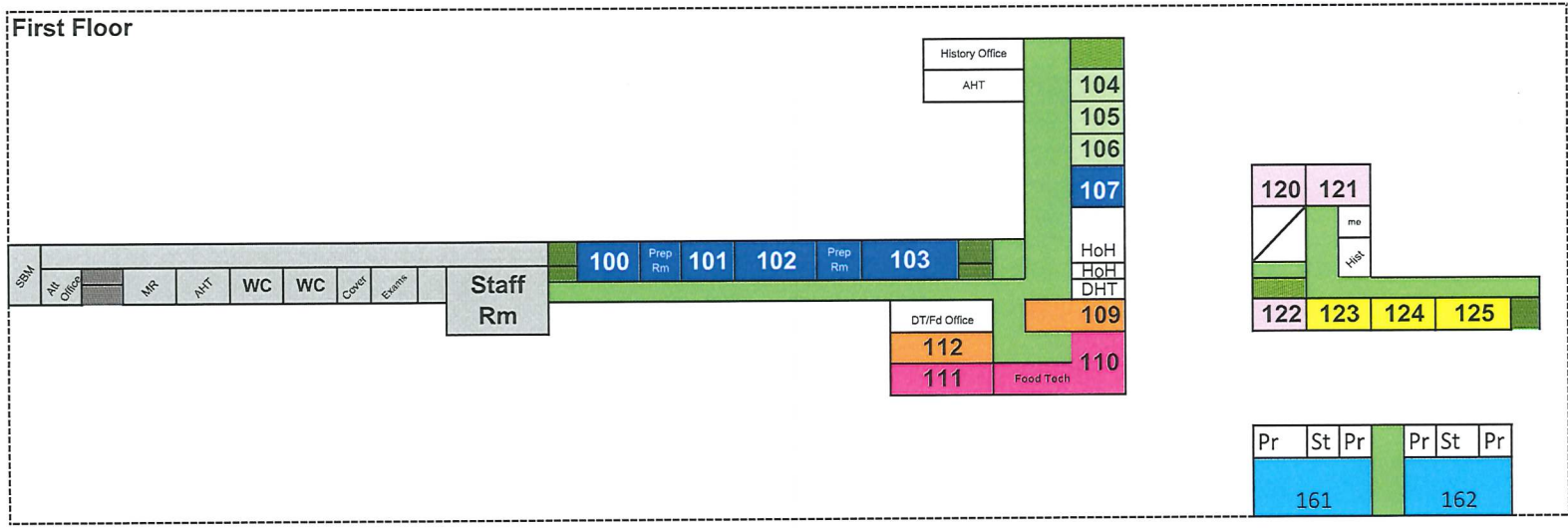
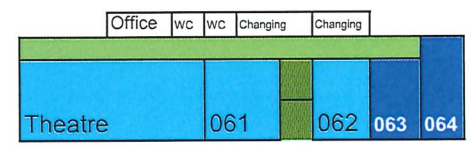
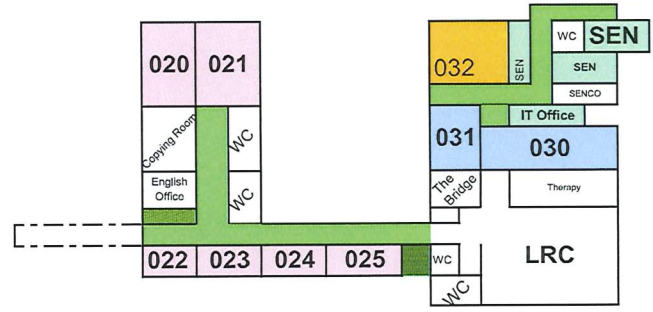
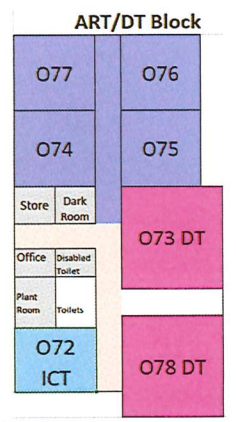
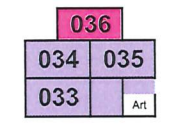
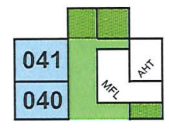
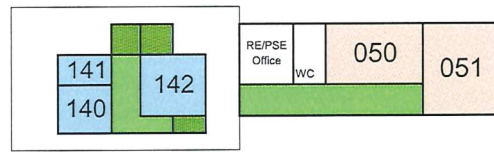
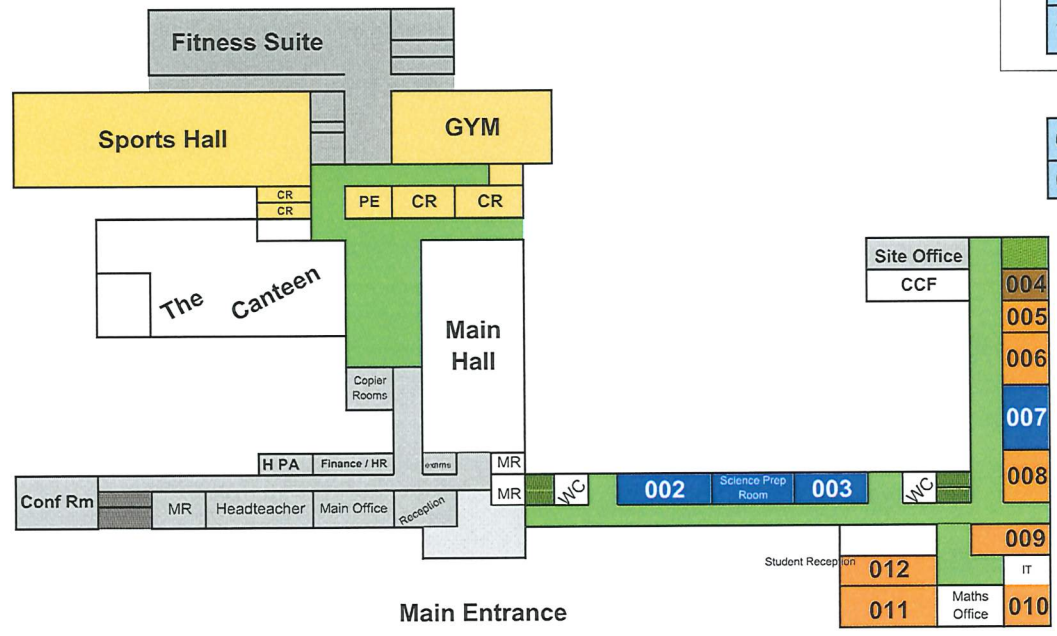
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## Key School information

Times of the school day	
8.00am – 8.30am	Breakfast in canteen
8.35am	Pre-lesson 1 bell
8.40am-9.30am	Lesson 1
9.30am-10.20am	Lesson 2
10.20am-10.40am	Morning break
10.40am-11.30am	Lesson 3
11.30am-12.20pm	Lesson 4
12.20pm-1.00pm	Lunch
1.00pm-1.20pm	Tutor time / Assembly
1.20pm-2.10pm	Lesson 5
2.10pm-3.00pm	Lesson 6
3.00pm-4.00pm	Extended learning and extra-curricular clubs

Term dates	
<b>Autumn term</b>	<b>Y7:</b> 04/09/23 to 15/12/23
	<b>Y8-11:</b> 05/09/23 to 15/12/23
Half term	23/10/23 to 27/10/23
<b>Spring term</b>	03/01/24 to 28/03/24
	Half term
<b>Summer term</b>	15/04/24 to 19/07/24
	Half term

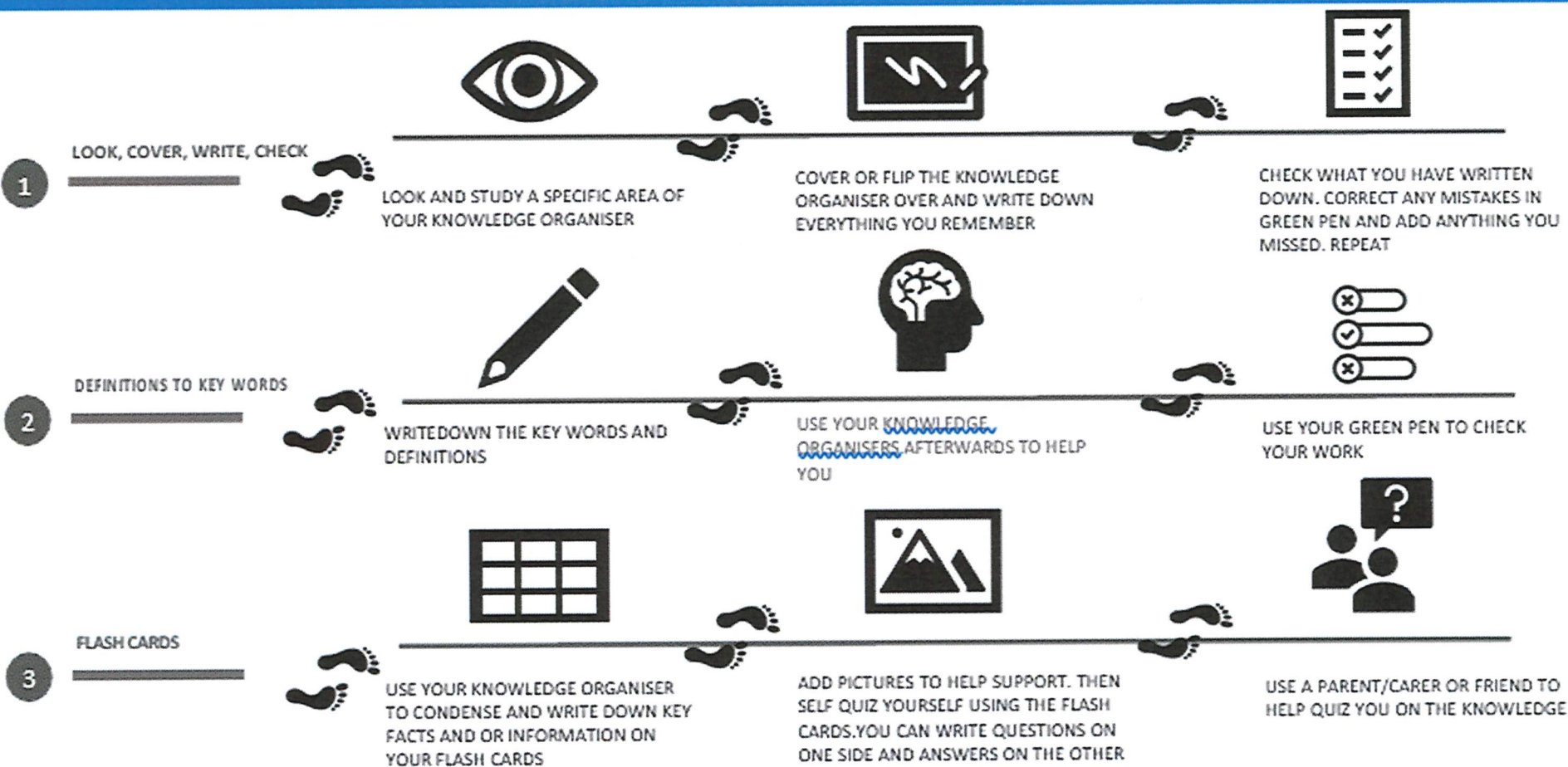
Important IT details	
<b>Username</b>	
<b>Password reminder</b>	



- Science
- Maths
- English
- Art
- Computing Studies
- MFL
- History / Classics
- Geography
- Performing Arts
- PE
- SEND
- RE
- DT/Food
- Business studies
- non student areas

# How to use Knowledge Organisers – a step by step guide

Knowledge organisers contain critical knowledge you must know. This will help you recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long term. You must have this for every lesson – it is part of your equipment.

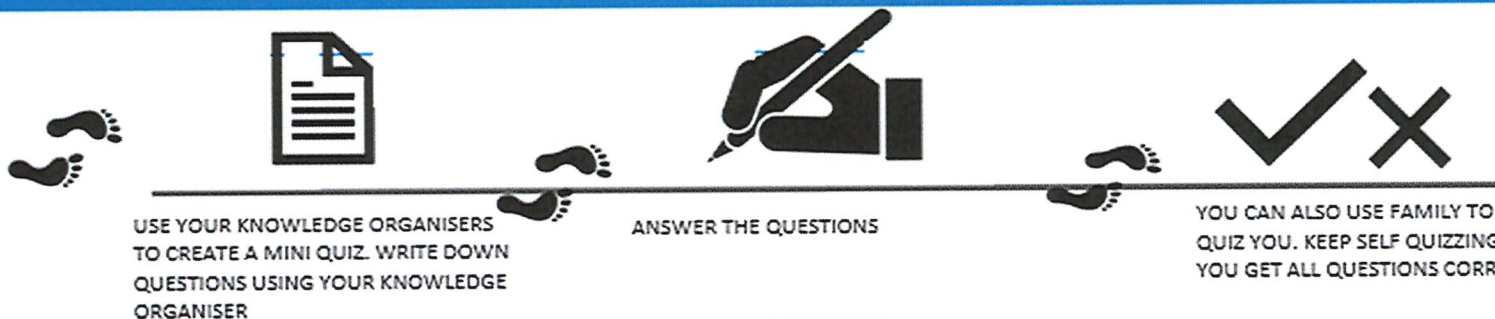


KNOWLEDGE ORGANISERS ARE ALSO AVAILABLE ON THE SCHOOL'S WEBSITE:  
<https://www.ashmanorschool.com/>

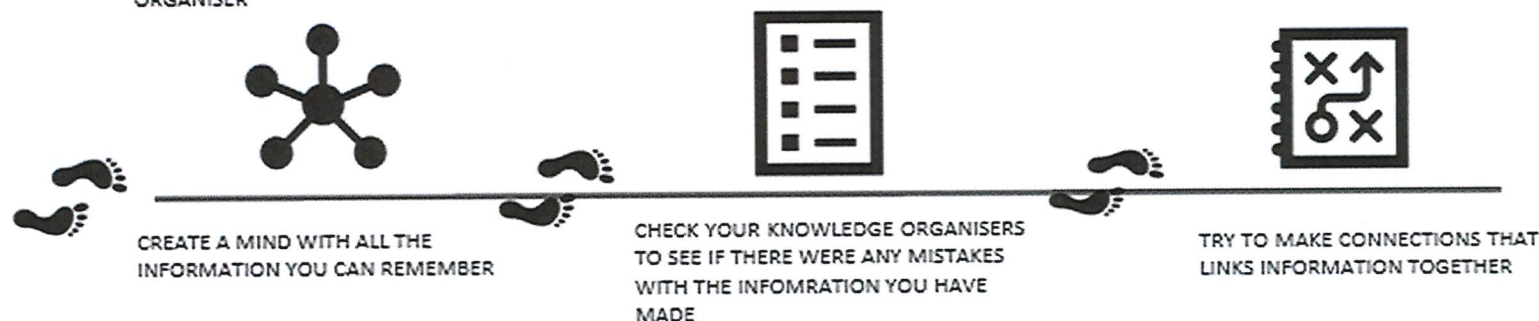
# How to use Knowledge Organisers – a step by step guide

Knowledge organisers contain critical knowledge you must know. This will help you recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long term. You must have this for every lesson – it is part of your equipment.

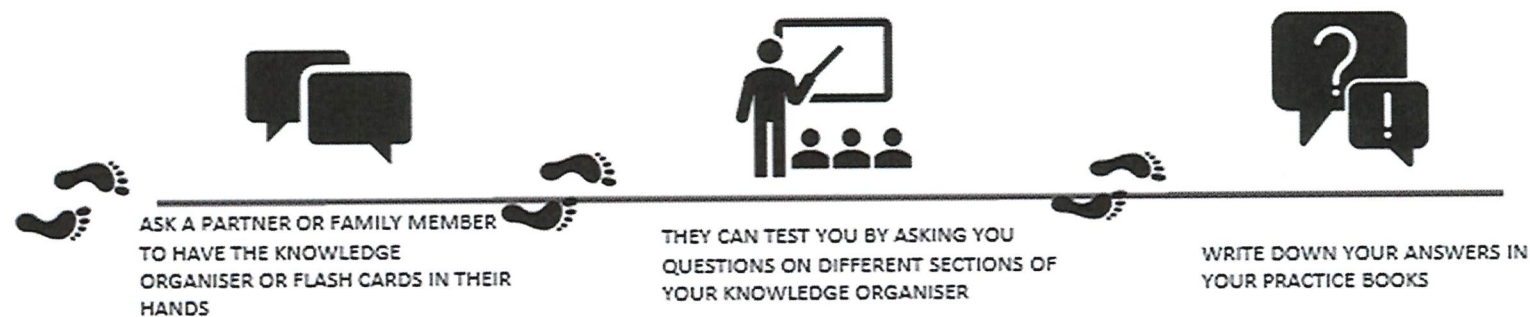
## 4 SELF QUIZZING



## 5 MIND MAPS



## 6 PAIRED RETRIEVAL



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<https://www.ashmanorschool.com/>

# ART

## Artist Research; writing an opinion.

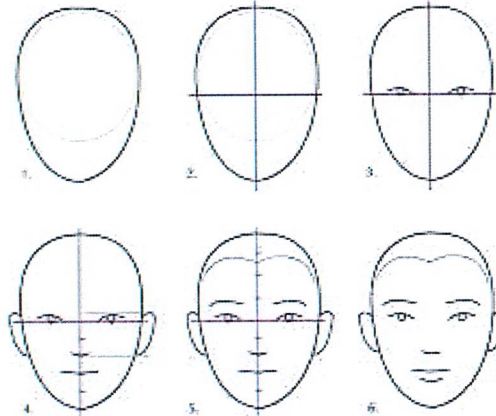
- Who is the artist?
- Where are they from?
- When were they making their artwork? Are they contemporary?
- Are they linked to a particular art movement? Are they linked to other artists?
- What materials do they use?
- Describe their work in your own words; what do you see? What mood does the work give you and why?
- How does this artists work fit into your project so far?

## Key words:

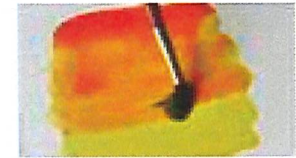
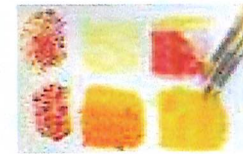
**Proportions** - describes how the sizes of different parts of a piece of art or design relate to each other.

**Tonal value/range** - refers to the degrees of lightness or darkness of an area.

## Facial proportions



## Acrylic Painting



Acrylic: water based but dries like plastic. Added in layers to build up colour. Can create texture when thickly applied, can also be watered down to create a wash. Hold your brush like you would your pencil to help control. Water to acrylic ratio: use enough water to make the acrylic flow smoothly.

## Portraiture tips

- Begin by drawing an egg shape and mapping out the proportions of the facial features.
- Once the features are correct, work into the egg shape to create the realistic curves of the face.
- Finally, shade to create tone and remove areas of tone to create light. Add texture through use of mark making.

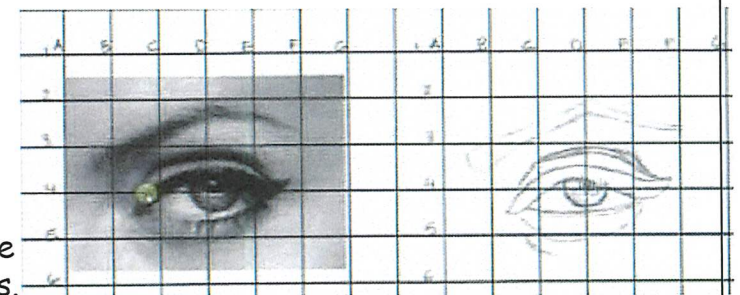


Heavy pencil pressure

Light pencil pressure

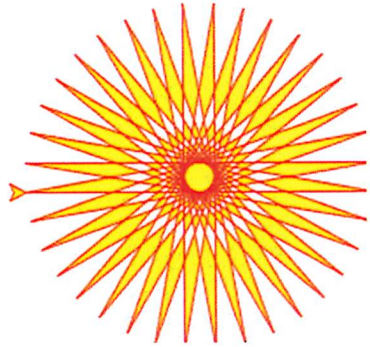
## Grid drawing

- Carefully measure to get straight lines - line it up with the edge of the paper.
- Add letters across the top and numbers down the side to use as coordinates.



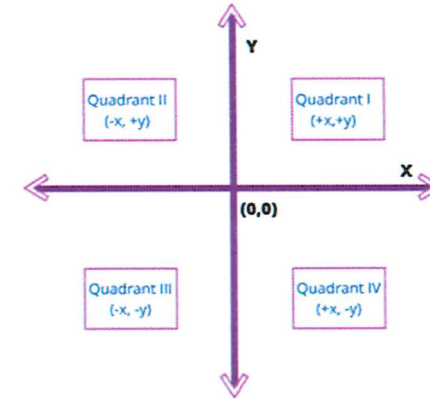
## COMPUTING YEAR 9 SPRING 1 PYTHON TURTLE AND HTML

### PYTHON TURTLE



```
myTurtle.right(90)
myTurtle.forward(100)
myTurtle.left(90)
myTurtle.backwards(100)
```

```
myTurtle.goto (X,Y)
myTurtle.penup()
myTurtle.pendown()
myTurtle.color(#####)
myTurtle.speed (Z)
```



### Hyper Text Markup

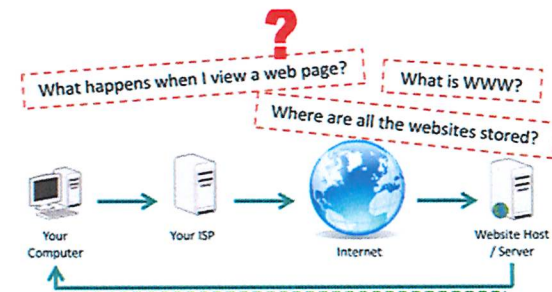
**Language (HTML)** is a basic programming language for building web pages. It uses a set of predefined tags that the web browser then interprets and renders/displays.

HTML can be written in specialist software, or in a simple text editor like Notepad. As long as the document is saved with the file extension '.html' it can be opened and viewed as a webpage from a browser. This example HTML code displays a message on a webpage:

```
<html>
  <body>
    <h1>Hello world</h1>
    <p>This is my first webpage</p>
  </body>
</html>
```

The code uses tags to describe the appearance of the information:  
 <html> states that the document is a HTML document  
 <body> states that the information appears in the body of the page  
 <h1> states that the following text appears as a prominent heading  
 <p> states that this is the beginning of a new paragraph

KEY VOCABULARY	
Browser	An application used to view web pages, e.g. Internet Explorer or Google Chrome.
Hyperlink	A link that connects to another location.
Internet	A global network connecting millions of computers.
Web browser	An application that displays web pages.
Web Page	A page designed for, and viewed in, a web browser.
Website	A web page or group of web pages hosted on one web server and viewed in a web browser, usually maintained by a person, group or organisation.





## COMPUTING YEAR 9 SPRING 2

### IMPACTS of DIGITAL TECHNOLOGY

#### Legal

The Data Protection Act 2018	<p>Outlines the responsibilities of organisations when dealing with your personal data.</p> <ol style="list-style-type: none"> <li>1. Obtained and processed fairly and lawfully.</li> <li>2. Used only for the specified purpose.</li> <li>3. Relevant for intended purpose and not excessive.</li> <li>4. Accurate and up to date.</li> <li>5. Kept for no longer than necessary.</li> <li>6. Processed in accordance with the rights of the data subject - individuals have the right to access and update their data.</li> <li>7. Stored securely - preventing unauthorised access to data.</li> <li>8. Not transferred to a country without similar data protection laws</li> </ol>
Computer Misuse Act 1990	<p>Covers the use of technology to commit crimes such as hacking.</p> <ol style="list-style-type: none"> <li>1. Unauthorised access to computer material.</li> <li>2. Unauthorised access with intent to commit or facilitate a crime (e.g. blackmail).</li> <li>3. Unauthorised modification of computer material (e.g. distributing viruses.)</li> </ol>
Copyright Designs and Patents Act 1988	Ensures that people are rewarded for their work and are given protective rights if someone tries to copy it.
Software licences - proprietary	Owned by the company that created it and the source code is usually not released. A licence key is often required to use it - you may have to purchase the software 'off the shelf'. You can get support from the company and the user community
Software licences – Open Source	The source code is published for others to use and modify. Large groups of programmers often contribute to open source software. The software is usually free. You can only get support from the user community.

#### Ethical (some examples – consider others)

Worker Exploitation	Some companies may give their workers poor pay and conditions to maximise their profits by manufacturing abroad
Digital divide	With the increasing reliance on technology, those without access to technology can be at a disadvantage. Both in poorer nations as a whole and also those individuals less wealthy in developed nations
Accessibility	Many computer systems and software are not fully accessible to those with disabilities.

#### Cultural and Privacy (some examples – consider others)

Impact of tech	21 <sup>st</sup> century has introduced: Mobile Phones, Social Networking, Sat-Nav, on-line shopping and many more
Negative effects	Developing countries at risk of losing their cultural identities. Western designers (e.g. US) unintentionally apply their cultural values and systems of thought whilst developing applications
Positive effects	In the developing world, the rapid spread of technology, fuelled by the Internet has led to positive cultural changes in developing countries. Easier, faster communication has contributed to the rise of democracy, as well as working towards the alleviation of poverty.
Privacy	"Big brother" Monitoring to keep us safe or an invasion of privacy? - debate

#### Environmental

Mineral Mining	Damage can be done while mining for the mineral components needed to produce technology
Manufacture	Manufacturing needs additional materials and power
Powering	Power can come from environmentally damaging non-renewable energy needed to power the devices
disposal	At the end of their useful life the devices needed to be disposed of without contributing to E-waste

# Dance: Choreographic Skills Knowledge Organiser

<b>ACTION</b>	Other examples of actions:	
Travel		
Turn		
Elevation		
Gesture		
Stillness		
Use of different body parts		
Floor work		
Transfer of weight		

<b>SPACE</b>	pathways	size of movement
Pathways		
Levels		
Directions	levels	
Size of movement		
	directions	

<b>DYNAMICS</b>	Other examples of dynamics:	
Fast/slow		
Sudden/sustained		
Acceleration/ deceleration		
Strong/light		
Direct/indirect		
Flowing/abrupt		

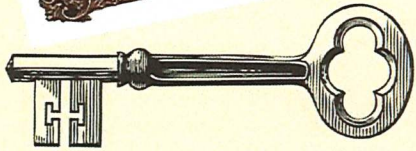
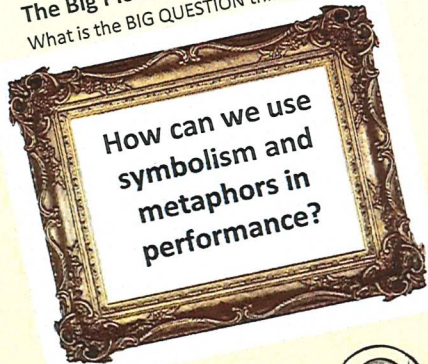
<b>RELATIONSHIPS</b>	mirroring	contact
Mirroring		
Action & reaction		
Accumulation	action and reaction	formations
Counterpoint		
Contact		
Formations	accumulation	unison
Unison		
Canon		
	counterpoint	canon

## Dance: Choreographic Skills Knowledge Organiser

Dance Term	Definition
<b>MOTIF</b>	A distinctive and recurring gesture or series of movements used to provide a theme or unifying idea.
<b>PHRASE</b>	The smallest unit of form containing a beginning, middle and an end and a high point.
<b>STIMULUS</b>	The starting point of the choreographic process. Five main categories of stimuli: Auditory Visual Tactile Ideational/Theme Kinaesthetic/Movement based
<b>CHOREOGRAPHIC INTENTION</b>	Is what you want to communicate/portray to the audience, how you want the audience to think/feel From your stimulus you will decide on a choreographic intention
<b>IMPROVISATION</b>	The process of spontaneously creating movement
<b>IMPROVISATION/CREATIVE TASKS</b>	Instructions to use or follow in order to create movement
<b>TRANSITION</b>	How one movement, phrase or section of a dance progresses into the next; a linking movement or idea.
<b>MOTIF DEVELOPMENT</b>	Ways in which a movement phrase can be varied and developed (using ASDR etc.)
<b>REPTITION</b>	Repeating the same action or phrase again.
<b>CLIMAX</b>	The most significant moment of the dance
<b>CHOREOGRAPHIC APPROACH</b>	The way in which a choreographer makes the dance.
<b>CHANCE METHOD</b>	A technique in which selected isolated movements are assigned sequence by such random methods
<b>WHOLE COMPOSITION</b>	A piece of dance choreography made up of sections that are all joined by a theme/intention

# franticassembly

The Big Picture:  
What is the BIG QUESTION this term?






## KEY VOCABULARY

<b>Abstract</b>	Something that is representational instead of literal
<b>Impulse</b>	Something that causes something to happen or happen more quickly
<b>Metaphor</b>	A thing regarded as representative or symbolic of something else
<b>Motif</b>	A dominant or recurring idea in an artistic work.
<b>Physicality</b>	The involvement of a lot of bodily contact or activity.
<b>Response</b>	A reaction to something.
<b>Touch</b>	To come into or be in contact with.

1. Physical Theatre	
<b>Physical Theatre</b>	At its simplest, you could define Physical theatre as a form of theatre that puts emphasis on movement rather than dialogue – it puts the human body at the centre of the storytelling process. As a result, it is often abstract in style, using movement in a stylised and representational way. Physical theatre shows that you don't have to use words to express ideas. It uses techniques such as movement, mime, gesture and dance and can be used to explore complex social and cultural issues.
<b>Laban</b>	Laban devised a notation system that described the system of movements by the human body. His system identified the type, direction and duration of movement <a href="https://en.wikipedia.org/wiki/Labanotation">https://en.wikipedia.org/wiki/Labanotation</a>
<b>Lecoq</b>	Jacques Lecoq developed an approach to acting using seven levels of tension. These levels were designed to help actors transition into different emotions that could be incorporated into a scene.
<b>Body Language</b>	Movement, positioning and posture of the body which gives meaning to the character's state.
<b>Choreography</b>	Designing a series of movements to form a sequence.

2 Frantic Assembly	
<b>Theatre Company</b>	Frantic Assembly has developed into one of the most studied and praised theatre companies working today. It was formed in 1994 by three students who were intrigued by theatre and wanted to create their own unique company. They wished to create non-naturalistic pieces through the use of movement and music, although they have always said that this should never take away from the storyline.
<b>Mission Statement</b>	"Our ambition is that we continue to learn and remain committed to making brave and bold theatre. At times it is physically dynamic and brutal. At others it's proudly tender and fragile."

3. Techniques		
<b>Hymn Hands</b>	The idea of Hand Hymns is to physically interact with a partner using only each other's hands. The complexity of the movements is developed through an improvisational process – each person takes it in turns to manipulate the other person.	
<b>Round – By-Through</b>	A movement sequence performed with a partner – although the number of people involved can be extended. 'Round' means literally moving around a partner, 'By' consists of being parallel to your partner and 'Through' is when you physically go through their body.	
<b>Chair Duets</b>	This is one of Frantic Assembly's simple and accessible devising exercises used to create new material. In this, you sit next to a partner and create contact improvisation whilst seated. Chair duets require a call/response style of working. Its restrictive nature forces the performer to explore and experiment with different types of movement.	

# Drama: OTHELLO Knowledge Organiser

It is the beginning of the play and Roderigo and Iago have met up. They are discussing Othello and his secret marriage to Desdemona. Roderigo questions whether Iago hates Othello or not.

Who is Iago referring to when he says the word 'asked'?  
What is a lieutenant and why would this be so important to Iago?  
Iago thinks that he 'deserve(s) that position', what does this suggest about Iago?

Why does Iago point this out about Cassio?

A 'Moor' in Shakespearian times means 'a black man' or a man of a different race. Why does Iago feel the need to point this out? What does it suggest about Iago and his feelings towards Othello?

## IAGO

I do hate him, I swear. Three of Venice's most important noblemen took their hats off to him and asked him humbly to make me his lieutenant, the second in command. And I know my own worth well enough to know I deserve that position. But he wants to have things his own way, so he sidesteps the issue with a lot of military talk and refuses their request. "I've already chosen my lieutenant," he says. And who does he choose? A guy who knows more about numbers than fighting! This guy from Florence named Michael Cassio. He has a pretty wife but he can't even control her. And he's definitely never commanded men in battle. He's got no more hands-on knowledge of warfare than an old woman—unless you count what he's read in books, which any peace-lover can do. His military understanding is all theory, no practice. But Cassio's been chosen over me. My career is cut short by some bookkeeper, even though the general saw my fighting skills first-hand in Rhodes and Cyprus. This accountant is now lieutenant, while I end up as the Moor's flag-bearer.

## OTHELLO KEY THEMES

**AMBITION** in Othello is seen when Othello himself breaks the norm of society as a black man and becomes a very prestigious member of the community. The character with the most ambition, however, would have to be Iago who is driven to destroy the hero, Othello, that has thwarted his ambition.

**JEALOUSY** in Othello is the real tragedy of the story. It is Othello's public insecurity that makes him jealous of Cassio and allows him to believe that Cassio has slept with Desdemona. Also, it is Iago's jealousy of Othello that drives him to destroy both Othello and Desdemona.

**REVENGE** is a central to Shakespeare's play Othello to a very large extent. The entire play is shaped around revenge. Iago, who is seen as Shakespeare's greatest villain is fueled by revenge. Iago has jealousy over Cassio's position and has suspicions towards both Cassio and Othello of adultery with his wife Emilia.

**OTHELLO: IAGO & CASSIO ACT II, SC II**

**IAGO** Come, lieutenant, I have a stoup of wine;

**CASSIO** Not to-night, good Iago: I have very poor and unhappy brains for drinking:

**IAGO** O, they are our friends; but one cup: I'll drink for you.

**CASSIO** I have drunk but one cup to-night, I am unfortunate in the infirmity, and dare not task my weakness with any more.

**IAGO** What, man! 'tis a night of revels: the gallants desire it.

**CASSIO** I'll do't; but it dislikes me.



Performer
<p><b><u>Vocal skills</u></b></p> <ul style="list-style-type: none"> <li>pitch</li> <li>tone</li> <li>pace/tempo</li> <li>Pause</li> <li>breath and sighs</li> <li>accent</li> <li>volume</li> <li>clarity</li> </ul>
<p><b><u>Physical skills</u></b></p> <ul style="list-style-type: none"> <li>gesture</li> <li>stillness</li> <li>fluency</li> <li>expression</li> <li>posture</li> <li>facial expressions</li> <li>eye contact</li> <li>movement</li> </ul>
<p><b><u>Space</u></b></p> <ul style="list-style-type: none"> <li>proxemics</li> <li>relationships</li> <li>positioned</li> <li>blocking</li> <li>interaction (set / audience)</li> </ul>

# Evaluating Performance

## IDEA

Use this 'formula' whenever you evaluate a performance you have GIVEN or one you have EXPERIENCED

Identify the skill

Describe how you/they used it

Explain why focussing on...

Audience Impact

### Vocal skills

- pitch
- pace/tempo
- pause
- power/volume
- tone
- Intonation
- emphasis

### Spatial Skills

*Use of space*

- positioning *on stage*
- movement *across stage*
- levels
- proxemics

### Physical Skills

- facial expression (face)
- gesture (arms/hands)
- posture(back/shoulders)
- stance (feet)
- eye contact/gaze (eyes)
- gait (walking style)

### Evaluation Words

- Successful**
- Effective**
- Engaging**
- Powerful**

What did the audience  
**THINK?**  
**FEEL?**  
**EXPERIENCE?**

# Spring

# English Language

# YEAR 9

## Q3

### Analysis

Exploring how language and structure create ideas.

**Paper 1 – 6 marks**

**Paper 2 - 15 marks**

### Success Criteria

- ✓ Analysis of the text
- ✓ Analysis of **both** language and structure
- ✓ Explanation of the effect on the reader
- ✓ Quotations used to support the answer.

### TIES and SPECS

Themes Successfully  
 Ideas Purposefully  
 Events Effectively  
 Settings Creatively  
 Skilfully

**Analysis:** detailed examination of the elements of something

**Question style:** "Analyse how the writer uses language and structure to interest and engage readers."

<b>What?</b>	What is the writer trying to tell us about the character/theme/setting?	<i>The idea of X is presented as... The writer presents the theme of X as ...</i>
<b>How?</b>	How do they use language/structure to do this? How do key words/phrases show this?	<i>The adjectives/noun/verb/phrase/image ... This suggests/implies/indicates/demonstrates...</i>
<b>Why?</b>	Why are they doing this? Why did they choose that language?	<i>The writer wants us to understand the significance of ... It can be seen that/it might be thought that/some readers might think</i>

**The reader feels:** empathy, sympathy, resentment, indignation, respect, disapproval, horrified, anticipation, admiration, relief, apprehension, critical, disappointment, anxious, disillusioned, impatient.

## Adverb

**Inherently**  
**Intrinsically**  
**Innately**  
**Naturally**  
[in a way that is characteristic or natural]

**Significantly**  
**Crucially**  
**Notably**  
**Particularly**  
[in a way that is important/ needs to be known]

**Undoubtedly**  
**Undeniably**  
**Unquestionably**  
**Indubitably**  
[in a way that is true/ can't be argued]

**Arguably**  
**Debatably**  
**Probably**  
**Potentially**  
**Possibly**  
[in a way that could be true]

Expresses a clear evaluation of the writer's ideas

## adjective

**bitter**  
**resentful**  
**disgruntled**  
**discontented**  
**spiteful**  
**exasperated**  
**displeased**

**subtle**  
**crafted**  
**precise**  
**skillful**  
**adept**  
**expert**  
**masterful**

**bleak**  
**harsh**  
**grim**  
**ominous**  
**shocking**  
**gruesome**  
**gloomy**

**angry**  
**outraged**  
**aggrieved**  
**incensed**  
**infuriated**  
**enraged**  
**indignant**

**optimistic**  
**hopeful**  
**joyful**  
**amiable**  
**affable**  
**genial**  
**exuberant**

Demonstrates a deeper understanding of the ideas

### Terminology:

1. **Noun** – Person, place, thing
2. **Pronoun** – In place of a noun 'you'
3. **Verb** – an action or state
4. **Adjective** – describes a noun
5. **Adverb** – describes a verb
6. **Preposition** – shows the relationship between objects
7. **Determiner** – used in front of a noun to show the type 'the' 'a'
8. **Conjunctions** – joining words
9. **Metaphor** – saying one thing is another, a comparison
10. **Simile** – using like or as to compare two things to one another
11. **Juxtaposition** – two ideas placed together for contrast
12. **Voice** – emotions or attitude expressed in a text
13. **First person** – written from an individual perspective 'I'
14. **Third Person** – written from a detached perspective 'they'
15. **Repetition** – using the same word or phrase again
16. **Perspective** - viewed from a particular point
17. **Viewpoint** – point of view, opinion



# Spring

# English Language

# YEAR 9

Paper 1 Q4, Paper 2 Q6

Evaluation

Making a judgement about an extract  
15 marks

### Success Criteria

- ✓ Evaluation of themes, ideas, events or settings
- ✓ A judgement is made about the text
- ✓ Quotations used to support the answer.

### TIES and SPECS

Themes	Successfully
Ideas	Purposefully
Events	Effectively
Settings	Creatively
	Skilfully

**Evaluation:** making of a judgment about the amount, number, or value of something

**Question style:** 'The writer attempts to engage the reader though... Evaluate how successfully this is achieved.'

<b>What?</b>	What is the writer trying to tell us about the character/theme/setting?	<i>The idea of X is presented as... The writer presents the theme of X as ...</i>
<b>How?</b>	How do they use language/structure to do this? How do key words/phrases show this?	<i>The adjectives/noun/verb/phrase/image ... This suggests/implies/indicates/demonstrates...</i>
<b>Why?</b>	Why are they doing this? Why did they choose that language?	<i>The writer wants us to understand the significance of ... It can be seen that/it might be thought that/some readers might think</i>

**The reader feels:** empathy, sympathy, resentment, indignation, respect, disapproval, horrified, anticipation, admiration, relief, apprehension, critical, disappointment, anxious, disillusioned, impatient.

### Adverb

**Inherently**  
**Intrinsically**  
**Innately**  
**Naturally**  
[in a way that is characteristic or natural]

**Significantly**  
**Crucially**  
**Notably**  
**Particularly**  
[in a way that is important/ needs to be known]

**Undoubtedly**  
**Undernably**  
**Unquestionably**  
**Indubitably**  
[in a way that is true/ can't be argued]

**Arguably**  
**Debatably**  
**Probably**  
**Potentially**  
**Possibly**  
[in a way that could be true]

### adjective

**bitter**  
**resentful**  
**disgruntled**  
**discontented**  
**spiteful**  
**exasperated**  
**displeased**

**subtle**  
**crafted**  
**precise**  
**skillful**  
**adept**  
**expert**  
**masterful**

**bleak**  
**harsh**  
**grim**  
**ominous**  
**shocking**  
**gruesome**  
**gloomy**

**angry**  
**outraged**  
**aggrieved**  
**incensed**  
**infuriated**  
**enraged**  
**indignant**

**optimistic**  
**hopeful**  
**joyful**  
**amiable**  
**affable**  
**genial**  
**exuberant**

Expresses a clear evaluation of the writer's ideas

Demonstrates a deeper understanding of the ideas

### Key words:

1. **Social** - relating to society or its organization
2. **Political** - the government or public affairs of a country or the ideas or strategies of a particular party or group in politics.
3. **Protest** - a statement or action expressing disapproval of or objection to something.
4. **Activism** - the policy or action of using vigorous campaigning to bring about political or social change.
5. **Activist** - a person who campaigns to bring about political or social change.
6. **Civil rights** - the rights of citizens to political and social freedom and equality.
7. **Corruption** - dishonest or fraudulent conduct by those in power, typically involving bribery.
8. **Prejudice** - preconceived opinion that is not based on reason or actual experience.

# Spring English Language YEAR 9

The purpose of a text can be defined as:

- To persuade
- To argue
- To advise
- To inform
- To explain
- To describe

### Top tips

- Remember that all sentences and names start with a **capital letter**.
- Always write in complete sentences.
- Include descriptive detail to set the scene for the reader.
- Use a variety of sentence starters and vocabulary.
- Write with a range of punctuation.

## Transactional Writing: composing a text for a specific purpose

<b>Upgrade Your Sentence!</b>		<b>Not only but also</b> Not only are holidays too infrequent, but they also are badly timed.	<b>So, so</b> Holidays are so infrequent, so short, that they feel as if they are over before they begun.
<b>Double adjective start</b> Infrequent and expensive, holidays hit the pockets of families across the country.	<b>Less less less</b> The less time spent with the family means the less time that is spent establishing family values, which means the less time a child is able to connect with their parents.	<b>Fortunately/ unfortunately</b> Fortunately, the holiday companies are aware of holiday dates and can adjust the capacity for those periods, unfortunately this comes at a significant financial premium.	
	<b>Whoever/ whenever</b> Whoever dictates holiday dates, and whenever they decide for them to fall, ultimately controls the happiness of millions of families across the country.		
<b>Verb beginning</b> Considering the amount of time spent apart from their families, holidays are clearly too infrequent.	<b>Holidays are too infrequent.</b>		<b>Brackets although</b> School holidays are too infrequent (although, some killjoys will love to tell you otherwise) and the impact this has on students can be seen in the high anxiety rates amongst teenagers.
	<b>More more more</b> The more dirt that was shifted away, the more of the statue's belly was exposed, and the more indignant the sacred relic became.	<b>Adverb beginning</b> Typically, no one consults children on how they feel about holiday dates and the frequency of their breaks.	

### Features of non-fiction texts

Letter:

- Use address
- Include a date
- Use a formal mode of address (Dear Sir or Madam)
- Sequence your paragraphs fluently
- Sign off appropriately.

Article:

- Create a clear and appropriate headline
- Use subheadings
- Include an overview paragraph (introduction)
- Effectively and fluently sequence your paragraphs.

Speech:

- Create a clear address to your audience
- Effectively and fluently sequence your paragraphs
- Use rhetorical indicators to show the audience is being addressed throughout
- A clear sign off at the end (even if it's just 'thank you for listening').

<b>Hook</b> What will you say to get the audience's attention? Use a compelling image or story? Say something challenging or powerful about the issue? Greet people?	<b>Exposition/Setting</b> Give the background - why should your topic matter to people? What is its history? Why is it relevant to this particular audience? This might involve sharing some research data, too.	<b>Rising Action/ Complication</b> Establish the fact that this is a burning issue. What will happen if things don't change? What is at risk? What are the potential challenges which might arise?	<b>Climax</b> What is the single most important argument in your favour? What will draw emotion, engagement and agreement from people?	<b>Falling action/ denouement</b> Begin to paint a vision of what can happen if things begin to change - why should the audience be hopeful? What signs are there that good things are happening?	<b>Satisfying ending</b> What are your solutions to this issue? What practical things would you like to see happening? How can people help by changing their attitudes, behaviours, habits?
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# Reading Tracker

BOOKS I'VE READ

STAR RATING

Recommended Reads

Recommended Reads







Books don't just go with you, they take you where you've never been

#READINGCHALLENGE

# Food and Nutrition

## Gelatinisation

The process of heating starch in a liquid which then **thickens** the liquid to make a sauce is called 'Gelatinisation'.

- When starch (e.g. flour) is heated in a liquid it starts to heat up the starch. 
- The starch begins to swell up because it is absorbing the liquid. 
- Starch falls apart in the liquid because it can't hold a lot of liquid. 
- Once the starch has burst because of the liquid and heat, the sauce can thicken. 

## Emulsifiers

Food products such as mayonnaise, milk, butter and hollandaise sauce are **emulsions** of a mixture of oil and water. **But**, oil and water **do not** mix together permanently.

Emulsifiers are needed for dressing and sauce recipes like **mayonnaise**, **butter** and **Hollandaise sauce**. These recipes contain a lot of fat and so need an emulsifier to help stop them from **splitting**.

The emulsifier used in mayo & Hollandaise is **egg yolks**.

Egg yolks contain a natural emulsifier called **LECITHIN**.



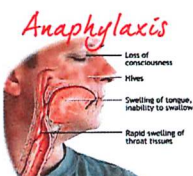
## Food Allergens



These are different types of allergens that some people cannot handle within their diet.

They can affect people in different ways, and if they are not addressed properly, they can lead to **serious** consequences.

Having a food allergy means that someone has an **allergic (serious) reaction** to certain foods. The allergic reaction involves the **immune system**. It makes the body produce a substance called **HISTAMINE** which then leads to a variety of symptoms.



People who have a serious reaction go into anaphylactic shock. This usually happens within seconds and is very serious.

**The symptoms include;**  
Swelling of the mouth and throat  
Not being able to swallow, breathe or speak properly.

## Traditional Cuisine



In the world of food, the word '**cuisine**' means; "A style of cooking and eating that is characteristic of a particular country or region of the world"

Cuisines around the world have developed over many centuries by;

- Ingredients that are usually grown or gathered **locally** in that area
- Specific **preparation and cooking methods**
- Specific **cooking equipment**
- Distinctive **presentation and/or serving techniques**.

**Many cuisines have been influenced by:**

**Geography and climate** influences which foods can be produced in a country.

The **immigration** of people from other countries

**People who settle in countries bring their own traditions, which in turn can become mixed within that countries cuisine.**

## The Chemical Properties of Carbohydrates

### Caramelisation

When sugar is heated, the sugar molecules they change colour, change flavour and texture into caramel. When sugar is heated, water naturally found in the sugar evaporates which then helps to caramelize the sugar.

Sugar caramelises at around 160°C to 170°C.

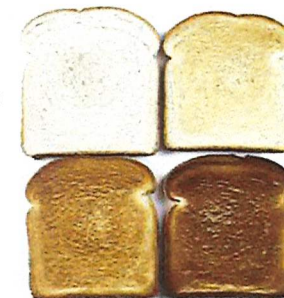


Some foods, like onions for example, naturally contain sugar in their cells.

This sugar will come out of the cells and caramelize if the food is sautéed or roasted for a period of time with the use of fats.

### Dextrinisation

When foods containing starch like bread, cakes, scones and biscuits are cooked by **dry heat** (grilling/baking) they develop a brown colour on the outside.



This is because the **starch** in the foods heat up. The starch molecules break up into small groups of glucose (a type of sugar) molecules called **DEXTRIN**. The formation of dextrin contributes to the flavour of the crust/toast.

# Food and Nutrition

## Religion & Culture

### BUDDHISM

Buddhism considers living beings to be sacred. This belief means that many Buddhists are **VEGETARIAN** or **VEGAN**.

Buddhists **AVOID** the consumption of alcohol.

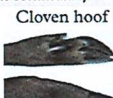
Buddhist monks fast (do not eat any food) during the afternoons.



### JUDAISM

Food that is allowed to be eaten is called 'Kosher'. E.g. animals that chew the cud (i.e. eat grass) and have cloven (split) hooves such as; sheep and cows are permitted to be eaten.

Pork and shellfish are **NOT** eaten by the Jewish community.



### HINDUISM

Food is believed to contain particular energies that people receive when they eat.

The cow is a symbol of abundance and so beef is **NOT** eaten by Hindus. The cow is seen as **sacred**.

Many Hindus are **VEGETARIAN**.



### CHRISTIANITY

Food and drink are regarded and celebrated as part of God's creation.

There are **NO** strict rules about food and drink that modern Christians are expected to obey.

Shrove Tuesday, Lent, Easter & Christmas are special occasions within the Christian religion.



### ISLAM

Muslim dietary laws are found in the Qur'an (the Islamic holy book).

The laws state what is lawful (Halal) and requires that animals are to be slaughtered in a special ritual called **Zibah**.

Muslims do **NOT** eat pork products.



### SIKHISM

Many Sikhs are **VEGETARIANS**

Some Sikhs do **NOT** drink alcohol, tea or coffee.



## Heat Transfers

Food is cooked for a variety of reasons.

High risk foods must be cooked properly to destroy the food poisoning bacteria (**pathogens**) they are likely to contain.

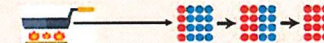
Some foods contain natural **toxins** (poisons) that would be harmful if the food was eaten raw.

Cooking **destroys** these toxins and makes the food safe to eat

**CONDUCTION** is heat transfer due to the **vibration of particles**.

When a pan is placed on hob, heat energy from the hob causes the particles in pan to **vibrate & gain heat**.

The particles collide with particles nearby & pass on their heat.



When food is placed in the pan, the heat then transfers to food and cooks it.

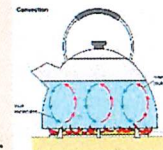
Cooking develops flavour by causing **chemical reactions** to take place in the food. E.g. When cooking cakes: the **fat melts**, **proteins** in the egg **coagulate**, the **sugar caramelises** and the **starch gelatinises**.

**CONVECTION** is the heat transfer through **gases and liquids**.

When heating a liquid, the liquid near the heat source heats up.

The warmer liquid rises above the colder surrounding liquid.

The colder moves to the bottom, creating a circular motion, known **convection currents**.



Convection occurs in ovens as the hot air rises and cool air falls.

Cooking improves the **texture** of food and makes it easier to eat, swallow and digest. E.g. Cooking starchy foods cause starch granules to swell, gelatinise and thicken or soften a food.

Radiation is heat transfer through **waves of radiation**.

There is **no direct contact** between the heat source and the food.

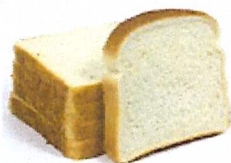
**Toasters, grills, microwaves and BBQ's** use radiation to cook food.

Radiation waves are emitted and as they reach the food they are absorbed and heat up the food.



## Raising Agents

Yeast is a **biological raising agent** used in bread making which helps the bread to rise and become light and fluffy.



For yeast to 'wake up' and work, it needs four conditions: Food, warmth, time & moisture. When the yeast is put into **warm water** and fed a bit of sugar (food), left alone for an **hour** or so in a **warm** area... it starts to produce **carbon dioxide & alcohol**. This process is called **FERMENTATION**. **The yeast won't work and breads will not rise without this process**

## Chemical raising agents

**Bicarbonate of Soda**

**Baking Powder**

**Cream of Tartar**



These are raising agents that contain a combination of **acids** and **alkalis** that create CO<sub>2</sub> (Carbon Dioxide) which produces light and airy baked foods. **They each have a distinct taste.**

For example, bicarb of soda has a soapy taste because it is an alkaline substance.



## Steam

When foods are heated containing water, it produces steam for food to rise.

If there is liquid present in a mixture during baking, then **steam** will be produced as the **heat** increases. The oven temperature must be **high** in order to raise the liquid (in the mixture) rapidly to **boiling point** (100°C).

Some foods that use steam as a raising agent are; profiteroles, Yorkshire puddings, puff pastry.



**Le temps de loisirs** *Leisure Time*

**Identity and Culture**



**Qu'est-ce que tu fais pendant ton temps libre?**

*What do you do during your free time?*

*D'habitude, je fais de la natation avec mon frère parce que c'est bon pour la santé au moins deux fois par mois. De plus, j'adore aller en ville pour voir des films avec mes amis.*

**Qu'est-ce que tu aimes comme sport ?**

*What sport do you like ?*

*Le sport que j'aime le plus, c'est le rugby. Je le joue trois fois par semaine et c'est formidable. Quand j'étais petit-e, j'adorais jouer au rugby mais maintenant je préfère faire de la natation.*

**Qu'est-ce que tu aimes comme musique ?**

*What music do you like?*

*J'écoute souvent du rap, mais je pense que je préfère le pop parce que les paroles sont plus belles. Quand j'étais plus jeune, j'aimais la musique classique alors que c'était relaxant.*

**Qu'est-ce que tu aimais lire quand tu étais plus jeune ?**

*What did you used to read when you were younger ?*

*Quand j'étais petit-e, je lisais des livres illustrés et ils étaient fascinants. Mon frère était fan des romans historiques mais maintenant il préfère les journaux.*

**Que fais-tu quand tu es connecté?**

*What do you do when you are online ?*

*Normalement en ligne, je chatte avec mes amis sur Snapchat et on joue à des jeux vidéo. Quelquefois, j'aime créer des vidéos avec mes amis pour TikTok car on adore danser ensemble.*

**Quelle est ton émission préférée?**

*What is your favourite TV show ?*

*J'adore regarder les comédies, surtout Friends! C'est très divertissant et à mon avis, c'est la meilleure émission. Cependant ma demi-sœur préfère regarder des feuilletons comme Eastenders – ce que je trouve barbant !*

**Qu'est-ce que tu vas regarder à la télé ce soir ?**

*What are you going to watch on TV tonight?*

*Ce soir, je vais regarder le nouvel épisode de Brooklyn 99. Ça va être très marrant ! Après cela, je vais regarder un match de foot avec mon père – allez l'OM !*

**Parle-moi d'un film que tu as vu récemment**

*Talk to me about a film that you have watched recently*

*La semaine dernière, je suis allé au cinéma et j'ai regardé le film Coco. C'était amusant mais un peu long. J'ai acheté du pop-corn mais le prix était exorbitant !*

**Qui est ton acteur/actrice préféré(e) et pourquoi ?**

*Who is your favourite actor/actress and why ?*

*Pour moi, mon acteur préféré est Tom Holland car il est tellement drôle et talentueux. Je l'aime !*

**Que penses-tu des réseaux sociaux?**

*What do you think of social networks ?*

*Je dirais que les réseaux sociaux sont utiles, mais parfois je les trouve une perte de temps. Il y a aussi des risques quand on utilise des réseaux sociaux comme des inconnus qui gagnent la confiance des jeunes – c'est dangereux.*

**Question you will ask:**

**Fancy Phrases:**

<b>Qualifiers</b>	Un peu <b>a bit</b> Très/Beaucoup <b>very/a lot</b> Assez <b>quite</b> Trop <b>too/too much</b> Quelque chose <b>somewhat</b>	<b>Time expressions</b>	L'année dernière <b>last year</b> Il y a deux ans <b>two years ago</b> Quand j'étais petit(e) <b>when I was little</b> L'année prochaine <b>next year</b> Dans deux ans <b>in two years' time</b>	<b>Simple future</b>	J'irai <b>I will go</b> Je serai <b>I will be</b> J'aurai <b>I will have</b> Je ferai <b>I will do/make</b> Je visiterai <b>I will visit</b>
<b>Adverbs</b>	Tous les jours <b>every day</b> Toujours <b>always</b> Ne... jamais <b>never</b> Quelquefois <b>sometimes</b> Constamment <b>constantly</b>	<b>Variety of pronouns</b>	Marie aime <b>Marie likes</b> Ce qu'elle adore le plus/le moins <b>What I like the most/least</b> Le meilleur/le pire <b>the best/worst</b> Nous nous entendons bien <b>we get on well</b>	<b>Conditional</b>	J'irais <b>I would go</b> Je serais <b>I would be</b> J'aurais <b>I would have</b> Je ferais <b>I would do/make</b> Je visiterais <b>I would visit</b>
<b>Connectives</b>	Néanmoins <b>nonetheless</b> Pourtant <b>however</b> Pour cette raison <b>because of that</b> Grâce à <b>thanks to</b> Par exemple <b>for example</b>	<b>Variety of persons</b>	Il/elle a <b>she/he/it has</b> Il/elle fait <b>she/he/it does/makes</b> C'est <b>it is</b> Nous avons visité <b>we visit/visited</b> C'est bien passé <b>we have/had a good time</b>	<b>Si clauses</b>	Si je gagnais au Lotto, j'irais à New York <b>If I won the lottery, I would go to New York</b> Si je pouvais, je travaillerais comme médecin <b>If I could, I would work as a doctor</b> Si je pouvais, j'étudierais le français à la fac <b>If I could, I would study French at university</b> Si j'étais riche, j'achèterais une grande maison <b>If I were rich, I would buy a mansion</b> Si j'avais de l'argent, j'habiterais en France <b>If I had money, I would live in France</b>
<b>Comparisons Superlatives</b>	Plus/Moins... que <b>more/less than</b> Mieux/Pire... QUE <b>better/worse than</b> Le plus/Le moins <b>the most/least</b> Le meilleur/le pire <b>the best/worst</b> Ce que j'aime le plus/le moins <b>what I like the most/least</b>	<b>Infinitive phrases</b>	Je veux + INF <b>I want to</b> Je dois + INF <b>I have to</b> Je peux + INF <b>I can</b> J'ai l'intention de + INF <b>I intend to</b> J'ai décidé de + INF <b>I decided to</b>	<b>Subjunctive</b>	Si seulement je pourrais... <b>I wish I could</b> Si seulement il y aurait <b>I wish there were</b> Quand je serai adulte <b>when I am older</b> Je ne pense pas qu'il soit... <b>I don't think it is</b> Il se peut qu'il ait <b>it may have</b>
<b>Sequencers</b>	Premièrement <b>firstly</b> Puis <b>then</b> Donc <b>so</b> Depuis <b>afterwards</b> Finalement <b>finally</b>	<b>Passé Composé</b>	Je suis allé(e) à <b>I went to</b> J'ai été <b>I was</b> J'ai eu <b>I had</b> J'ai fait <b>I did/made</b> J'ai visité/J'ai rendu visite à <b>I visited</b>	<b>Idiom</b>	Ça coute les yeux de la tête <b>he/she is a star</b> Je fais la grasse matinée <b>I have a lie in</b> Je dis ça, je dis rien <b>I'm just saying</b> Je saute du coq à l'âne <b>This is unrelated</b> Revenons à nos moutons <b>Back to the matter at hand</b>
<b>Negatives</b>	Ne ... jamais <b>never</b> Ne ... plus <b>no longer</b> Ni... ni <b>neither... nor</b> Non plus <b>neither</b>	<b>Imperfect</b>	J'allais <b>I used to go</b> J'étais <b>I used to be</b> J'avais <b>I used to have</b> Je faisais <b>I used to do/make</b> Je visitais <b>I used to visit</b>		
<b>Opinions with reasons</b>	Je crois que... parce que <b>I believe that... as</b> Je pense que... car <b>I think that... since</b> A mon avis... même si <b>In my opinion... although</b> Il me semble que ... vu que <b>It seems to me that... seeing that...</b> Je suis convaincu que... étant donné que <b>I am convinced that... given that</b>	<b>Immediate future</b>	Je vais être <b>I'm going to be</b> Je vais avoir <b>I'm going to have</b> Je vais faire <b>I'm going to do</b> Je vais aller <b>I'm going to go</b> Je vais visiter <b>I'm going to visit</b>		

## Significance of Resources

Resources such as food, energy and water are the things that we use and are needed for **basic human development**. Access to these resources affects the **economic** and **social** well-being of people and countries.

### FOOD

Without enough nutritious food, people can become **malnourished**. This can make them ill. This can prevent people working or receiving education. Globally **1/3 of all children die from diseases linked to malnourishment**.

### WATER

People need a supply of **clean and safe water** for drinking, cooking and washing. Water is also needed for food, clothes and other products. Water-borne diseases such as **cholera & typhoid** kill many people each year.

### ENERGY

A good supply of energy is needed for a basic standard of living. People need **light and heat** for cooking or to stay warm. It is also needed for **industry**. LICs & NEEs with less energy may burn wood for fuel-leading to local deforestation.

## Global Supply and Consumption of Resources

The global distribution of resources is very **uneven**.

Some countries don't have their own energy reserves and others have dry environments that are not suitable for food production.

To access more resources some countries have to **import** them or find **technological solutions** to produce more.

**Consumption** of resources depends on **wealth** as well as resource **availability**.

### HICs

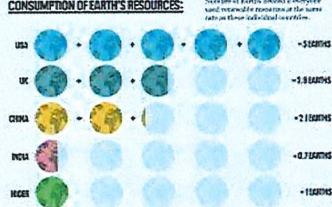
- Consumption of resources is **greater** in HICs because they can afford to **buy** the resources they need and they expect a **higher standard of living**.
- Countries such as **Luxembourg (Europe)** import much of the energy they use.

### NEEs

- Consumption is **increasing rapidly** in NEEs e.g. **China**.
- Industry is **developing** quickly (which requires a lot of energy)
- Population and wealth** are also **increasing rapidly** meaning there is greater demand for resources.

### CONSUMPTION OF EARTH'S RESOURCES:

Number of Earths needed to regenerate resources at the same rate as those consumed each year.



### LICs

- Consumption is **lower** in LICs e.g. **Uganda (Africa)**
- This is because they either **can't afford to exploit** the resources they have OR **can't afford to import** the resources they lack.

## Food in the UK

### Growing Demand for Food

- The UK imports about 40% of its food. This increases people's **carbon footprint**.
- There is growing demand for greater choice of **exotic foods** needed all year round.
- Foods from abroad are more affordable.
- Many food types are unsuitable to be grown in the UK.

### Impact of Demand

Foods can travel long distances (**food miles**). **Importing food adds to our carbon footprint.**

- + Supports workers with an income
- + Supports families in LICs.
- + Taxes from farmers' incomes contribute to local services.
- **Less land for locals to grow their own food.**
- **Farmers exposed to chemicals.**

### Agribusiness

Farming is being treated like a **large industrial business**. This is **increasing food production**. E.g. **Thanet Earth, Kent**.

- + **Intensive farming maximises the amount of food produced.**
- + **Using machinery which increases the farms efficiency.**
- **Only employs a small number of workers.**
- **Chemicals used on farms damages the habitats and wildlife.**

### Sustainable Foods

Organic foods that have little **impact on the environment** and are **healthier** have been rising. **Local food sourcing** is also rising in popularity. E.g. **Riverford Farms**.

- Reduces emissions by only eating food from the UK.
- Buying locally sourced food** supports local shops and farms.
- A third of people **grow their own food**.

## Water in the UK

### Growing Demand

The average water used per household has risen by 70%. This **growing demand is predicted to increase by 5% by 2020**. This is due to:

- A growing UK population.
- Water-intensive appliances.
- Showers and baths taken.
- Industrial and leisure use.
- Watering greenhouses.

### Deficit and Surplus

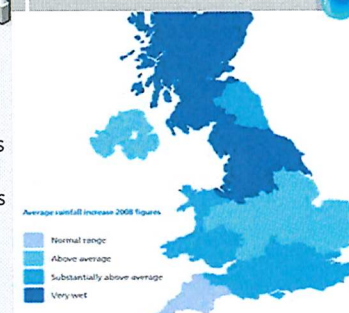
The north and west have a **water surplus** (more water than is required). The south and east have a **water deficit** (more water needed than is actually available). More than half of England is experiencing **water stress** (where demand exceeds supply).

### Pollution and Quality

Cause and effects include:

- Chemical run-off from farmland can destroy habitats and kills animals.
- Oil from boats and ships poisons wildlife.
- Untreated waste from industries creates unsafe drinking water.
- Sewage containing bacteria spreads infectious diseases. Pollution affects nearly **50%** of groundwater used.

### Water stress in the UK



# The Challenge of Resource Management

## Energy in the UK

### Growing Demand

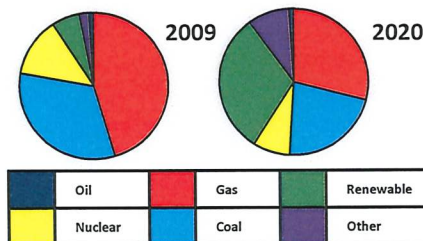
The UK **consumes less energy** than compared to the 1970s despite a smaller population. This is due to the **decline of industry**.

### Energy Mix

The majority of UK's energy mix comes from **fossil fuels**. By 2020, the UK aims for 15% of its energy to come from **renewable sources**. These renewable sources do not contribute to **climate change**.

### Changes in Energy Mix

- 75% of the UK's oil and gas has been used up.
- In 1990 91% of our energy came from coal & oil- now decreased
- UK has become too dependent on imported energy.



### Management

UK has **strict laws** that limits the amount of discharge from factories and farms. **Education campaigns** to inform what can be disposed of safely. **Waste water treatment plants** remove dangerous elements to then be used for safe drinking. Pollution traps catch and filter pollutants.

### Water Transfer

Water transfer involves moving water through pipes from areas of surplus (Wales) to areas of deficit (London). **Opposition includes:**

- Effects on **land and wildlife**.
- High maintenance **costs**.
- The **amount of energy** required to move water over long distances.

## Energy in the UK (continued)

### Significance of Renewables

- + The UK government is investing more into low carbon alternatives.
- + UK government aims to meet targets for reducing emissions.
- + Renewable sources include wind, solar and tidal energy.
- **Although infinite, renewables are still expensive to install.**
- **Shale gas deposits may be exploited in the near future.**

### Exploitation

**Nuclear**

- +New plants provide job opportunities.
- **Problems with safety and possible harm to wildlife.**
- **Nuclear plants are expensive.**

**Wind Farm**

- +Locals have low energy bills.
- +Reduces carbon footprint.
- **Construction cost is high.**
- **Visual impacts on landscape.**
- **Noise from wind turbines.**



## Year 9 History: Term 2

### The Holocaust and WW2

**The Holocaust:** The systematic murder of millions of Jews, people with disabilities, gypsies, and members of the LGBTQ+ community by the Nazis in Germany in the 1930s and 40s.

**Scapegoat:** A person who is blamed for the wrongdoings, mistakes or faults of others.

**Prejudice:** Judging someone before knowing anything about them.

**Discrimination:** Acting upon a prejudice.

**Persecute:** To act with hostility towards someone because of their religious or political beliefs.

**Anti-Semitism:** Hostility or prejudice against Jews.

#### History of Anti-Semitism

Anti-Semitism has occurred throughout History, with some of the very earliest examples being documented thousands of year ago in the Bible. Even in Shakespeare's play The Merchant of Venice, there is a stereotypical portrayal of a Jewish character (called Shylock) who was characterised as a greedy money-lender.

#### Liberation and Remembrance

The concentration camps were liberated (closed and people saved) by the Allies at the end of World War II.

Memorials to the Holocaust have been built across the world to remember the atrocious acts committed by the Nazis as part of the Holocaust.

**Jan 1933** – Adolf Hitler becomes Chancellor.

**May 1933**- Book burnings. Un-Nazi books are burned.

**Nov 1938**- Kristallnacht – Jewish businesses are destroyed.

**Nov 1940** – Warsaw ghetto established.

**April 1943** – Warsaw ghetto uprising. This became a symbol of Jewish resistance.

**March 1933** – Dachau concentration camp opens.

**Sept 1935**– Nuremburg laws begin widespread discrimination.

**Sep 1939**- Operation T-4., The killing of people with disabilities.

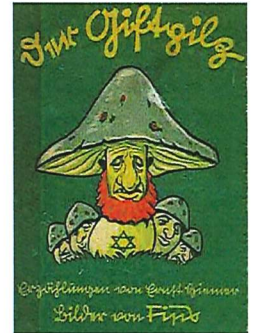
**Nov 1941** – Chelмно the first extermination camp is established.

**1945** – WW2 ends ending the Holocaust.

#### Nazi Anti-Semitism

- The Nazis believed in a superior race called the Aryan Race (characterised by people with blonde hair and blue eyes).
- The Nazis used anti-Semitic propaganda to try and make the German people hate Jews and blame them for Germany's problems. Jews were often portrayed as dangerous, or greedy. Even children were taught these messages in schools.

**The Poisonous mushroom was a book produced to teach children about the 'danger' of the Jewish community.**



#### Ghettos, concentration and extermination camps

In Nazi-occupied Europe, the Nazis sectioned off parts of cities with large Jewish populations. These sections were called 'ghettos'. Conditions in ghettos were awful: overcrowding, starvation and disease were common. In the Warsaw Ghetto, there were 400,000 Jews living in 3% of the area of the city.

Those who didn't die in the ghettos would be transported to **concentration camps**. There were several types of camp, with some being used as work (slave labour) camps, and other (such as Auschwitz) being used as a death camp as well.

At death camps such as **Auschwitz**, the prisoners would mainly arrive by train. They would then be split into two groups. Some would be taken to work as slave labour, the rest would be taken to the gas chambers where they would be killed by Zyklon B (a poison gas).

**Historical Interpretation** – The opinion of an historian.

“Battalion 101 is a prime example of how the Nazis utilised the fact that ordinary people are incredibly likely to follow orders given to them by someone in a position of authority. This is supported by the research in Stanley Milgram’s experiments of the 1960s. The evidence does not support the argument that these men killed due to any sort of blood-lust, or particular anti-Semitism; history sometimes forgets that many other groups of people were also victims of the Holocaust. This means that the reasons for participation in the Holocaust were complex.”

**Descriptive language** - Used to emphasise a point.

**Evidence** – Factual evidence selected used to support an argument.

**Evaluation** – Coming to a conclusion based on evidence.

**Sep 1939** – Germany invades Poland. WW2 Begins.

**May 1940** – Dunkirk evacuation.

**June 1941** – Operation Barbarossa. Germany invades the USSR.

**Aug 1942** – Battle of Stalingrad begins.

**Aug 1945** – The USA drop the first atomic bomb on Hiroshima, Japan.

**Sep 1945** – WW2 ends with the signing of the armistice.

**Sep 1939 – May 1940**. Phoney war, little fighting took place.

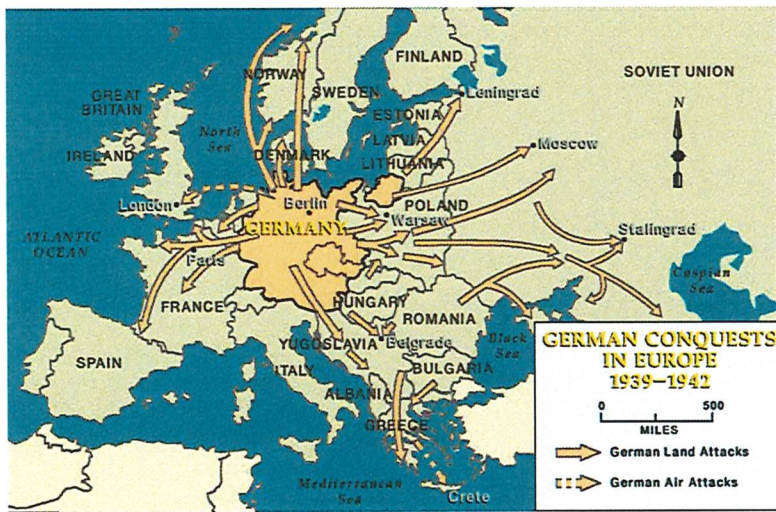
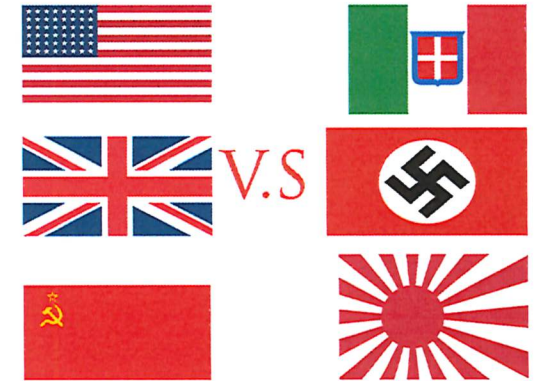
**Oct 1940** – Battle of Britain. The RAF vs Luftwaffe.

**Dec 1941** – Bombing of Pearl Harbour. USA enters the war.

**June 1944** – D Day.

**April 1945** – Battle of Berlin, final battle for Germany.

**Allies vs Axis**  
World War II was fought between the Allies (including Britain, the USA, France and the USSR) and the Axis Powers (including Germany, Italy and Japan), between 1939-1945.

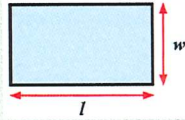


WW2 was triggered by the Nazi invasion of Poland in 1939. **Blitzkrieg** was the name of the strategy used by both the British and Germans. It involved using airplanes to bomb the enemy country. The idea was not only to cause damage, but also to lower the morale of the people.

**Blitzkrieg** – Lightning War.  
**Evacuation** – the withdrawal/ removal of troops of civilians.  
**Atomic Bomb** – A bomb which causes damage through heat, blast, and radioactivity. It is the same as 20,000 tons of T.N.T.  
**Armistice** – An agreement to stop fighting.

# Year 9 Mathematics Key Information

**Area of a Rectangle**  
 $A = l \times w$



**Speed**

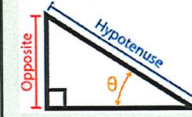


**Percentage Change**

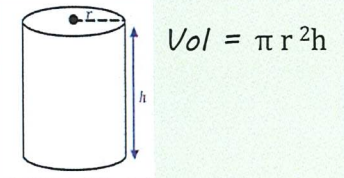
$$\frac{\text{actual change}}{\text{original}} \times 100$$

**Sinθ**

$$\text{Sin}\theta = \frac{\text{Opp}}{\text{Hyp}}$$



**Cylinder**

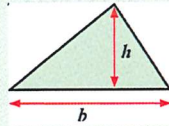


**Prime Number**

A number that has exactly 2 factors  
 2, 3, 5, 7, 11, 17, ...

**Area of a Triangle**

$$A = \frac{1}{2} \times b \times h$$

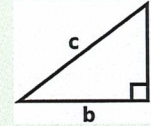


**Density**



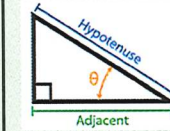
**Pythagoras' Theorem**

$$a^2 + b^2 = c^2$$

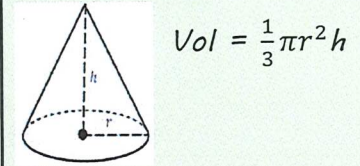


**Cosθ**

$$\text{Cos}\theta = \frac{\text{Adj}}{\text{Hyp}}$$



**Cone**

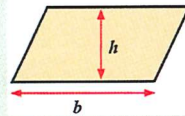


**Square Number**

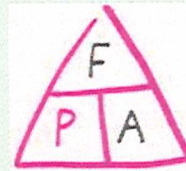
A number multiplied by itself  
 $5^2 = 5 \times 5 = 25$

**Area of a Parallelogram**

$$A = b \times h$$



**Pressure**

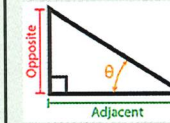


**Metric Length Conversions**

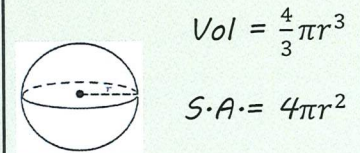
1km = 1000m  
 1m = 100cm  
 1cm = 10mm

**Tanθ**

$$\text{Tan}\theta = \frac{\text{Opp}}{\text{Adj}}$$



**Sphere**

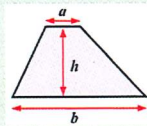


**Cube Number**

A number multiplied by itself and then itself again  
 $5^3 = 5 \times 5 \times 5 = 125$

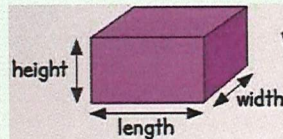
**Area of a Trapezium**

$$A = \frac{1}{2} \times (a + b) \times h$$



**Volume of a Cuboid**

$$V = l \times w \times h$$



**Metric Mass Conversions**

1 tonne = 1000kg  
 1kg = 1000g  
 1g = 1000mg

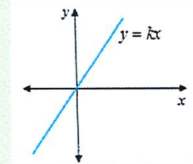
**Exact Values of Sin**

θ	0°	30°	45°	60°	90°
sinθ	0	1/2	√2/2	√3/2	1

**Direct Proportion**

$$y \propto x$$

$$y = kx$$

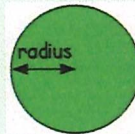


**Multiple**

The first 5 multiples of 12 are 12, 24, 36, 48 and 60

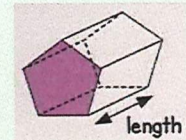
**Area of a Circle**

$$A = \pi \times r^2$$



**Volume of a Prism**

$$V = \text{area of cross-section} \times \text{length}$$



**Metric Capacity Conversions**

1l = 1000ml  
 1l = 100cl  
 1cl = 10ml

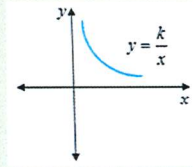
**Exact Values of Cos**

θ	0°	30°	45°	60°	90°
cosθ	1	√3/2	√2/2	1/2	0

**Inverse Proportion**

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

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

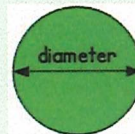


**Factor**

The factors of 12 are 1, 2, 3, 4, 6 and 12

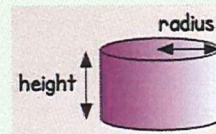
**Circumference of a Circle**

$$C = \pi \times d$$



**Volume of a Cylinder**

$$V = \pi \times r^2 \times h$$



**Error Interval**

7.4 rounded to 1dp

$$7.35 \leq x < 7.45$$

**Exact Values of Tan**

θ	0°	30°	45°	60°	90°
tanθ	0	√3/3	1	√3	

**Rules of Indices**

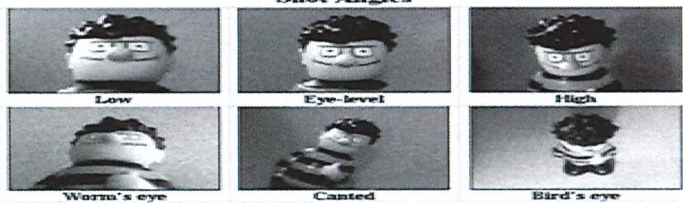
Rule 1 $a^0 = 1$	Rule 4 $(a^m)^n = a^{m \times n}$
Rule 2 $a^m \times a^n = a^{m+n}$	Rule 5 $a^{-m} = \frac{1}{a^m}$
Rule 3 $a^m \div a^n = a^{m-n}$	Rule 6 $a^{m/n} = \sqrt[n]{a^m}$



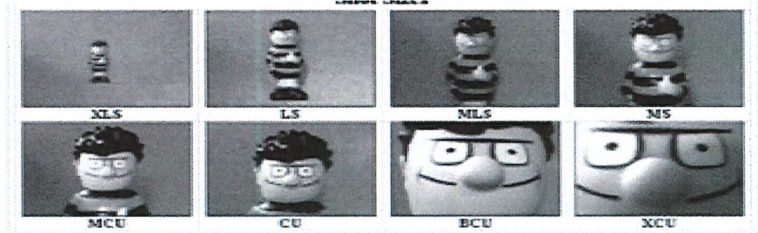
Key Words	
Blockbuster	a Hollywood movie that's made with a large budget and big stars.
Independent Film	An indie film is any feature-length or short film that is made without a major studio or big production company attached.
Marketing	the action or business of promoting and selling products or services, including market research and advertising.
Vertical Integration	Vertical integration refers to the process of acquiring business operations within the same production vertical. A company that opts for vertical integration takes complete control over one or more stages in the production or distribution of a product.
Conglomerate	a large corporation.
Subsidiaries	a company controlled by a holding company.
Horizontal Integration	Horizontal integration and vertical integration are competitive strategies that companies use to consolidate their position among competitors. Horizontal integration is the acquisition of a related business. A company that opts for horizontal integration will take over another company that operates at the same level of the <a href="#">value chain</a> in an industry.
Zeitgeist	the defining spirit or mood of a particular period of history as shown by the ideas and beliefs of the time.
Globalisation	the process by which businesses or other organizations develop international influence or start operating on an international scale.
Public Service Broadcaster	Public broadcasting involves radio, television and other electronic media outlets whose primary mission is public service.
Commercial Broadcaster	Commercial broadcasting is the broadcasting of television programs and radio programming by privately owned corporate media, as opposed to state sponsorship.
Manufactured Artist	artists who don't have any input in their music, have writing camps and have a big team of people working with them to make decisions.
Authentic Artist	Artists that influence their own music and image.
Performance Video	A video that is styled to be like a performance to an audience.
Narrative Video	A video with a story.
Convergence	Technological convergence, also known as digital convergence, is the tendency for technologies that were originally unrelated to become more closely integrated and even unified as they develop and advance.
Freemium Gaming	Freemium, a portmanteau of the words "free" and "premium," is a pricing strategy by which a basic product or service is provided free of charge, but money is charged for additional features, services, or virtual or physical goods that expand the functionality of the free version of the software.
Intrinsic Narrative	Story is written for the player to play.
Extrinsic Narrative	Story can be controlled and changed by the player.
Hyperreality	an inability of consciousness to distinguish reality from a simulation of reality, especially in technologically advanced postmodern societies

Key Theories	
Connell's Theory of Gender	Subordinated Femininity: women are subservient to men and have little power. Emphasised Femininity: the idea that women must conform to the needs and desires of men, through their looks and sexual appeal. Resistant Femininity: women as resisting the stereotypes and presenting themselves as powerful. Hegemonic Masculinity: perpetuates the idea that men are dominant in society/ Stereotypical, manly man. Complicit Masculinity: men who subvert the stereotypes of men, often engaging more with 'feminine' roles such as the stay at home dad. Subordinated Masculinity: LGBTQ+. Considered to lack power in society.
Laura Mulvey's Male Gaze Theory	Laura Mulvey's Male Gaze Theory: Female images in media texts are objectified and viewed through the eyes of a heterosexual man.
Judith Butler's Theory of Gender Stereotypes	Suggests that the existence of stereotypes is due to the fact that they are repeated over and over again in the media.
Propp's Character Theory	Hero, Villain, False Hero, Donor (gives the hero something), Helper, Princess, Father, Dispatcher (sends hero on their way).
Todorov's Theory of Equilibrium	Equilibrium: state of balance. Disequilibrium: state of conflict/chaos. New Equilibrium: resolution.
Binary Opposites	opposition exists in narratives to propel a story forward.
Enigma Codes	questions/mystery exist in media texts to engage the audience.
Active Audience Theories	Suggests that audiences can respond to and interpret media texts in their own ways. Uses and Gratifications Theory: suggests audiences choose to go to media texts to gain: Personal Identity, Information, entertainment, education or social interaction. Dyer's Utopian Theory: suggests audiences go to media texts to gain a sense of escapism from their normal lives.
Passive Audience Theories	Suggests that audiences accept the messages of the media without questioning them. Hypodermic Needle Model: messages are injected into the minds of audiences, without them questioning it. Cultivation Theory: The more an audience is exposed to something, the more likely they are to believe it is true.

Shot Angles



# Media Studies



Codes	Technical, written and symbolic tools used to construct or suggest meaning in media forms and products.
Genre	a style or category of art, music, or literature.
Mise-en-scene	the arrangement of the scenery, props, etc. on the stage of a theatrical production or on the set of a film. The setting or surroundings of an event.
Anchorage	Where the meaning of a media text is fixed or stabilised by a caption, shot type, costume or so on (ie: it anchors the meaning).
Semiotics	the study of signs and symbols and their use or interpretation.
Signifier	a sign's physical form (such as a sound, printed word, or image) as distinct from its meaning.
Signified	the idea or meaning being expressed by that signifier.
Denotation	the literal meaning of a sign.
Connotation	the associated meaning of a sign.
Polysemic	a sign with multiple connotations can be described as polysemic.
Representation	the way a person or social group is presented.
Conform	following the rules or expectations.
Subvert	going against the rules or expectations.
Under-representation	a person or social group who isn't represented often or enough in media.
Misrepresentation	a person or social group is represented inaccurately through media.
Stereotypes	an assumption made about a person or social group.
Direct Mode of Address	visually, looking towards the audience, verbally, addressing them with "you."
Indirect Mode of Address	no reference made to the audience; lack of eye contact or direct speech.
Demographic	socioeconomic factors relating to an audience.
Psychographic	specific interests or attitudes of an audience.
Geographic	the location of a specific audience.

Social Mobility	the movement between social class levels.
Cultural Capital	social assets (education, intellect, style of speech, dress, etc.) The term was coined by 1970s French sociologist Pierre Bourdieu, who developed the idea as a way to explain how power in society was transferred and social classes maintained.
Mass Audience	a large audience, made up of varying demographics, psychographics and geographics.
Niche Audience	a specific audience type with specific interests and socioeconomic factors.
Diegetic Sound	Natural, ambient sound.
Non-Diegetic Sound	Edited or added sound.
Dialogue	Speech in a narrative.
Cross Cut	Transitioning between two lines of action, indicating they are happening at the same time.
Cutting on action	Transitioning from one angle of the action, to the other, to show what has happened.
Continuity editing	Editing that creates a smooth flow to the order of events.
Dissolve	A gradual scene transition, where the end of one shot is overlapped by another.
Montage	Many scenes edited together to create a summary of events.
Jump Cut	A cut that creates a lack of continuity, by leaving out parts of the action.
Smash Cut	An abrupt cut, going from loud to quiet, or quiet to loud.
Invisible Cut	Where the cut is hidden, so the audience are unable to see it.
Shot reverse shot	Cutting between over the shoulder shots, to show a conversation taking place.
Shallow Focus	Where the subject closest to the camera is in focus.
Deep Focus	Where the subject furthest away from the camera is in focus.
Focus Pull	Pulling the focus from shallow to deep, or deep to shallow.
J-Cut	Where the audio begins before the scene in which it appears.
L-Cut	When the audio from the previous scene continues into the next scene.
CGI	Computer Generated Image.
Panning, tracking and tilting	Panning – camera stays put, but pans the scene in front. Tracking – camera moves with the subject moving in the shot, or follows the subject around. Tilting – camera stays still, but tilts up and down.

# Music - Year 9

## Texture – Knowledge Organiser



### A. Texture

**TEXTURE** describes how much is going on in the music at any one time. It is about the different ways instruments and voices are combined in a piece of music. In its simplest form, texture can be described as **how much sound** we hear.

**THIN TEXTURE:** (*sparse/solo*) – small amount of instruments, sounds or melodies.



**THICK TEXTURE:** (*dense/layered*) – lots of instruments, sounds or melodies.

### B. Monophonic Textures

**MONOPHONIC TEXTURE** – a single melody line either vocal or instrumental without any harmonies, although it may be played by more than one instrument or voice.



**SOLO** – a single melody line played or sung (called **A CAPPELLA**) by only one performer without any accompaniment or harmonies.

**UNISON** – instruments or voices playing or singing notes at the same pitch.

**OCTAVES** – instruments or voices playing or singing the same note but at different pitches.

### C. Homophonic Textures

There are two types of **HOMOPHONIC TEXTURE**:  
**MELODY AND ACCOMPANIMENT** – a melody line with harmonic accompaniment. Since the melody line is the most important, it is usually at the top of the texture.



**BROKEN CHORDS** are formed of playing the notes of a chord separately, one after another. Broken chord patterns provide a more gentle, flowing accompaniment to a melody than when the notes of a chord are played together.

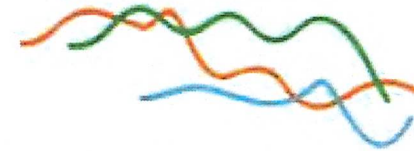


**BLOCK CHORDAL** – where voices or parts move together with the same (or very nearly the same) rhythm, with or without a definitive melody line (*e.g. hymn-singing*)



### D. Polyphonic Textures

**POLYPHONIC TEXTURE** (also called a **CONTRAPUNTAL TEXTURE**) – weaving together two or more equally important vocal or instrumental melodic lines which fit together harmonically and 'interweave' creating a rich, complex, 'busy' web of sound.



**IMITATION** – 'to copy': one vocal or instrumental part starts off playing a melody, which is immediately copied, or imitated by another voice or part, though not necessarily at the same pitch. Usually, it is only the first few notes of the melody which are imitated, and several voices or instrumental parts may take turns to imitate the opening of the original melody.

**CANON** – a particular type of imitation: like a round, where the imitating voice or instrumental part repeats the entire melody, not just the opening. Just as in a round, several voices or instrumental parts might be involved in the canon.



**ANTIPHONAL** – a special kind of imitation where a musical phrase is passed between different groups of voices or instruments. In some antiphonal music, the instruments or voices are placed in different parts of the building, or on different sides of a concert platform. This produces a kind of stereo or quadrasonic effect as a musical phrase is passed from one group to another.

**LAYERED TEXTURE** – music made up of different layers of sound which are all important to the rich texture of the music. These could be different rhythmic as well as melodic lines and is a feature of African music as well as Gamelan and modern music.



### E. Heterophonic Texture

**HETEROPHONIC TEXTURE** - the **simultaneous performance of different versions of the same melody**. E.g. one voice or instrument performs a melody while, at the same time, another performs a more elaborate, decorated version of it. Other voices or instruments may join in with yet more versions of the melody, perhaps elaborating it further still, or even simplifying it (picking out just a few important notes). **HETEROPHONIC** texture is found in the folk-music of certain European countries, in Turkish music, Japanese *gagaku* music, Indonesian *gamelan* music and in Arabian music.



# VARIATIONS

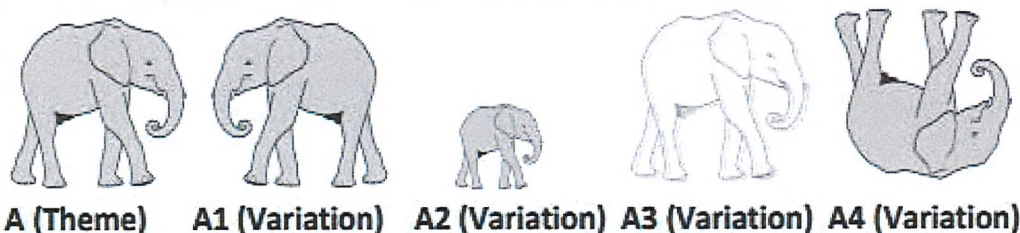
Exploring ways to develop musical ideas



## A. Theme and Variations Key Words

**MELODY** – A tune or succession of notes, varying in pitch, that have an organised and recognizable shape. Often called the main **TUNE** or **THEME** of a piece of music or song and easily remembered.

**VARIATION** – Where a **THEME** is altered or changed musically, while retaining some of the primary elements, notes and structure of the original. **VARIATION FORM:**



A (Theme) A1 (Variation) A2 (Variation) A3 (Variation) A4 (Variation)

## B. Augmentation and Diminution – Note Values and Duration

**AUGMENTATION** – the process of **DOUBLING** the note values (**DURATION**) of a theme as a means of variation.



**DIMINUTION** – the process of **HALVING** the note values (**DURATION**) of a theme as a means of variation.

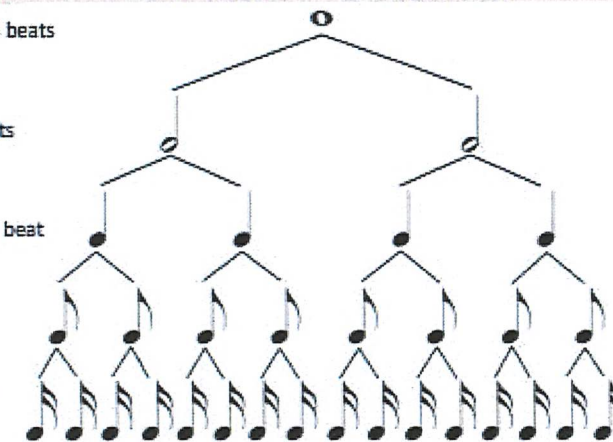
SEMIBREVE = 4 beats

MINIM = 2 beats

CROTCHET = 1 beat

QUAVER = 1/2 beat

SEMIQUAVER = 1/4 beat



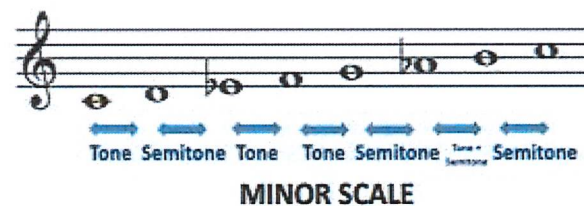
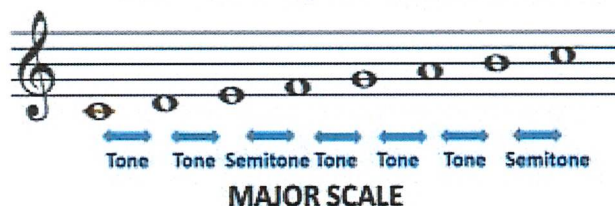
## C. Variation Techniques

<p><b>PITCH</b> – Change the highness or lowness of the theme – play the same notes, but at different pitches e.g. in different <b>OCTAVES</b>.</p>	<p><b>TEMPO</b> – Change the speed of the theme – play it faster or slower.</p>	<p><b>DYNAMICS</b> – Change the volume of the theme – play it louder or softer.</p> 	<p><b>TEXTURE</b> – Change the amount of sound we hear – play as a <b>SOLO</b>, add an <b>ACCOMPANIMENT</b> or <b>CHORDS</b>, add a <b>COUNTER-MELODY</b> (an 'extra' melody that is played or sung at the same time as the main melody, often higher in pitch and sometimes called a <b>DESCANT</b>).</p> 	<p><b>TIMBRE AND SONORITY</b> – Change the <b>SOUND</b> of the theme – play it on a different instrument.</p> 	<p><b>ARTICULATION</b> – Change the way the theme is played – smoothly (<b>LEGATO</b> – shown by a <b>SLUR</b>) or short, detached and spiky (<b>STACCATO</b> – shown by a dot).</p>	<p><b>PEDAL</b> – A long (often very long!) note in the bass line of the music over which other parts, including the theme or a variation of the theme can be played. Also called a <b>PEDAL NOTE</b> or <b>PEDAL POINT</b> and often the <b>TONIC</b> note (but can be the <b>DOMINANT</b> or other notes).</p>	<p><b>DRONE</b> – A long or series of repeated (often long) notes using the <b>TONIC</b> and <b>DOMINANT</b> notes together (a <b>FIFTH</b>).</p>	<p><b>MELODIC DECORATION</b> – Adding extra notes or embellishments to the theme such as trills, turns, mordents (<b>ORNAMENTS</b>) or <b>PASSING NOTES</b> (extra notes between the main melody notes).</p>	<p><b>OSTINATO</b> – Adding a repeated musical pattern (rhythmic or melodic) to the main theme as a form of variation.</p> 	<p><b>CANON/ROUND</b> – A song or piece of music in which different performers sing or perform the same <b>THEME</b> starting one after the other.</p>	<p><b>GROUND BASS</b> – A repeated musical pattern in the bass part upon which chords, and melodies can be performed and varied "over the top" of.</p> 
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## D. Tonality – Major and Minor



**TONALITY** refers to whether a **THEME** or **MELODY** is in a **MAJOR** or **MINOR** key. Changing the tonality from major to minor or minor to major is one way of providing a variation on the theme of melody. Major and minor scales follow a certain pattern of tones and semitones:



## E. Inversion and Retrograde

**INVERSION** – Changing the **INTERVALS** between the notes of a theme so that they are upside down from the original.

**RETROGRADE** – A variation technique created by arranging the main theme backwards.

**RETROGRADE INVERSION** – Arranging the "inverted" variation of the theme backwards!



# Physical Education

## Components of Fitness and Fitness Testing

	Component	Definition	Fitness Test
1	<b>Strength</b>	The ability to overcome a resistance. There are 4 types: Maximal strength, Static Strength, Dynamic Strength and Explosive Strength	One rep max test Hand grip dynamometer
2	<b>Coordination</b>	The ability to use 2 or more body parts together smoothly and efficiently.	Alternate hand wall toss test
3	<b>Reaction time</b>	The time taken to initiate a response to a stimulus.	Ruler drop test
4	<b>Flexibility</b>	The range of movement possible at a joint.	Sit & reach test
5	<b>Speed</b>	The maximum rate at which an individual is able to perform a movement or cover a distance in a period of time.	30m sprint test
6	<b>Agility</b>	The ability to change direction quickly whilst maintaining control.	Illinois agility test
7	<b>Muscular endurance</b>	The ability of a muscle group to undergo repeated contractions avoiding fatigue.	Sit-up bleep test
8	<b>Cardiovascular endurance</b>	The ability of the heart and lungs to supply oxygen to the working muscles.	Multi-stage fitness test
9	<b>Balance</b>	Maintaining the centre of mass over the base of support.	Stork balance test
10	<b>Power</b>	The product of strength and speed.	Vertical jump test



There are tests for each type of fitness. Fitness testing measures a performer's ability and is beneficial to both the performer and the coach in highlighting areas for improvement.

**Fitness testing will:**

- Highlight strengths and weaknesses
- Allow progress to be monitored carefully, through re-testing and comparison to norms
- Help in talent identification

**A**

**Validity, reliability & practicality**

**Validity** relates to whether the test actually measures what it sets out to measure.

**Reliability** is a question of whether the test is accurate. It is important to ensure that the procedure is correctly maintained for ALL individuals.

**This can be improved by:**

- Being undertaken by experienced testers
- Equipment being calibrated
- Ensuring performers have the same level of motivation to complete the test to the best of their ability.
- Testing repeatedly to avoid human error.

**B**

Every sport requires different components of fitness depending on the demands of that event. Remember components of fitness can be used separately or in combination with each other.

**Sporting examples:**

**Cardiovascular endurance** - Running a marathon or any endurance event

**Muscular endurance** - Rowing or road cycling events

**Speed** - 100m sprint or a sprint/run during a games sport (netball, football, rugby)

**Strength** - Using your body to protect the ball in football or in a scrum

**Power** - performing a high jump or long jump

**Agility** - Dribbling around a player in football/basketball

**Coordination** - running and returning a shot in tennis

**Balance** - performing on the beam in gymnastics or a defensive reach in netball

**Flexibility** - Performing a split jump in gymnastics

**Reaction time** - reacting to the gun at the start of a sprint race.

**C**

**Limitations of fitness testing**

Fitness testing can also have its limitations and some of the drawbacks are listed below:

- Tests are often too general.
- They do not replicate movements of the activity.
- They do not replicate competitive conditions required in sports.
- Unless the subjects are fully motivated reliability can be questionable.
- They must be carried out with the correct procedures to increase validity.

**D**

# Training Methods

## Types of Training:

- 1) **Interval** = Training that involves set periods of work followed by set periods of rest. It usually involves periods of intense exercise followed by periods of rest so that the performer can recover. The intensity of interval training can be altered to suit the individual by altering the time working and / or the time resting.
- 1) **Interval Training/High Intensity Interval Training(HIIT)** = Short bursts of extreme effort with even shorter rest periods. A 2 : 1 work ratio is often used e.g. 30 seconds work, 15 seconds rest. During training the performer will be working anaerobically so it will develop their ability to withstand the build up of lactic acid.
- 1) **Continuous** = Exercising for a sustained period of time without rest. It improves cardiovascular fitness. Sometimes referred to as 'steady state' training. The performer normally trains at a low to moderate intensity but for an extended period of time 20 minutes +. During continuous training the performer will be working aerobically so it will develop their ability to get oxygen into the body and create energy.
- 1) **Fartlek** = Also known as 'speed play', this type of training involves performers varying their speed / intensity. It can involve different speeds (walk, jog, sprint) or running at different terrains (uphill, down hill, on sand). Altering the intensity allows the performer to use both their aerobic and anaerobic energy systems.
- 1) **Circuit** = A series of exercises performed one after the other with a rest in between. Each circuit involves different activities called 'stations'. Stations are often set out to work all of a performer's body (arms, core, legs). In circuit training performers often work for a set amount of time and then have a set rest period e.g. work 30 seconds, rest 30 seconds. Progressing these sessions is easy as the performer can increase the work time or decrease the rest time.
- 1) **Weight** = Involves the lifting of weights / resistance to develop muscular strength or endurance. The beauty of weight training is that it can focus on specific muscles / muscles groups so that sessions can be designed to suit an individual's needs. This type of training involves REPS (completing one lift of a weight) and SETS ( the completion of a number of reps). To develop strength / power performers must lift heavy weights but for a low number of reps. To develop strength / power performers should lift above 70% of their one rep max for 4 – 8 reps. To develop muscular endurance performers must lift lighter weights but for a higher number of reps. To develop muscular endurance performers should lift below 70% of their one rep max for 12 – 15 reps.
- 1) **Plyometric** = Is a type of training that is used to increase power (strength x speed). It typically takes the form of bounding, hopping or jumping. The aim of plyometrics is to use your body weight and gravity to stress the muscles involved. This type of training involves the muscles working eccentrically (lengthening) when landing (often quadriceps) which helps them store elastic energy. This energy is released when the performer pushes up , working their muscles concentrically (shortening) e.g. jumping (hamstrings).
- 1) **Static Stretching** = Stretching to the limit and holding the stretch isometrically.

# Principles of training and injury prevention

**A** Principles of training - **Guidelines** that ensure **training is effective** and results in **positive adaptations**. These principles are used in **NEA coursework**.

**SPORT:**

**S = Specificity**

Training should be specific to the needs of an individual and demands of the sport that they take part in.

**PO = Progressive Overload**

Working harder than normal whilst gradually and sensibly increasing the intensity of training. Can be achieved using FITT.

**R = Reversibility**

If an individual stops or decreases their training level, then fitness and performance are likely to drop.

**T = Tedium**

Tedium refers to boredom. Training should be altered and varied to prevent an individual from getting bored and unmotivated.

**B**

<b>Frequency</b>	How often training takes place.	<i>Increase training from once a week to two</i>
<b>Intensity</b>	How hard the exercise is.	<i>Increase resistance from 10kg to 15kg or increase incline on the treadmill.</i>
<b>Time</b>	The length of the session.	<i>Increase training session from 45 minutes to 55 minutes.</i>
<b>Type</b>	The method of training used.	<i>Change to from interval training to Fartlek training.</i>

**C**

**The Three Training Seasons**

**Pre-season (Preparation)**

The aim is to improve general and aerobic fitness. It should also focus on specific fitness needs of the performer so they are ready for the competition / season.

**Competition season (Peak / Playing season)**

The aim is to maintain fitness levels. The performer should be at peak fitness and will aim to maintain this. They will focus on specific skills that are needed in their activity.

**Post-season (Transition)**

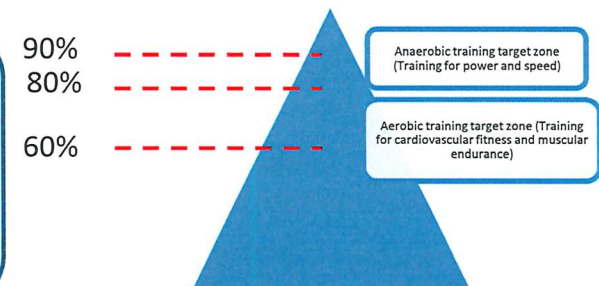
The aim is to rest and recover from the season / competition. Performers should continue to do some light aerobic training so that fitness levels do not drop too far.

**D**

**Calculating Training Zones/Thresholds of Training**

Karvonen formula used to calculate aerobic and anaerobic target training zones.

<b>Maximum Heart Rate (MHR) = 220 – age</b>	<b>Aerobic target zone: 60–80% of MHR</b> (60% = x 0.6 / 80% = x 0.8)	<b>Anaerobic target zone: 80–90% of MHR</b> (80% = x 0.8 / 90% = x 0.9)
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### Advantages and Disadvantages of Continuous Training

A

#### Advantages:

- 1) It can be done with little or no equipment e.g. simply go for a run.
- 2) It improves aerobic fitness
- 3) Running can be done virtually anywhere
- 4) It is simple to do – keep doing the same movement over and over.

#### Disadvantages:

- 1) It can be boring / tedious.
- 2) It can cause injury due to repetitive contractions.
- 3) It can be time consuming.
- 4) It does not always match the demands of the sport e.g. in basketball the players do not run at one speed continuously

### Advantages and Disadvantages of Circuit Training

B

#### Advantages:

- 1) Exercises chosen can be simple to complex.
- 2) The circuit can be manipulated to train different things e.g. repeated contraction of a muscle / muscle group to train muscular endurance
- 3) It can be varied to suit fitness level / age etc.
- 4) It is easy to monitor and alter – progressive overload can be applied by altering the work / rest ratio.

#### Disadvantages:

- 1) An appropriate amount of space is required.
- 2) It may require specialist equipment e.g. a medicine ball, benches, agility ladders.
- 3) It is difficult to gauge an appropriate work / rest ratio at the start.

### Advantages and Disadvantages of Interval and Fartlek training

C

#### Advantages:

- 1) It burns body fat and calories quickly.
- 2) It can be altered easily to suit the individual.
- 3) It can be completed relatively quickly.
- 4) It can improve the anaerobic and aerobic energy systems.

#### Disadvantages:

- 1) Extreme work can lead to injury.
- 2) High levels of motivation are needed to complete the work.
- 3) It can lead to dizziness and feelings of nausea.

### Advantages and Disadvantages of Weight Training

D

#### Advantages:

- 1) It can be easily adapted for different fitness aims.
- 2) It is relevant to all sports.
- 3) It is relatively straightforward to carry out.
- 4) Strength gains can occur.

#### Disadvantages:

- 1) Heavy weights can increase blood pressure.
- 2) Injury can occur if weights are too heavy or lifted incorrect technique is used.
- 3) Calculating one rep max requires high levels of motivation.

### Specific Training Techniques (High Altitude Training)

E

- High altitude training is carried out by elite performers.
- Involves carrying out training at a high altitude, 2000m or more above sea level.
- The idea behind this training method is that there is less oxygen in the air at high altitude. This makes training very difficult as the body finds it harder to carry oxygen to the working muscles.
- As a result, the body compensates by making more red blood cells to carry what oxygen there is in the air.
- Therefore by the end of training the body has more red blood cells. This means when the athlete returns to sea level they will have more red blood cells to carry more oxygen to the working muscles.

#### Benefits

- Endurance athletes can sustain exercise at a higher intensity for a longer period of time.

#### Issues

- It can be very difficult to complete.
- Some athletes suffer from altitude sickness – a feeling of nausea.
- The benefits are lost quite quickly once the athlete returns to sea level.

### Advantages and Disadvantages of Static Stretching

F

#### Advantages:

- 1) It increases flexibility.
- 2) It can be done by virtually everyone.
- 3) It can be done anywhere (does not need a lot of space).
- 4) It is relatively safe.

#### Disadvantages:

- 1) It can be time consuming to stretch the whole body.
- 2) It can get boring and repetitive.
- 3) Some muscles are easier to stretch than others.
- 4) Over-stretching can cause injury

**E****Warming Up**

A good warm-up should include:

- Pulse raiser – gradually raising heart rate in preparation for exercise.
- Stretching – stretch all relevant muscles involved in the activity.
- Skill Based Practices – Perform skills that allows the performer to familiarise themselves to the activity they are taking part in e.g. passing a football / netball.
- Mental Preparation – Starting to get focused, using techniques to control arousal e.g. mental imagery.

The benefits of a good warm-up are as follows:

1. Body temperature will increase ready for exercise.
2. Stretching will increase the range of movement possible.
3. There will be a gradual (not over demanding) increase in effort towards 'competition pace', i.e. you gradually work up to the intensity required for the game/event.
4. You will be focused and psychologically prepared.
5. Movement skills that will be used have been practised before starting the game/match/event.
6. There will be less chance of suffering injury.
7. There will be an increase in the amount of oxygen being carried to the working muscles – helping with the production of energy.

**G****Safety Principles When Training**

1. The training type and intensity used should match the training purpose.
2. A warm-up and cool down should be completed prior to and after training.
3. Over training should be avoided e.g. use of appropriate weights.
4. Appropriate clothing and footwear should be worn which protect / support and allow movement.
5. Taping / bracing should be used as necessary to protect and support areas of weakness.
6. Hydration should be maintained with fluid intake.
7. Stretches should not be overstretched or bounce.
8. Technique used should be correct e.g. weight lifting technique.
9. Appropriate rest should be given in between sessions to allow for recovery.
10. Spotters should be used when weight training if heavy weights are being attempted.

**F****Cool Down**

An effective cool down should include:

- An activity to maintain an elevated breathing and heart rate, e.g. walk, jog.
- A gradual reduction in intensity, e.g. jog to light-jog to walk.
- Stretching of all main muscles used in the activity.

The benefits of a good cool down are as follows:

- 1) It allows the body to start to recover after exercising.
- 2) It helps with the removal of lactic acid, carbon dioxide and waste products.
- 3) It can help to prevent the delayed onset of muscle soreness, sometimes referred to as DOMS.

# Product Design – Cars

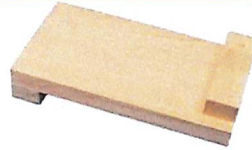
## Tools and Equipment



**Gents Saw:** To saw materials in a straight line.



**Coping Saw:** To saw thin pieces of materials in curved lines.



**Bench Hook:** To hold materials in place.



**Pillar Drill:** To drill holes into materials in different sizes.



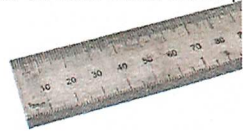
**Vice:** To hold materials in place.



**Try Square:** To draw lines perpendicular (at right angles) to your materials.



**Belt Sander:** To sand materials down.



**Steel Rule:** To measure accurately.

## Writing about the work of other artists/ designers:

### Paragraph 1 - Introduction

This should be brief. Look at their work and research key information about them to provide a contextual context.

- Nationality
- Dates - Are they contemporary or from a key historical movement
- Notable pieces of work and or style Avoid referring them by their first name, use a full name or surname.

*Avoid irrelevant or uninteresting information.*

### Paragraph 2 - Form

1. Select one particular pieces to explore in detail.
2. Describe what you see as if explaining it to someone over the telephone.
3. Consider the formal element of line, shape, tone/value, colour, space, etc.

### Paragraph 3 - Context

- What is the piece inspired by?
- How can you tell?
- How does the artist/designer link to your project?

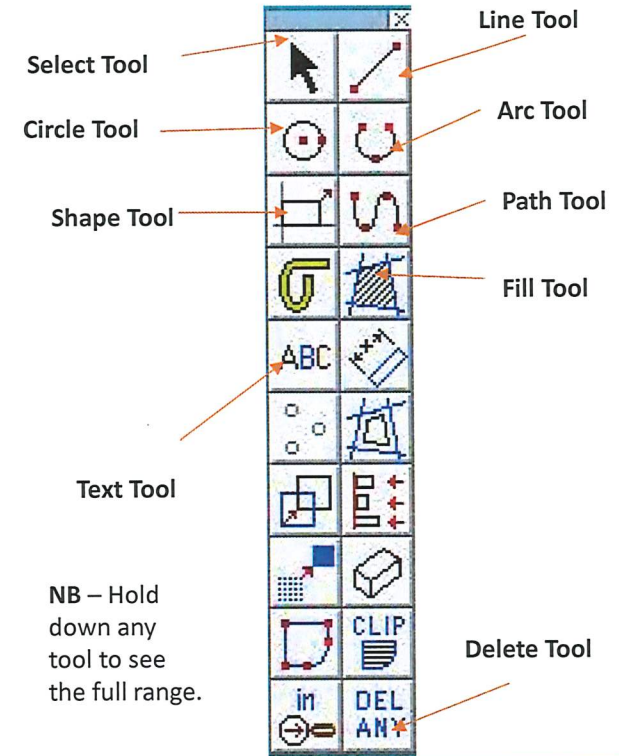
### Paragraph 4 - Opinion

Give your thoughts and feelings about their work. What is effective about the artwork and would you change anything? Explain why.

### Paragraph 5 - Inspiration

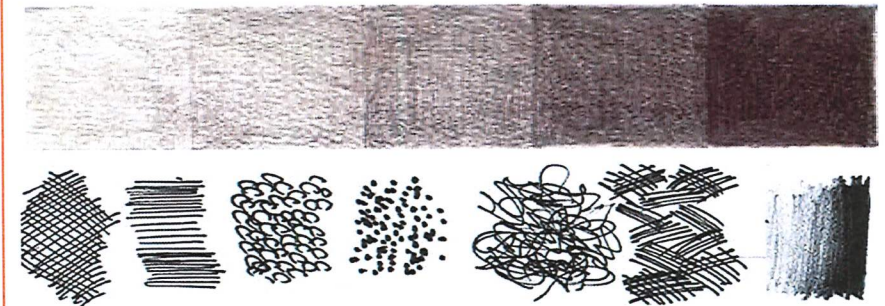
What will you take away as inspiration for your own work? How might you respond?

## 2D Design CAD Software



## Tone and Texture

Different marks/tones can be used to render a design idea to make it look 3D.



## Child Sexual Exploitation (CSE)

### Understanding CSE

- CSE refers to any situation where a child or young person is manipulated, coerced, or forced into sexual activity in exchange for something, such as attention, affection, gifts, or money.
- It can occur both online and offline.

### Signs of CSE

- Sudden changes in behavior or appearance.
- Unexplained absences from school or home.
- Secretive behavior regarding phone or online activities.
- Receiving gifts or money without a clear source or explanation.
- Involvement with older individuals who may be controlling.
- Emotional and physical stress, including self-harm or substance abuse.

### Staying Safe from CSE

- Understand boundaries and consent.
- Know how to recognize and report abusive behavior.
- Use privacy settings and be cautious online.
- Build strong relationships with trustworthy adults.
- Seek help from a teacher, counselor, or trusted adult if concerned about CSE.

## Alcohol

### Alcohol Units per Week

- Young people under the age of 18 should not be drinking alcohol.
- For adults, the recommended alcohol units per week are:
  - Men: Up to 14 units per week.
  - Women: Up to 14 units per week.
  - Spread alcohol consumption across the week.
  - Avoid binge drinking.

### Dangers of Alcohol

- Long-term alcohol misuse can lead to liver damage, increased risk of cancer, heart problems, and mental health issues.
- Short-term effects include impaired coordination, slow reaction times, memory loss, and altered judgement.

## Alcohol and Risk Taking

- Consuming alcohol can impair judgment and decision-making abilities.
- It can lead to engaging in risky behaviors, such as unprotected sex, violence, or accidents.
- Mixing alcohol with other drugs can be extremely dangerous and increase risks.

### MORE INFORMATION AND HELP

#### GENERAL

[www.childline.org.uk](http://www.childline.org.uk)  
[www.victimsupport.org.uk](http://www.victimsupport.org.uk)

#### BOYS AND MEN

[www.thecalmzone.net](http://www.thecalmzone.net)

#### Mental Health

#### Drugs

[www.talktofrank.com](http://www.talktofrank.com)

[www.youngminds.org.uk](http://www.youngminds.org.uk)  
[www.time-to-change.org.uk](http://www.time-to-change.org.uk)  
[www.headstogether.org.uk](http://www.headstogether.org.uk)

## Law and Dangers of Drugs

### Classification of Drugs

- Drugs are classified into three categories (Classes A, B, and C) under the Misuse of Drugs Act 1971.
- The classification is based on the potential harm they can cause and their medicinal properties.

#### Class A:

- Includes drugs like heroin, cocaine, ecstasy (MDMA), LSD, and crystal meth.
- Possession and supply of Class A drugs carry severe penalties.

#### Class B:

- Includes drugs like cannabis, amphetamines, and some synthetic cannabinoids.
- Possession and supply of Class B drugs also carry legal consequences, although typically less severe than Class A.

#### Class C:

- Includes drugs like anabolic steroids, some tranquilizers, and some synthetic cannabinoids.
- Possession and supply of Class C drugs carry the least severe penalties, but are still illegal.

## Harm of Drugs

- Drugs can have various short-term and long-term effects on individuals.
- These effects can include physical dependence, mental health issues, damage to organs, and increased risk of accidents or overdose.
- Drug misuse also affects relationships, education, and employment opportunities.

## LGBTQ+ Community

### Understanding LGBTQ+

- LGBTQ+ stands for lesbian, gay, bisexual, transgender, and queer/questioning.
- It is important to understand and respect the various sexual orientations and gender identities within this community.

### Promoting LGBTQ+ Inclusivity

- Promote an inclusive environment that values diversity and respects all individuals, regardless of their sexual orientation or gender identity.
- Challenge stereotypes and discriminatory language.
- Encourage open discussions and provide support to LGBTQ+ individuals within the school community.
- Raise awareness about LGBTQ+ issues and ensure access to inclusive resources and support networks.








# LGBTQ+






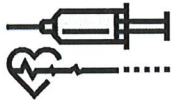
## Year 9 Term 3 Religion and Animal Rights and Morality

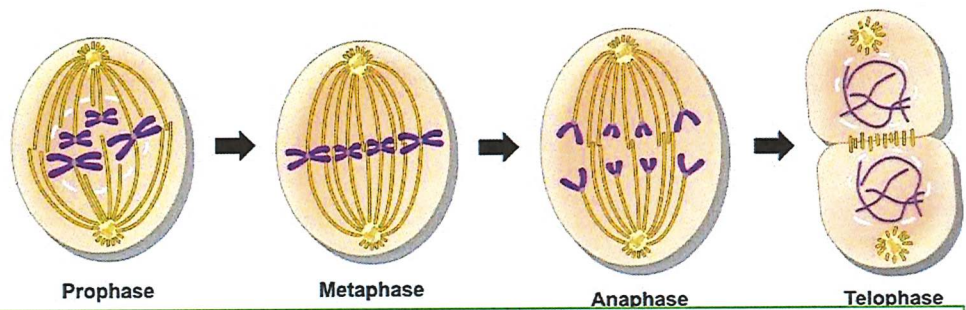
Key Words			
Morality	Being concerned with what is good and evil and what is right and wrong.	Animal Experiments	Animals are using in experiments to test different medicines, cosmetics (e.g. make-up and shampoo) and Weapons
Utilitarianism	To do what reduces the most suffering, and causes the most benefit	Vegetarian	A person who does not eat meat or fish
Deontology	To do your duty	Vegan	A person who does not eat or use any product produced by animals. No milk, meat, dairy, eggs, honey, leather etc
Virtue Ethics	Morality is about being a good person and having a good character, not about your actions	Factory Farming	When animals are used for meat or dairy products, but are farmed intensively by being kept indoors in very small spaces.
Consequentialism	Morality is about the consequences (results) of your actions not your intentions.	Free Range Farming	Farming that allows the animals to roam free and behave naturally..

Key Information	
<b>Animal testing and the law in the UK</b> 	When considering experimenting on animals laboratories should consider: <ul style="list-style-type: none"> <li>➤ Experiments produce more good than harm.</li> <li>➤ Experiments must:                             <ul style="list-style-type: none"> <li>➤ Use the minimum number of animals</li> <li>➤ Involve animals with the lowest degree of pain-sensitivity</li> <li>➤ Cause as little pain as possible</li> <li>➤ Be likely to produce good results.</li> </ul> </li> </ul>
 <b>Religious Beliefs about animal testing</b> 	<p><b>Christian Beliefs:</b> Genesis 1: 27 the Bible says: ‘So God created mankind in his own image, in the image of God he created them; male and female he created them.’ Animals are not created in God’s image so we can use them how we wish / use them to experiment on for medicine “God cares about even the tiniest sparrow” Luke 12:6 so we need to care for them and not treat them inhumanely</p> <p><b>Buddhist Beliefs:</b> The five precepts (guidelines for living): <b>Precept 1.</b> To not harming living things  <b>Compassion (karuna):</b> for all living creatures and not causing suffering  <b>Right Intention:</b> your reasons are more important than your actions  <b>Rebirth and Karma:</b> Our words, thoughts and deeds create energies which shape our future rebirths. We need to make sure these are positive eg not harming animals                      Buddhists believe that life is special and must be protected as this is the only way humans can achieve enlightenment. They say that rebirth is as rare to be reborn as a single blind turtle swimming a huge ocean would surface with his head in a ring.</p>
<b>Farming Animals</b> 	<p>Intensive <b>Factory Farming</b> can cause a lot of pollution and is sometimes not kind to animals as they are kept in confined spaces, do not live a ‘natural’ life, in fields, eating grass or seeing the daylight</p> <p><b>Free Range Farming</b> means that animals have space to roam, this could be in large barns and not outside, but is generally seen as a more humane way to farm</p>
<b>Vegetarianism and Veganism</b> 	<p>Many religions people are vegetarian or vegan because:</p> <ul style="list-style-type: none"> <li>➤ Animals were created by God for humans to care for</li> <li>➤ Adam and Eve were vegetarian; God told Noah to eat meat but not before the flood</li> <li>➤ They do not like the way animals are farmed or slaughtered</li> <li>➤ Many believe that if land used to graze meat were used for crops (vegetables) there would be more food to share and this would please God</li> <li>➤ On Fridays, many Christians eat fish as this was the day Jesus was crucified and they like to fast</li> <li>➤ Many Buddhists are vegetarian because they do not wish to harm animals</li> <li>➤ Causing harm to animals is bad karma, unskilful as it leads to them suffering</li> <li>➤ Some Buddhists believe in reincarnation and some are reincarnated as animals</li> </ul>

## Year 9 Term 3 Matters of Life

Key Words			
Conception	The moment the sperm fertilises the egg	Foetus	Fertilised ovum from eight weeks.
Fertility treatment	Medical procedure to assist an infertile couple to have a child.	Human genetic engineering	The modification of gene make-up to change the features of a human
Embryo	Fertilised ovum at about 12 – 14 days when implanted into the wall of the womb	In vitro fertilisation (IVF)	A procedure in which eggs are removed from a woman's ovaries and fertilised
Embryology	The study of human embryos.	Quality of life	A measure of fulfilment; how comfortable life is.
Euthanasia	Assisted suicide; helping someone who is terminally ill to die	Sanctity of life	Life is sacred because it is God-given.
Saviour siblings	A child conceived by IVF with pre-implantation genetic diagnosis to save the life of an incurably ill sibling through the use of the cord blood.	Surrogacy	Fertility treatment in which a woman's egg is fertilised artificially by another woman's partner or an embryo from another couple is created through IVF and then implanted into the 'host' woman. The woman carries the baby throughout pregnancy and gives it to the other couple for adoption after birth.

Key Information	
<p><b>Sanctity of Life</b></p> 	<p><b>Sanctity of life:</b> meaning that all life is sacred  <b>Christians</b> believe life is given by God so only God can take life away  <b>Buddhists</b> believe in reincarnation and human life is the one where this cycle can be stopped and nirvana can be reached                      In all cultures, taking life is the most serious crime.</p>
<p><b>Religious Beliefs about Life and Death</b></p> 	<p><b>Christian Beliefs:</b> Genesis 1: 27 the Bible says: 'So God created mankind in his own image, in the image of God he created them; male and female he created them.'                      Exodus chapter 20: 13 or The 10 Commandments: "Thou shalt not kill"                      Ecclesiastes 3: 1-3 says 'There is a time for everything. A time to be born and a time to die ...'                      Many Christians believe that life begins at conception (when the sperm meets the egg). This Embryo has the potential for life. They also believe that only God can give an take life.</p> <p><b>Buddhist Beliefs:</b> The five precepts (guidelines for living): <b>Precept 1.</b> To not harming living things  <b>Compassion (karuna):</b> helping someone in pain is better than doing the right thing and causing suffering  <b>Right Intention:</b> your reasons are more important than your actions  <b>Rebirth and Karma:</b> Our words, thoughts and deeds create energies which shape our future rebirths. We need to make sure these are positive                      Buddhists believe that life is special and must be protected as this is the only way humans can achieve enlightenment. They say that rebirth is as rare to be reborn as a single blind turtle swimming a huge ocean would surface with his head in a ring.</p>
<p><b>Science Starting Life</b></p> 	<p><b>IVF:</b> a scientific method of making a woman pregnant which does NOT involve sex. Conception occurs via sperm and egg being placed into a test tube.</p> <ol style="list-style-type: none"> <li>1. Egg cells are taken from the mother.</li> <li>2. The egg is mixed with a sperm sample to allow fertilisation.</li> <li>3. The fertilised eggs are incubated (= kept warm) to let them grow for a few days</li> <li>4. The embryo is implanted back into the mother. Hormone treatment will make her womb ready to be pregnant.</li> </ol> <p><b>Artificial Insemination by Donor (AID)</b>                      This involves a mother having her eggs fertilised by a donor, either because her husband is infertile or it's a same sex couple. DO NOT confuse this with AIDS!!!</p> <p><b>Artificial Insemination by Husband (AIH)</b>                      The mother's eggs are fertilised using her husband's sperm. This is necessary if e.g. the woman has blocked fallopian tubes or the husband has a low sperm count making natural conception very difficult.</p> <p><b>Surrogacy:</b> This is where another woman carries the pregnancy to full term for the couple.                      In the UK it is illegal to pay someone to do this</p>
<p><b>Science Ending Life</b></p> 	<p><b>Euthanasia</b> means 'gentle and easy death'. The term is used to describe the deliberate ending of a person's life for compassionate reasons because they are suffering, eg from a painful or incurable disease.                      Euthanasia is illegal in the UK.</p> <p><b>Active euthanasia</b> is where something is done to a person to make them die more quickly, this is illegal in the UK. <b>Passive euthanasia</b> is where any form of treatment that might extend a person's life is withdrawn (e.g. a life support machine is turned off) This is legally allowed in the UK, and so would not be called euthanasia.</p>

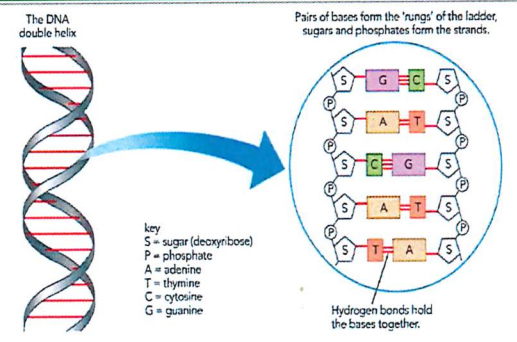
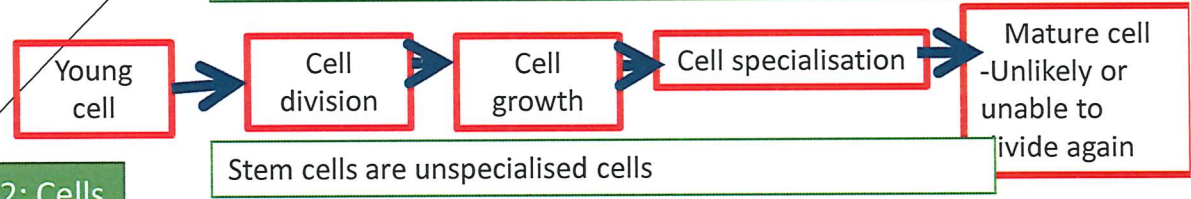


**Mitosis** - A type of cell division which produces 2 daughter cells genetically identical to the parent.

### Growth & Cell Specialisation

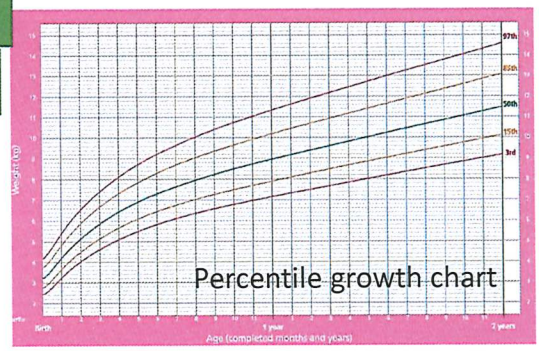
**Mitosis** is used for growth and repair

**Differentiation** - When a cell becomes specialised to carry out a particular job/function



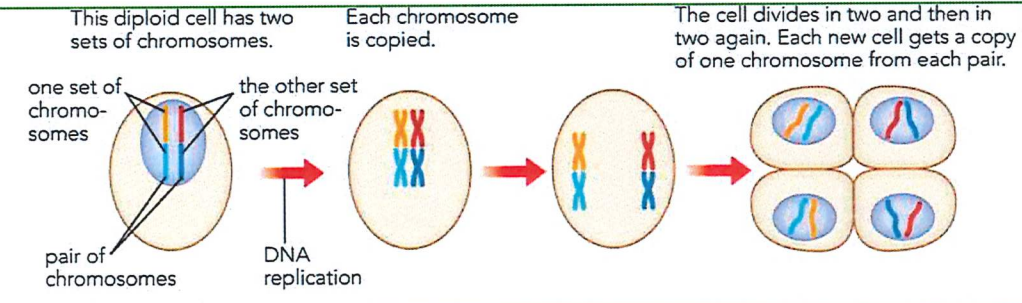
### DNA Structure

### Biology (B2: Cells and control) Cell Division



If a baby is born on the 50<sup>th</sup> percentile for height, then in every hundred babies, 50 will be taller and 50 will be shorter. If a baby is born on the 10<sup>th</sup> percentile for mass, then in every hundred babies, 90 will be heavier and 10 will be lighter.

**Meiosis**- Reduction division in a cell in which the chromosome number is halved. The 4 daughter cells are genetically unique.



**D** During meiosis, one diploid cell forms four haploid cells.

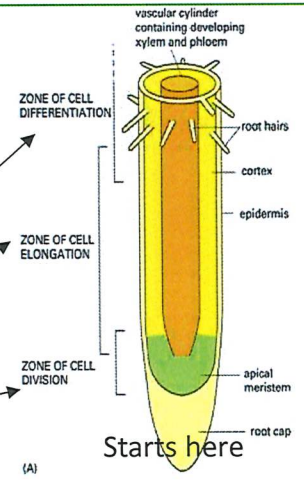
### Growth & Cell Specialisation in Plants

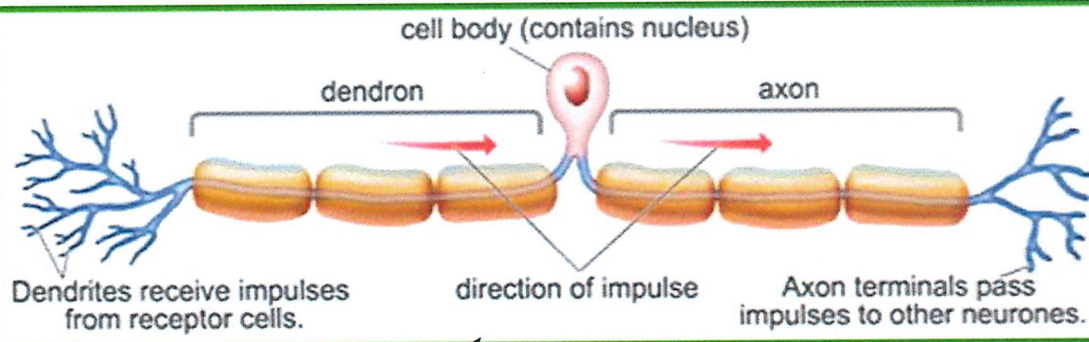
Meristems are regions of unspecialised cells in plants that are capable of cell division.

**Zone of differentiation** Cells differentiate and tissues of root take on specialized functions.

**Zone of elongation** Cells stop dividing and increase in length.

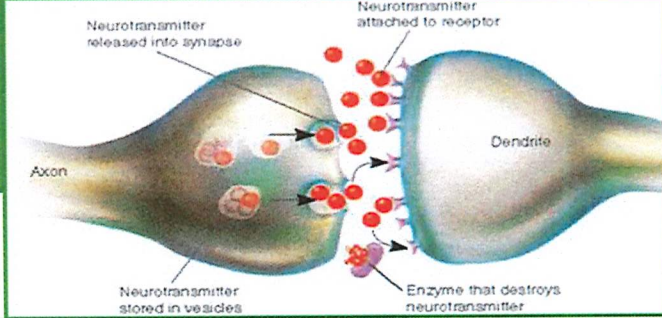
**Zone of cell division** Cells divide to create more cells.





### Synapse

Neurones are separated by a small space. A **chemical signal** is used to bridge this gap.



**Impulse** reaches an **axon terminal**  
 A **neurotransmitters** substance is released across the gap  
 This is detected by the next **neurone**  
 New **impulse** generated

**Sensory neurone** carries impulses from receptors to the CNS.

- Adaptations:**
- Very long – can send messages over a long distance
  - Myelin sheath – allowed the electrical impulse to flow more quickly and efficiently

### Types of Neurones

**Relay neurone**- Short neurones found in the spinal cord, linking sensory and motor neurones. No dendrites.

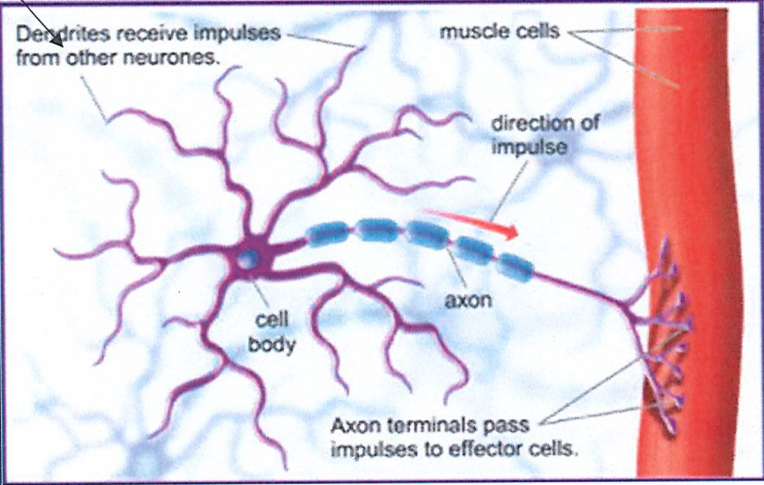
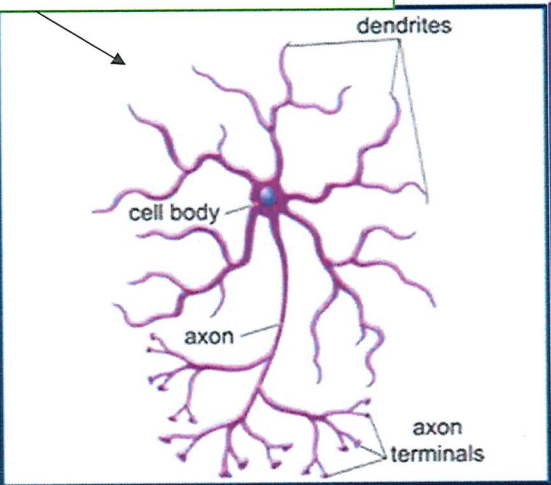
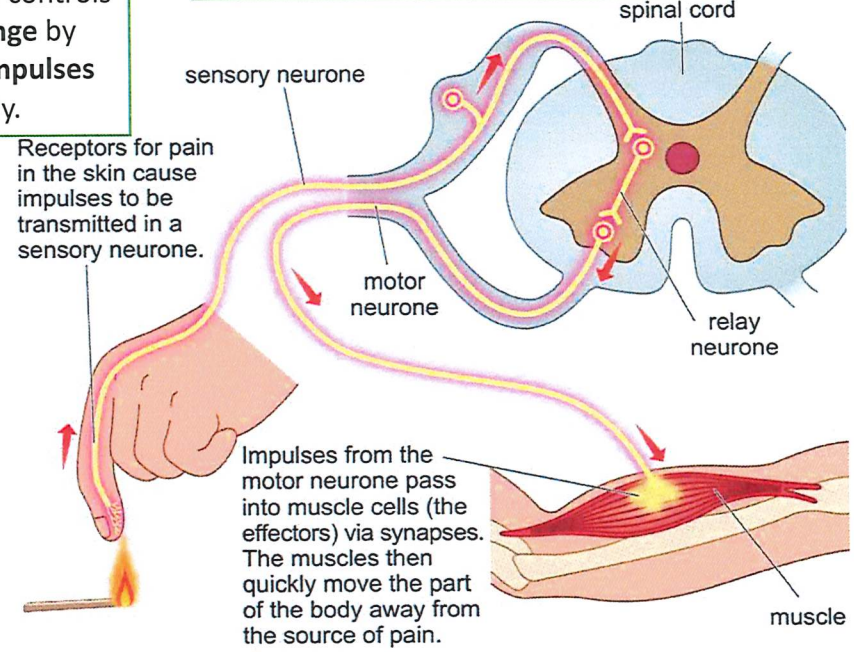
**Motor neurone** - Carry impulses to effectors

### Biology (B2: Cells and control)

### Nervous system

The nervous system controls our reaction to **change** by sending electrical **impulses** throughout our body.

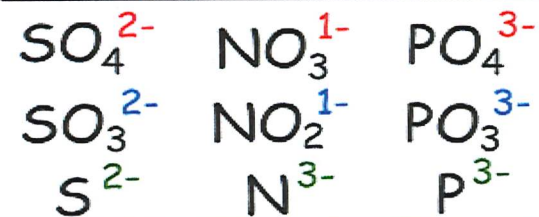
### Reflex arc



Atoms want a full outer shell to become stable.  
 Maximum configuration is 2,8,8  
 The group number tells us the number of electrons in the outer shell

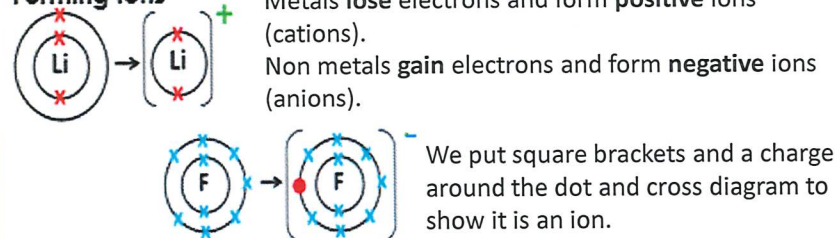
# BONDING

## Polyatomic Ions



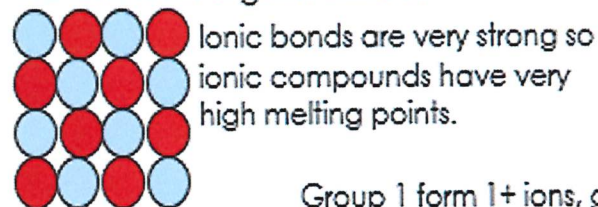
### Ionic Bonds

#### Forming Ions



#### Ionic Bonding

Strong **electrostatic** forces hold ions of opposing charges together. The ions form a giant lattice:



#### Ionic Formula

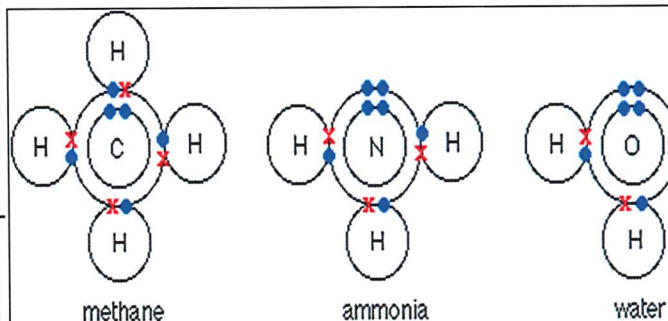
Group 1 form 1+ ions, group 2 form 2+ ions.  
 Group 7 form 1- ions, group 6 form 2- ions.

An ionic compound must have no overall charge.

MgO: Mg is 2+ and O is 2-, so one of each needed  
 Li<sub>2</sub>O: Li is 1+ and O is 2-, so two Li ions needed.

### Covalent Bonds

Two non-metals will form a covalent bond. The atoms share electrons to make themselves stable.

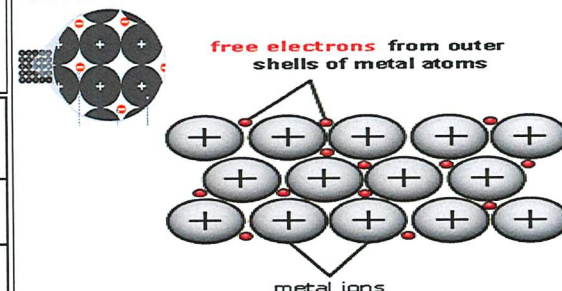


Group number	Examples	Outer electrons	Bonds formed	Valency
4	C and Si	4	4	4
5	N and P	5	3	3

Group of atoms that have a positive or negative charge due to the loss or gain of electrons.

### Metallic Bonds

Metallic bonds are metal ions surrounded by delocalised electrons.



Bonding Overview	Ionic	Simple Covalent	Giant covalent	Metallic
<b>Formation</b>	Positive and negative ions	Non-metal atoms sharing electrons to form a small molecule	Non-metal atoms sharing electrons to form a giant structure	Positive metal atoms held together by delocalised electrons
<b>Melting/boiling point</b>	High	Low (often gases at room temperature)	High	High
<b>Conduct electricity and heat</b>	Not as a solid Yes when molten	No	No (except graphite)	Yes
<b>Example</b>	Sodium chloride	Oxygen	Diamond	Copper

## Simple covalent molecules

### Examples:

- Water (H<sub>2</sub>O), hydrogen chloride (HCl), oxygen (O<sub>2</sub>)

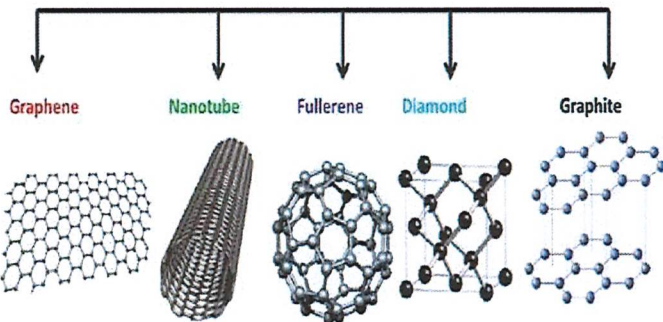


### Properties:

**Low melting and boiling points-** There are weak forces of attractions between the simple covalent molecules. This means that little energy is needed to overcome these weak forces, so simple molecules have low melting and boiling points. Most simple covalent molecules are gases or liquids.

**Non-conductive-** Simple molecules do not conduct electricity. There are no free electrons to carry a charge.

## Allotropes of Carbon



**Allotropes-** Different structural forms of the same element

### Fullerene:

Tubular or spherical molecules.

**Example-** Buckminsterfullerene (Bucky ball). This is made up of 60 carbon atoms.

# Properties of Substances

## Giant covalent structures

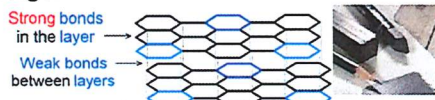
**High melting points-** There are many strong covalent bonds that need to be broken to melt the solids.

### Diamond:

**Hard-** Due to a rigid network of carbon atoms arranged in a tetrahedral.

**Non-conductive-** Each carbon atom forms four covalent bonds so there are no free electrons to carry the charge.

### Graphite:



**Soft-** The sheets of carbon atoms in graphite are held together by weak forces of attraction. These weak forces allow the layers to slide past each other.

**Conductive-** Graphite only has three covalent bonds for each carbon atom. It has delocalised electrons which are free to move and carry the charge.

## Allotropes

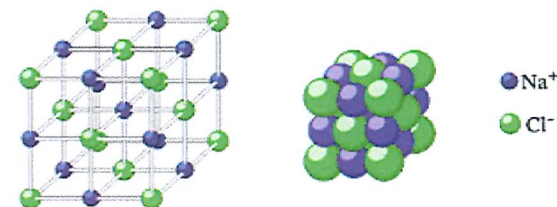
### Graphene:

Only one carbon atom thick. It is the lightest known material but the covalent bonds make it very strong. It is a good conductor as electrons are free to move across its surface.

## Ionic compounds

### Examples:

- Sodium chloride (NaCl), Magnesium oxide (MgO)



### Properties:

**High melting and boiling points-** Strong forces of attraction between oppositely charged ions mean that a lot of energy is required to separate the ions and cause the substance to melt.

Ions with more than one charge (e.g. Mg<sup>2+</sup> and O<sup>2-</sup>) will attract other ions more strongly than those with one charge. This means more energy is required to overcome the electrostatic forces of attraction, so they have higher melting and boiling points.

**Conductive and non-conductive-** Ionic compounds do not conduct electricity when solid, but do when molten or dissolved in water. This is because in a solid the ions are fixed in position and not able to move. Molten ionic compounds or those in solution have ions that are free to move, allowing a charge to flow.

## Metals

### Metals



### Non-metals



Shiny

Dull

High melting points

Low melting points

Good conductors of electricity

Poor conductors of electricity

Good conductors of heat

Poor conductors of heat

High density

Low density

Malleable

Brittle



# Spring Term - Year 9 Physics: Topic 3 Conservation of Energy

Lesson sequence	
1.	Storing and transferring energy
2.	Energy efficiency
3.	Insulation
4.	Stored energy
5.	Non-renewable energy resources
6.	Renewable energy resources
1. Storing and transferring energy	
Energy	A measure of the capacity to do work.
Joules	The units of energy, symbol = J.
Kilojoules	1000 J, symbol = kJ.

**Elastic potential energy** is stored in bent or stretched objects (Aka strain energy)



**Thermal energy** is stored in hot objects.



**Gravitational potential energy** is stored in objects based on how high they are.



**Kinetic energy** is stored in moving objects.

**Nuclear energy** is stored in the nucleus of atoms.

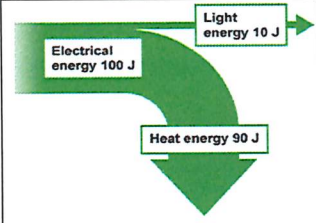


**Chemical energy** is stored chemicals such as fuels / food / batteries



<b>Energy transfers</b>	Work (forces) light, sound, electrical.
<b>Energy Stores</b>	Elastic potential, thermal, gravitational potential, kinetic, nuclear, chemical
<b>Law of conservation of energy</b>	
"Energy cannot be created or destroyed; just transferred from one store to another."	
Eg: Gravitational potential energy is transferred to the kinetic store as the child accelerates down the slide (Some energy is also dissipated as heat)	
Energy can be transferred by, work (forces), light, sound and electricity	

This Sankey diagram shows energy transfers for a light bulb. The thickness of the arrow relates to the amount of energy.



## 2. Efficiency

**Efficiency** is the proportion of an energy resource that does useful work during and energy transfer. Wasted energy is proportion that does not do useful work.

$$\text{Efficiency} = \frac{\text{(useful energy transferred to the device)}}{\text{(total energy supplied to the device)}}$$

- Efficiency is between 0 and 1.
- 0 = all energy wasted,
- 1 = no energy wasted.
- There are no units for efficiency

- **Friction and electrical resistance** both waste energy through unwanted heating.
- Lubrication is a way to reduce friction and the associated waste of energy.
- Over time energy spreads out from concentrated to stores to less concentrated stores and becomes less useful as it does so. This is called **dissipation**.

- ### 3. Heat transfers and insulation
- **Conduction** is heat transfer caused by vibrating particles bumping into each other (best in solids as particles are touching).
  - **Convection** is heat transfer caused when hot fluids (gas or liquid) rise because they are less dense.
  - **Radiation** is heat transfer by infrared radiation, which heats objects up when they absorb it (dull black objects absorb and emit radiation better than light shiny objects).
  - **Evaporation** causes heat transfer as the most energetic particles escape from a liquid
  - **Thermal conductivity** is a measure of how well a material conducts heat. Materials that do not conduct heat well are called **insulators**.
  - The **rate of heat transfer** through a material will depend on the temperature difference across it, its thermal conductivity and its thickness.

### 4. Calculating Stored Energy

**Gravitational potential energy (J)**

$$GPE = mgh$$

m = mass in kg,  
h = height change in m.  
g = gravitational field strength in N/kg, (10 N/kg on Earth)

**Kinetic energy (J)**

$$KE = 0.5 m v^2$$

m = mass in kg,  
v = velocity in m/s.

### 5. Non-renewable energy resources

A **Non-renewable resource** is one that will one day run out because it is being used faster than it is being made.

Examples of non-renewable resources are **Fossil fuels** (coal, oil, natural gas) and **Nuclear fuels** such as **uranium** that are used in **nuclear power stations** to make electricity

**Carbon neutral**  
When burning a fuel releases the same CO<sub>2</sub> it absorbed when it was growing, so there is no CO<sub>2</sub> increase.

Problems caused by burning fossil fuels include: **carbon dioxide** gas is released which causes **global warming**; **sulfur dioxide** is released which causes **acid rain**.

Pros and Cons of nuclear power:

- ☺ Energy dense, **no carbon dioxide released**
- ☹ Produces harmful, long lasting radioactive waste; expensive to decommission; although rare, accidents can spread radioactive material over a large area.

- ### 6. Renewable energy resources
- can be replenished as they are used, indefinitely.
- **Wind power:** large turbines spun by the wind.
  - ☺ No CO<sub>2</sub> ☹ Lots needed, no power when it is not windy
  - **Solar power:** solar cells turn sunlight to electricity.
  - ☺ No CO<sub>2</sub> ☹ No sun no power, need lots of space, not suitable for all countries
  - **Tidal power:** uses water movement from tides to spin turbines
  - **Tidal barrage:** a damn built across an estuary that fills up when tide goes in.
  - ☺ Huge amounts of energy, no CO<sub>2</sub> ☹ Destroys important mudflat habitats
  - **Hydroelectricity:** a damn is built across a river valley, water released from the damn spins turbines.
  - ☺ Lots of energy, no CO<sub>2</sub> ☹ Destroys habitat by flooding
  - **Biofuels:** fuels made from recently plant or animal matter, often waste.
  - ☺ carbon neutral (almost?) ☹ Needs a lot of land, increases food prices



Intereses e Influencias *Intereses and Influences*

Identity and Culture



**¿Qué sueles hacer en tus ratos libres?**

*What do you usually do in your free time?*

*Por lo general, hago natación con mi hermano porque es bueno para la salud por lo menos dos veces al mes. También a mí me gusta ir al centro comercial y ver las películas con mis amigos.*

**¿Eres teleadicto/a?**

**¿Por qué (no)?**

*Are you addicted to TV? Why (not)?*

*Diría que no soy teleadicto. Solo tenemos una televisión en casa, así que prefiero ver videos en mi móvil o usar TikTok ya que es más alucinante que la tele.*

**¿Prefieres ver películas en casa o en el cine? ¿Por qué?**

*Do you prefer to watch films at home or in the cinema? Why?*

*Prefiero ver películas en casa porque es menos caro y puedo hablar libremente. Además las palomitas cuestan demasiado en el cine entonces es más económico quedarse en casa.*

**¿Te gusta la música?**

**¿Por qué (no)?**

*Do you like music? Why (not)?*

*No soporto el rap, pero me encanta escuchar el pop o el jazz porque la letra es más preciosa. Cuando era peque@, me encantaba la música clásica ya que era relajante pero ahora no.*

**¿Tus padres te dan dinero? ¿Qué haces con la paga?**

*Do your parents give you money?*

*What do you do with the money?*

*Mis padres me dan cinco euros a la semana y los gasto en comida rápida o en videojuegos. A veces ahorro mi dinero para comprar billetes para los conciertos o partidos.*

**¿Qué planes tienes para este fin de semana?**

*What plans do you have for this weekend?*

*Este fin de semana, voy a ir al parque con mi hermana y vamos a jugar al tenis juntos. Después, vamos a ir a un restaurante como McDonalds o KFC porque nos encanta la comida rápida, aunque sea un poco malsana*

**¿Eres muy deportista?**

**¿Por qué (no)?**

*Are you very sporty? Why (not)?*

*Pienso que soy bastante deportista. Me encanta el rugby y lo juego tres veces a la semana con mis amigos después del colegio. ¡Es formidable! Cuando era pequeñ@, me gustaba hacer natación pero ahora prefiero el rugby.*

**Háblame de la última vez que participaste en un deporte**

*Tell me about the last time you participated in a sport*

*El mes pasado, jugué al fútbol con mi instituto y ganamos el partido. ¡Fue un día increíble! Después de haber ganado el partido, fuimos a la heladería y nuestro profe nos compró un helado - ¡qué bueno!*

**¿En qué consiste un buen modelo a seguir?**

*What makes a good role model ?*

*Un buen modelo a seguir es alguien que lucha para la igualdad entre los géneros como Malala Yousafzai. Creo que es una persona muy inspiradora.*

**¿Quién es tu modelo a seguir?**

*Who is your role model ?*

*Diría que mi modelo a seguir es mi madre, visto que es trabajadora y siempre me apoya.*

**Question you will ask:**

**Fancy phrases:**

Qualifiers	UN POCO <i>a bit</i> MUY/MUCHO <i>very/a lot</i> BASTANTE <i>quite</i> DEMASIADO <i>too/too much</i> ALGO <i>somewhat</i>
Adverbs	TODOS LOS DÍAS <i>every day</i> SIEMPRE <i>always</i> NUNCA <i>never</i> A VECES <i>sometimes</i> CONSTANTEMENTE <i>constantly</i>
Connectives	A PESAR DE TODO <i>nonetheless</i> NO OBSTANTE <i>however</i> POR ESO <i>because of that</i> GRACIAS A <i>thanks to</i> POR EJEMPLO <i>for example</i>
Comparisons Superlatives	MÁS/MENOS QUE <i>more/less than</i> MEJOR/PEOR QUE <i>better/worse than</i> EL MÁS/EL MENOS <i>the most/least</i> EL MEJOR/PEOR <i>the best/worst</i> LO QUE MÁS/MENOS ME GUSTA <i>what I like the most/least</i>
Sequencers	PRIMERO <i>firstly</i> LUEGO <i>then</i> ENTONCES <i>then</i> DESPUÉS <i>afterwards</i> FINALMENTE <i>finally</i>
Negatives	NUNCA <i>never</i> YA NO <i>no longer</i> NO... NI... NI <i>neither... nor</i> TAMPOCO <i>neither</i> JAMÁS <i>never, ever</i>
Opinions with reasons	Creo que... ya que <i>I believe that... as</i> Pienso que... puesto que <i>I think that... since</i> Opino que... aunque <i>I think that... although</i> Me parece que... porque <i>it seems to me that... because</i> Estoy convencido de que... dado que <i>I am convinced that... given that</i>

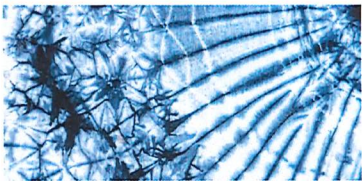
Time expressions	EL AÑO PASADO <i>last year</i> HACE DOS AÑOS <i>two years ago</i> CUANDO ERA PEQUEÑO/A <i>when I was little</i> EL AÑO QUE VIENE <i>next year</i> DENTRO DE DOS AÑOS <i>in two years' time</i>
Variety of pronouns	A ANA LE GUSTA <i>Ana likes</i> LO QUE MÁS/MENOS ME GUSTA <i>What I like the most/least</i> LO BUENO/MALO <i>the good/bad thing</i> LO MEJOR/LO PEOR <i>the best/worst</i> NOS LLEVAMOS BIEN/MAL <i>we get on well/badly</i>
Variety of persons	TIENE <i>she/he/it has</i> HACE <i>she/he/it does/makes</i> ESTÁ <i>is (location)</i> VISITAMOS <i>we visit/visited</i> LO PASAMOS BIEN <i>we have/had a good time</i>
Infinitive phrases	QUIERO <i>I want to</i> TENGO QUE <i>I have to</i> PUEDO <i>I can</i> SOLÍA <i>I used to</i> PREFIERO <i>I prefer</i>
Preterit	FUI <i>I went</i> FUI <i>I was</i> TUVE <i>I had</i> HICE <i>I did/made</i> VISITÉ <i>I visited</i>
Imperfect	IBA <i>I used to go</i> ERA <i>I used to be</i> TENÍA <i>I used to have</i> HACÍA <i>I used to do/make</i> VISITABA <i>I used to visit</i>

Immediate future	VOY A IR <i>I'm going to be</i> VOY A SER <i>I'm going to be</i> VOY A TENER <i>I'm going to be</i> VOY A HACER <i>I'm going to do</i> VOY A VISITAR <i>I'm going to visit</i>
Simple future	IRÉ <i>I will go</i> SERÉ <i>I will be</i> TENDRÉ <i>I will have</i> HARÉ <i>I will do/make</i> VISITARÉ <i>I will visit</i>
Conditional	IRÍA <i>I would go</i> SERÍA <i>I would be</i> TENDRÍA <i>I would have</i> HARÍA <i>I would do/make</i> VISITARÍA <i>I would visit</i>
Si clauses	Si ganara la lotería, iría a Nueva York <i>If I won the lottery, I would go to New York</i> Si pudiera, trabajaría de médico <i>If I could, I would work as a doctor</i> Si pudiera, estudiaría español en la universidad <i>If I could, I would study Spanish at university</i> Si fuera rico/a, compraría una mansión <i>If I were rich, I would buy a mansion</i> Si tuviera dinero, viviría en España <i>If I had money, I would live in Spain</i>
Subjunctive	OJALÁ PUDIERA <i>I wish I could</i> OJALÁ HUBIERA <i>I wish there were</i> CUANDO SEA MAYOR <i>when I am older</i> NO CREO QUE SEA <i>I don't think it is</i> PUEDE QUE TENGA <i>I/it may have</i>
Idiom	ES UN SOL <i>he/she is a star</i> HABLANDO CON LA MANO EN EL CORAZÓN <i>being honest</i> ESTOY EN MI SALSA <i>I am in my element</i> ME HACE ILUSIÓN <i>I am excited about</i> CUESTA UN OJO DE LA CARA <i>it's expensive</i>

# TEXTILES

**Tie dye:**

Tie dye is a form of resist dyeing. This is where parts of the fabric are tied with string or elastic bands, the fabric is then submerged into a dye bath. Where the fabric is tied the dye cannot reach and when removed this area remains the colour of the original fabric.



**Key words:**

**Natural fibers:**

Fibers made from natural materials such as; cotton, linen, wool and silk.

**Synthetic fibers:**

Fibers made from manmade materials such as; nylon, lycra, viscose and satin.

**Natural dyes:**

Where dye is made from natural products such as; fruits, vegetables and plants.

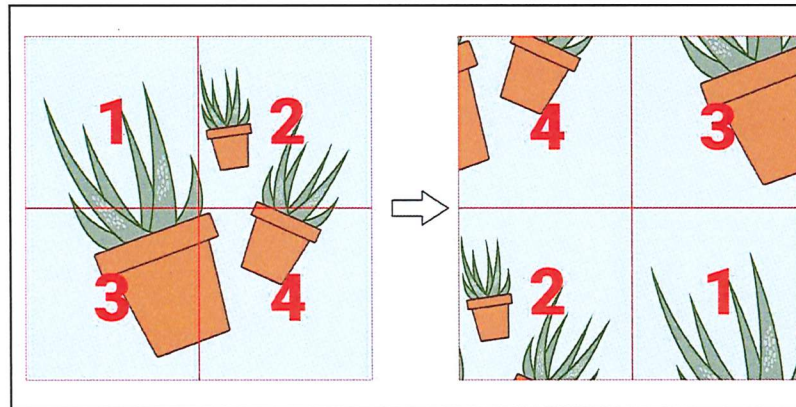
Natural dyes can only be used to dye natural fibers.

**Disperse dye:**

Where dye is made from chemicals. Disperse dyes can only be used to dye synthetic fibers.

**Reactive dyes:**

Where dye is made from synthetic chemicals. Reactive dyes can be used to dye natural or synthetic fibers.



**How to make a repeat pattern:**

1. Arrange your motifs on a square piece of paper.
2. Carefully/evenly cut your square in quarters.
3. Number them 1-4 (copy the image).
4. Swap 1&4 and 2&3 diagonally (keep them the right way up).
5. Carefully sellotape your quarters back into one square.

**Repeat patterns**

Where a motif is repeated horizontally and vertically across the fabric.

**Motif:** a decorative image or design. Mostly used in repeating patterns.

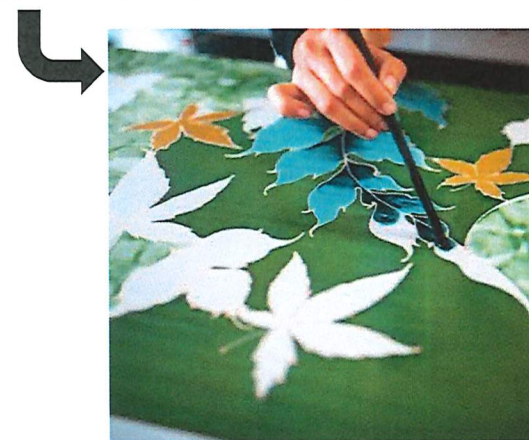


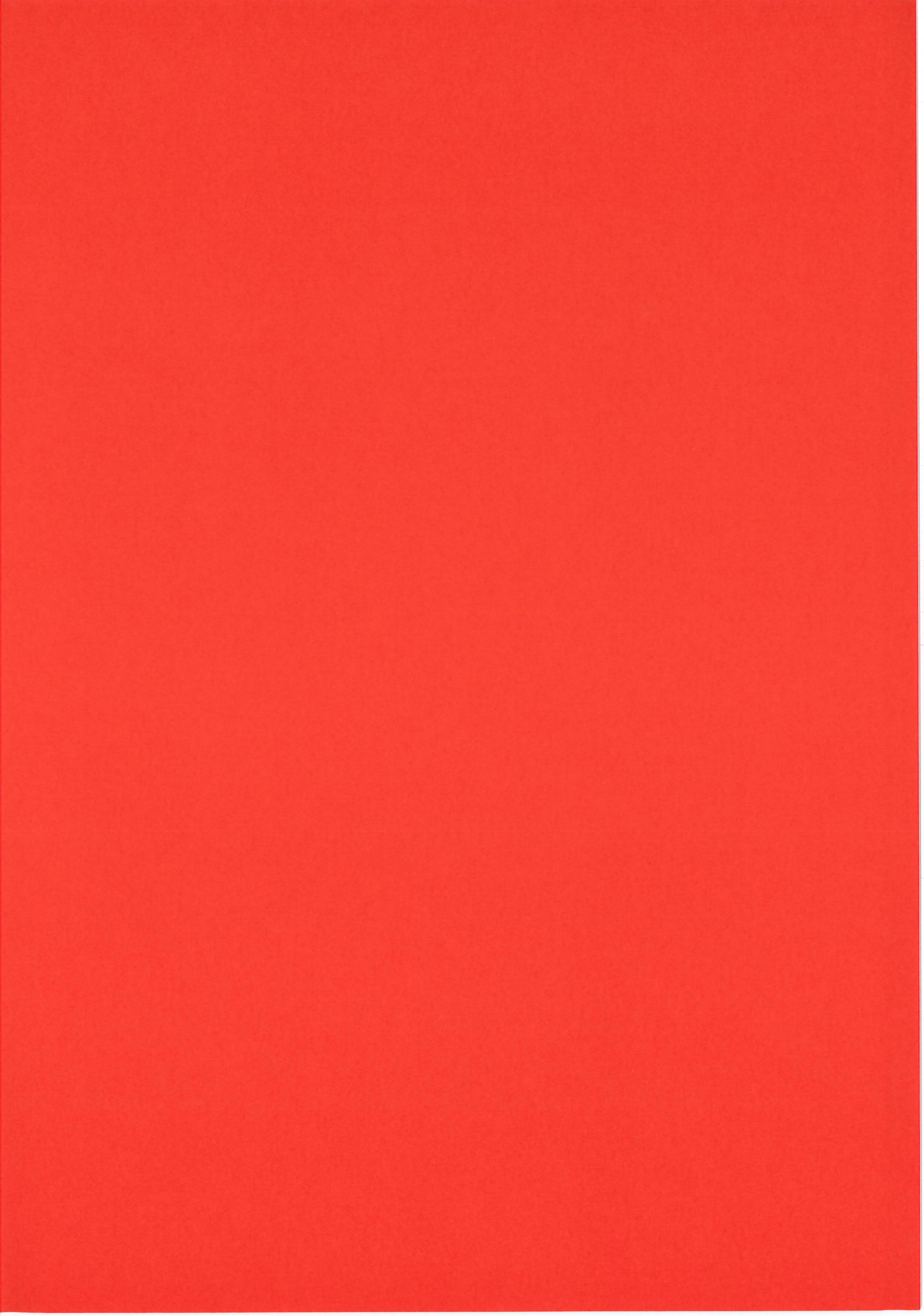
**Sketchbook Presentation Success Criteria I have:**

- ✓ Used appropriate colours in the background, title and writing.
- ✓ Used appropriate font for the title.
- ✓ Considered the layout of my page before sticking it down.
- ✓ Creatively laid out my work on the page - e.g. used flaps, layered work, used a window, mounted the work.

**Batik**

Batik is a form of wax resist. Hot wax is applied to fabric in a pattern using a **tjanting**, once dry the fabric is dyed or painted using dye. The fabric is then ironed to remove the hot wax. Where the wax has been the fabric is its original colour.





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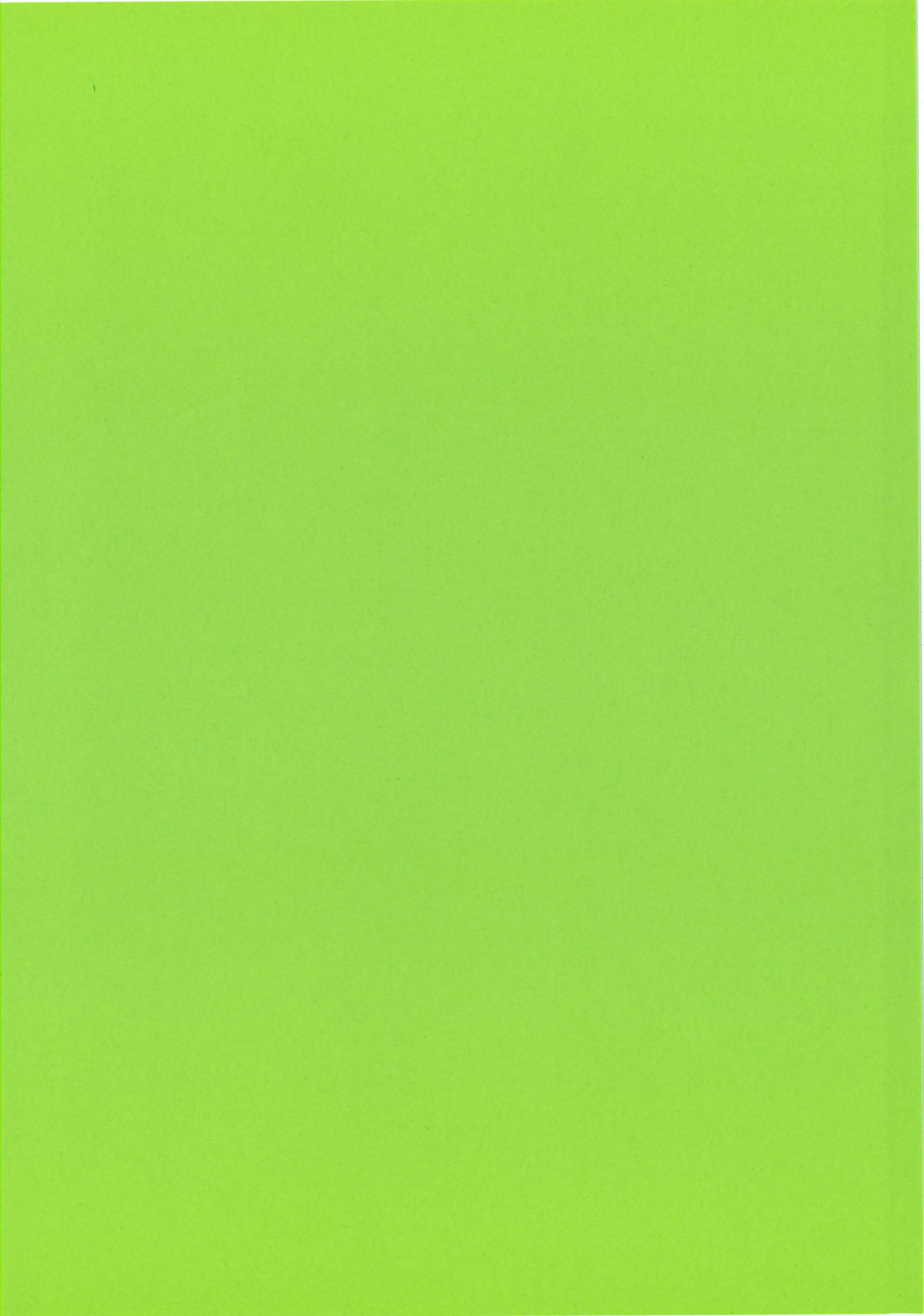
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## Notes

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