



BOURNEMOUTH SCHOOL

Year 9

# Knowledge Organiser 6

Summer Term: 2023-24

Name: \_\_\_\_\_

✓Hard Work

✓Discipline

✓Smart Appearance

✓Respect

## Bournemouth School

### Knowledge Organiser: Year 9 Summer Term 2

*'Knowledge is power' by Francis Bacon*

A knowledge organiser provides you with all the most important knowledge you need for each unit of study this half term. Your aim is to transfer all of this information into your long-term memory so you can use it in your lessons and further expand your understanding of this work.

How to use your knowledge organiser (KO)?

1. Ensure you have your KO with you at all times in school and when you need to do your homework at home.
2. Ensure you have your homework learning journal with you at all times in school and when you need to do your homework at home.
3. In lessons when you have covered information that appears on your KO your teacher will ask you to put a tick next to that section. This means that is now added to what you must learn for homework.
4. Initially follow your homework timetable to decide what to revise each evening.
5. There are 4 strategies that you can use to revise. They are progressively more challenging so always start with number 1.
  - a. Look Cover Write Check
    - i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.
    - ii. LOOK carefully at the subject and section of your KO you want to revise and try to remember as much as you can. Remember this should be a ticked section.
    - iii. Now COVER this information so you can't read it.
    - iv. WRITE out what you can remember word for word in your Homework Learning Journal.
    - v. CHECK what you have written by comparing it to your KO. Tick each correct word in green pen and correct any errors you have made.
    - vi. Repeat this process until you are confident you can remember everything you need.

**AIM:**

**You should be able to repeat the information by rote**

- b. Self or peer quizzing
  - i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.
  - ii. Write out a list of questions you could ask either yourself or a friend about this section of the KO. Write these in your homework learning journal
  - iii. If you are working on your own, cover the KO and write a full answer to each question.
  - iv. If you are working with a partner swap books and copy down their questions and have a go at answering them.
  - v. Now uncover the KO and with a green pen correct your work.

**AIM:**

**You should be able to repeat the information by rote but with a good understanding**

- c. Playing with words and sentences
  - i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.

- ii. You now want to check how well you have learnt the information in your KO.
- iii. Definitions – look at words that are used in this section. Can you write a definition in your own words?
- iv. Rephrasing – can you rewrite the sentences or explanations in your own words
- v. Summary – can you summarise the main points of this section of the KO?
- vi. Synonyms – can you write synonyms for key words and ideas
- vii. New Sentences – Can you write a sentence that includes the key vocabulary or definitions that you have learnt?

**AIM**

**You should be able to use the information in your KO in a flexible and confident way in your writing.**

d. Think it, Link it

- i. This is a technique to use towards the end of the half term when you are revising all of the KO.
- ii. Think of the links or connections between different sections of your KO.
- iii. Write these out in your own words in your homework learning journal
- iv. Think about the links between a particular section of you KO and what you have learn in your lessons. Can you expand on this section by linking it to your wider knowledge?
- v. Write this out in your homework learning Journal.

**AIM**

**You should be able to link your homework and your lessons to show a confident understand of the work covered.**

**Homework Learning Journal**

- 1. Always write the subject and the date when you start your homework
- 2. Always write the strategy that you are going to use for your homework
- 3. Use a blue or black pen to complete your homework or a pencil if you need to draw.
- 4. Always use a ruler to underline titles and dates
- 5. Use a green pen to complete corrections of your work

**Checking:**

Your tutor will check your Homework Learning Journal at least once a week. If they are concerned that you aren't doing your homework properly they will offer support and guidance. If you don't respond to this guidance you will be added to the afterschool 'Success club' where a member of staff will help you complete your homework.

**DO NOW tasks:**

At the start of every lesson you should expect a Do Now task. This is a low stakes retrieval quiz on what you have learnt so far. If you have completed your homework this should be easy. The aim is to get 100% in each of these. If you miss this target occasionally don't worry. If it happens regularly your teacher will ask your tutor to have a chat and offer you support.

## Artist page example

### Title

*Details about the artists work, how they have been inspired, what materials and processes do they use*

### Rik Reimert

"Asking, that's my thing. From music to photographs to art. Yes, of course we use computers and smartphones, but isn't it great to put on a record on your turntable on a Sunday morning and just enjoy the cracks in the music and the great artwork on the cover?"

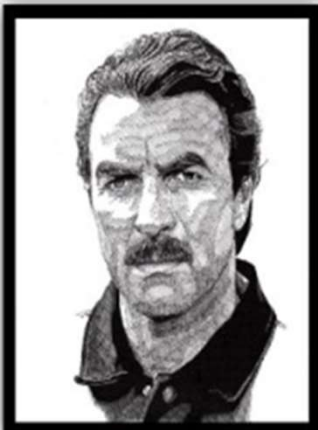
All artist like Reimert needs to create these detailed illustrations in some paper and some ink. The rest is a series of lines and techniques that Reimert builds from light to dark, with drawing. Reimert uses a variety of technical writing devices that provide consistent ink flow. The artist begins with pencil and then fills in the lines with his pen that vary in thickness from 0.2 to 0.5mm.

What they will most likely use is a pen and ink.

I've been drawing with pen and ink for over 15 years, started off with portraits, animals, cars and other vehicles and now doing mostly landscapes. I'm self taught and when I'm not drawing myself I'm searching the internet for inspirational artists, getting new ideas and finding out how other artists work, as I can learn from that.

What I think is the best?

I was drawn to the work of Reimert due to his heavy use of cross-hatching and how he has chosen to work in a single medium. It shows the wide range of marks and lines that can be built upon to create almost hyper-realistic outcomes (landscapes). In his portraits in particular, it doesn't look like he has used a ruler for each individual line. A technique I would have favoured upon before his became an inspiration. I would like to try recreate a similar style with one of my own portrait photographs adding that sense of depth and atmospheric finish.



In the image below I especially appreciate the contrast between the obviously straight lines and the use of fine, wavy lines to create the hair. The shaded out areas of black add more layers to the image therefore creating that high contrast between light and dark, and this adds to the mystery of the character. Depending on the image I choose I may try this work making technique.



*Clear images of artists work, not pixelated*



*Details about why you have chosen the artist, what do you like about their work and how is it going to inspire you in your work.*

Term/ Keyword	Definition/ explanation	Tick
Tracing	When tracing use light pressure to create fine lines that are easily hid by drawing or painting on completion of work.	
Graphite transfer	Using a graphite pencil to shade the back of the image you want to transfer, place on top of a clean piece of paper then draw on top of the image to create the transfer.	
Light box	A lightbox is a artist aid to help one tracing more easily.	
Gridding	The grid method is a technique used in art that involves dividing an image into a series of smaller, more manageable sections using a grid.	
Mixed media	Mixed media describes artwork in which more than one medium or material has been employed.	
Graphite powder	Powdered graphite is the same graphite that pencil leads are made of, only ground into fine powder. You can "paint" it on paper with brushes to make watercolour-like "wash" effects, smooth textures, and cloudy backgrounds.	
Indian ink	Indian ink is a simple black or coloured ink once widely used for writing and printing and now more commonly used for drawing and outlining	
Surface textures	Textured surfaces can be created using a multiple of different materials, some may include thick layering of paint, also preparing the surface with poly filler, sand, PVA and tissue paper, newspaper and much more.	
Mount board	Mount board is a thin white, black or coloured card that artwork is placed inside for decorative purposes. Using an art frame mount presents artwork professionally, creating a clean and crisp finish.	
Water colour paper	Watercolour paper is a versatile surface which has a degree of absorbency that allows transparent colour to appear its most luminous. Watercolour paper is not only for use with watercolour paints – it can also be used for acrylics, gouache, pastels, pencils, graphite, charcoal, and it can also be primed for oil.	
Pastiche	Pastiche is an artistic work in a style that imitates that of another work, artist, or period.	



## B4b Respiration

Types of respiration		✓
Term	Definition	
Respiration	A chemical process in all cells that releases energy from glucose	
Aerobic respiration	Respiration that uses oxygen to release large amounts of energy from glucose, occurs in the mitochondria.	
Anaerobic respiration	Respiration that does not use oxygen and releases less energy from glucose, occurs in the cytoplasm in muscle cells	
Oxygen debt	The amount of extra oxygen the body needs after exercise to react with accumulated lactic acid and remove it from the cells.	

Respiration equations		✓
Aerobic respiration	Glucose + oxygen → carbon dioxide + water $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$	
Anaerobic respiration (muscles – animals)	Glucose → lactic acid	
Anaerobic respiration (plants + yeast)	Glucose → carbon dioxide + ethanol	

Effect of exercise		✓
Effect	Reason	
Increased heart rate	To deliver more oxygen and glucose to the cells and to remove waste carbon dioxide	
Increased breathing rate and breath volume	To obtain more oxygen from the air and to remove more waste carbon dioxide	

An increased heart rate provides the body with more **OGRE**

more Oxygen  
more Glucose  
more Respiration  
more Energy released



Metabolism is the sum of all the reactions in a cell or body, including:		✓
1	Conversion of glucose to starch, glycogen and cellulose	
2	Formation of lipids from fatty acids and glycerol.	
3	The use of glucose and nitrate ions to form amino acids which are turned into proteins	
4	Respiration	
5	Breakdown of excess proteins to form urea for excretion.	

Definitions		
Job Description	Document outlining the roles and responsibilities of a job.	
Person Specification	Document outlining the skill and attributes required for a job.	
Job Analysis	Collection and interpretation of information about a job	
Zero hours contract	Allows an employer to hire staff without any guaranteed hours of work.	
Short list	Selecting applicants for interview against the job description and person specification	
Part time contract	Works for a proportion of the working below any hours less than 37hr per week.	
Full time contract	Employment where you are required to work between 35-40hrs a week.	

Definitions		
Motivation	The will to complete a task	
Fringe benefits	Extra benefits that an employee may receive beyond their pay, for example a company car.	
Salary	An annual payment to employees usually paid monthly.	
Wage	Payment to employees calculated by how many hours they work.	
commission	Payment made to an employee based on a sale or goal	
Profit sharing	Where a percentage of the companies profit is divided between employees	
Authoritarian	A management style where managers make decisions alone, without consulting staff	
Democratic	A management style where managers allow the workforce some influence over decision making	
Paternalistic	A management style where managers make decisions but only after consultation with staff	
Laissez-faire	Managers allow workers to perform tasks as they see appropriate.	

Definitions		
Span of control	The number of employees managed directly by another employee	
Chain of command	The line of authority within a business along which communication passes	
Delaying	The removal of one or more levels of hierarchy from a business's organisational structure	
Delegation	The passing down of authority to more junior employees	
Flat organisational structure	Where an organisation has wide spans of control and few levels of hierarchy	
Tall organisation structure	Where an organisation has narrow spans of control and a large number of levels of hierarchy	
Organisational Structure	Is the way a business arranges itself to carry out its activities	
Line manager	Is an employees immediate superior	

Types of training undertaken by businesses		
Type	Definition	
On the job	Training given in the workplace where they are shown and can practice the skill. Such as work. shadowing	
Off the job	Training provided away from the place of work.	
Induction	Introduction of a new employee to the workplace and will include health and safety and company procedures.	



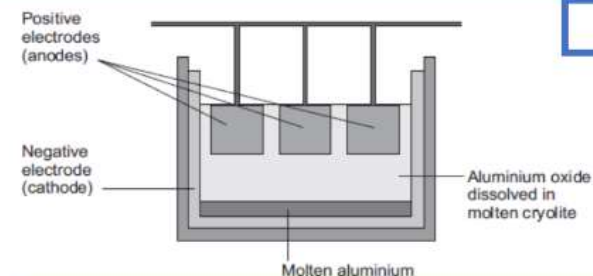
## Chapter 4b – Chemical Changes

Keyword	Learn	Tick
Displacement Reaction	A more reactive element displaces a less reactive element from a compound containing the less reactive element.	
Native metal	Unreactive metal found in the Earth's crust as the uncombined element.	
Ore	Rock containing enough of a metal to make it economically worthwhile to extract.	
Oxidation	Gain of oxygen / loss of electrons e.g. $\text{Mg} \rightarrow \text{Mg}^{2+} + 2\text{e}^-$	
Reduction	Loss of oxygen / gain of electrons e.g. $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$	
Electrolysis	The process of splitting up ionic compounds using electricity.	

### Extraction of Aluminium

Carbon electrode needs replacing as it reacts with the oxygen produced to form  $\text{CO}_2$ .

Aluminium oxide is mixed with molten cryolite to reduce the melting point.



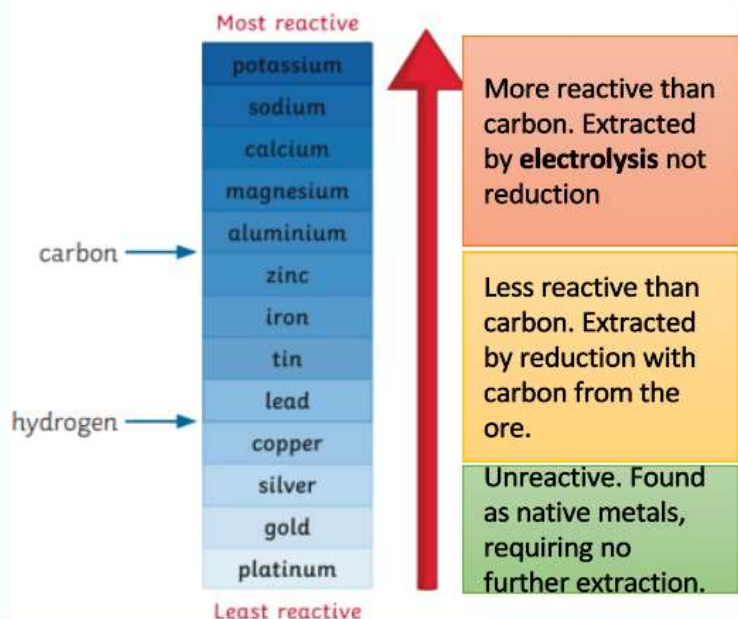
### General Reactions of Metals

Metal + oxygen  $\rightarrow$  metal oxide

Metal + water  $\rightarrow$  metal hydroxide + hydrogen

Metal + acid  $\rightarrow$  salt + hydrogen

### The Reactivity Series



### Electrolysis

Ionic substances only conduct electricity when molten or in aqueous solution, as the ions are free to move and carry charge.

Positively charged ions are attracted to the negative electrode.

Negatively charged ions are attracted to the positive electrode.

This is because **opposite** charges **attract**.

When **positive** ions reach the negative electrode, they **gain** electrons: **reduction**.

When **negative** ions reach the positive electrode, they **lose** electrons: **oxidation**.

**Molten ionic compounds** e.g.  $\text{PbBr}_2$     IONS PRESENT =  $\text{Pb}^{2+}$   $\text{Br}^-$

REDUCTION at negative electrode - metal is discharged e.g.  $\text{Pb}^{2+} + 2\text{e}^- \rightarrow \text{Pb}$

OXIDATION at positive electrode - halogen gas is discharged e.g.  $2\text{Br}^- \rightarrow \text{Br}_2 + 2\text{e}^-$

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**Aqueous ionic compounds** e.g.  $\text{NaCl}$     IONS PRESENT =  $\text{Na}^+$   $\text{Cl}^-$   $\text{H}^+$   $\text{OH}^-$

REDUCTION at negative electrode - metal or hydrogen gas is discharged - whichever is least reactive element e.g.  $2\text{H}^+ + 2\text{e}^- \rightarrow \text{H}_2$

OXIDATION at positive electrode - halogen gas is discharged or oxygen gas if no halogen present e.g.  $2\text{Cl}^- \rightarrow \text{Cl}_2 + 2\text{e}^-$

## 2.1 Algorithms

Keyword	Definition	✓
<b>Search algorithm</b>	A set of instructions for finding a specific item of data within a data set.	
<b>Linear search</b>	An algorithm for finding an element in a list by checking each element in the list sequentially	
<b>Binary Search</b>	A search algorithm that uses a divide-and-conquer strategy.	
<b>Sorting algorithm</b>	A set of instructions to arrange a set of data into a particular order.	
<b>Bubble sort</b>	A sort algorithm that works by comparing and swapping variables.	
<b>Insertion sort</b>	A sort algorithm that splits the list to be sorted into a sorted and an unsorted part.	
<b>Merge sort</b>	A sort algorithm that uses a divide-and-conquer approach to split data up into individual lists and then merge them back together in order.	

## 2.2 Programming Fundamentals

Keyword	Definition / Example	✓																								
Variable	A label/identifier which is used to identify a memory location used to store a value that <i>can be changed</i> while the program is running.																									
Constant	A label/identifier which is used to identify a memory location used to store a value that <i>cannot be changed</i> while the program is running.																									
Array	A data structure that stores a collection of values with the same data type under one name/identifier. Each value is called an element and is accessed by an index position																									
Concatenation	The action of joining strings together. print("Hello " + name + " !")																									
Data Types	Determines what type of value the variable will hold. <table><tr><td>Integer – Whole number</td><td>age = 12</td></tr><tr><td>Real / float – Number that can have a fractional part</td><td>height = 1.52</td></tr><tr><td>Character – A single letter, symbol or number</td><td>letter = 'a'</td></tr><tr><td>String – Multiple characters</td><td>name = "Bart"</td></tr><tr><td>Boolean – Has two values: true or false.</td><td>a = True b = False</td></tr></table>	Integer – Whole number	age = 12	Real / float – Number that can have a fractional part	height = 1.52	Character – A single letter, symbol or number	letter = 'a'	String – Multiple characters	name = "Bart"	Boolean – Has two values: true or false.	a = True b = False															
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Arithmetic operators	Mathematical functions that take two operands and performs a calculation on them. <table><tr><th></th><th>Python</th><th>OCR Ref.</th></tr><tr><td>Add</td><td>7 + 2 = 9</td><td>7 + 2</td></tr><tr><td>Subtract</td><td>7 - 2 = 5</td><td>7 - 2</td></tr><tr><td>Multiply</td><td>7 * 2 = 14</td><td>7 * 2</td></tr><tr><td>Divide</td><td>4 / 2 = 2</td><td>4 / 2</td></tr><tr><td>Power</td><td>2 ** 3 = 8</td><td>2 ^ 3</td></tr><tr><td>Integer/floor division</td><td>7 // 2 = 3</td><td>7 DIV 2</td></tr><tr><td>Modulus</td><td>7 % 2 = 1</td><td>7 MOD 2</td></tr></table>		Python	OCR Ref.	Add	7 + 2 = 9	7 + 2	Subtract	7 - 2 = 5	7 - 2	Multiply	7 * 2 = 14	7 * 2	Divide	4 / 2 = 2	4 / 2	Power	2 ** 3 = 8	2 ^ 3	Integer/floor division	7 // 2 = 3	7 DIV 2	Modulus	7 % 2 = 1	7 MOD 2	
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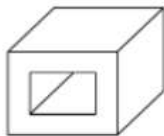

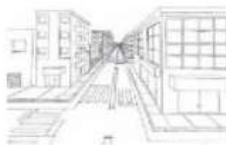
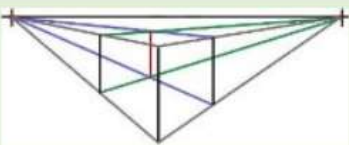


Tick this box once  
this has been  
covered in lesson

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## GCSE Design Technology

CORE 1.17 *part 1* Communication techniques

Number	Name of communication	Example	General information/explanation	Advantages	Disadvantages
1	Freehand sketching		Often used by designers as initial ideas. It is all about getting your ideas down on paper quickly. They can be developed in more detail later.	Very quick to do due to the nature of the style.	Sheets may look messy with little organisation to them.
2	Digital photography/media		The use of digital media and photography to create and develop designs. Tracing paper can also be used to trace over ideas.	Quick to do and tracing paper can be used – so even quicker to produce ideas.	Can be difficult to produce a quick design.
3	Cut and paste techniques		When photos/images are used to create and inspire their own ideas i.e. through a mood board. They can be used as a starting point for development too.	Quick to do and lots of different forms/patterns can be gathered.	-----
4	Oblique		This is a style of 3D drawing which draws at 45°.	*Very simple *Quick *No difficult pieces of equipment are needed	It is very basic and designs can often look a little distorted.
5	Isometric		This is a style of 3D drawing which draws at 30°.	All of the main side can be seen and it is more realistic than oblique.	Not as realistic as using perspective drawing.
6	One point perspective		There is 1 vanishing point anywhere around the object which all points are drawn to.	A realistic way to draw and is quicker/easier to produce than two point perspective.	-----
7	Two point perspective		There are 2 vanishing points either side of the object. Architects use this style when developing their ideas in 3D.	A speedy way to give a realistic interpretation.	More difficult than one point perspective.

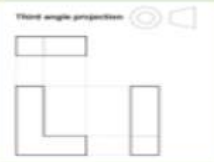


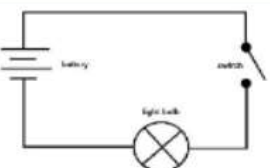
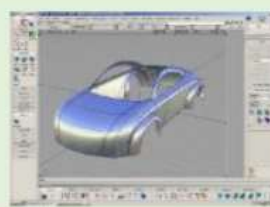



Tick this box once  
this has been  
covered in lesson



# GCSE Design Technology

## CORE 1.17 part 2 Communication techniques

Number	Name of communication	Example	General information/explanation	Advantages	Disadvantages
8	Orthographic projection		The 3 main sides; plan, front and side are drawn in line with each other. Dimensions are drawn.	Lots of detail is included in this style and all sides can be seen.	Basic drawing equipment is needed i.e. boards and blades.
9	Exploded (isomeric) drawing		This draws the product with all layers/detailing taken apart/disassembled.	<ul style="list-style-type: none"> <li>*Easy to check assembly</li> <li>*Can lead to further discussion re. other materials/joints that could be used.</li> </ul>	Can be difficult to draw – especially for a complex product.
10	Assembly drawings		A chronological set of drawings which are used to ensure manufacturers know how to make a product.	It allows the client to make the product (fairly) easily.	Can be difficult to explain without using text to describe assembly.
11	Schematic diagrams		It is a circuit diagram showing where components are placed – used for electronics.	Simple method of explaining how circuitry works. As symbols are used, language barriers isn't an issue.	-----
12	CAD (Computer Aided Design)		Computer images drawn of products using different pieces of software.	<ul style="list-style-type: none"> <li>*Accurate</li> <li>*Can easily zoom in and manipulate</li> <li>*Can send off for feedback to develop</li> </ul>	It takes time to train people to use the software.
13	Annotated sketches		Annotations are used with sketches to allow the designers to communicate their thinking i.e. materials, usage etc.	<ul style="list-style-type: none"> <li>*All aspects of the designs can be explained</li> <li>*Useful if the designer struggles with their drawing skills</li> </ul>	Time consuming to do – especially if points are justified.



Contextual points	Link to argument – what is Shakespeare trying to say?	✓
Divine right	The idea that monarchs were appointed by God and their authority was absolute. Macbeth's usurpation of the throne and the ensuing chaos reflect concerns about the consequences of challenging royal authority.	
Great Chain of Being	A hierarchical order that encompassed all creation. Macbeth's actions disrupt the natural order, leading to chaos and disorder in the world around him.	
Religion	Macbeth claims life is "a tale told by an idiot...signifying nothing" and a Jacobean audience would have been greatly shocked that he dares to question God. This solidifies his tyrannical ways.	
Patriarchal society	Gender roles are subverted as women give commands, at the time these women were accused of being witches.	
Witchcraft	King James I was obsessed with this. Shakespeare links Lady Macbeth to evil.	
The Gunpowder Plot	King James I would have approved of the play as it punishes regicide, something he was the target of himself.	

Themes	Key quotations 1	✓
Ambition	- "I am in blood Stepped in so far that, should I wade no more, Returning were as tedious as go o'er." (Act 3, Scene 4)	
Good and evil	"If good, why do I yield to that suggestion whose horrid image doth unfix my hair and make my seated heart knock at my ribs, against the use of nature?" (Macbeth)	
Loyalty/ betrayal	- "There's no art To find the mind's construction in the face. He was a gentleman on whom I built An absolute trust." (Act 1, Scene 4)	
Kingship	"Bleed, bleed, poor country! Great tyranny!" (Macduff) "Those he commands move only in command, nothing in love: now does he feel his title hand loose about him, like a giant's robe upon a dwarfish thief." (Angus)	
Violence & Tyranny	- "Blood will have blood." (Act 3, Scene 4)	
Fate vs Freewill	- "For mine own good, All causes shall give way. I am in blood Stepp'd in so far that, should I wade no more, Returning were as tedious as go o'er." (Act 3, Scene 4)	
Supernatural	- "By the pricking of my thumbs, Something wicked this way comes." (Act 4, Scene 1)	
Tragedy in the play		✓
Structure – everyone is affected from the top down. Each time Macbeth's status increases, Scotland suffers more, there is more blood shed. Fall of a nobleman.		
Fatal flaw - ambition and greed		
External pressures – witches, Lady Macbeth,		

Key term	Meaning	✓
Hamartia	Tragic flaw	
Peripeteia	Sudden turn of events/ unexpected reversal	
Catharsis	Relief of emotional tension	
Regicide	The action of killing a king	
Pathos	An experience that evokes pity, sympathy or compassion	
Dramatic irony	Audience knows something characters do not	
Soliloquy	Speaking one's thoughts aloud (character in a play)	

Basic essay plan	✓
Thesis – introduce your argument	
Point 1 – Develop your argument with a focus on the extract, using evidence	
Point 2 – Link to examples in the rest of the play	
Point 3 – Link and develop argument with context	
Conclusion – sum up your findings	





## Year 9 Macbeth Knowledge organiser

Key Term	Meaning	✓	Themes	Key quotations 2	✓	Contextual point	Link to argument – what is Shakespeare trying to say?	✓
Tragic hero	A protagonist with a fatal flaw that eventually leads to their downfall. In Macbeth is a tragic hero whose ambition and thirst for power ultimately result in his demise.		Power & Corruption	- "Fair is foul, and foul is fair." (Act 1, Scene 1) - "Stars, hide your fires; Let not light see my black and deep desires." (Act 1, Scene 4)		Machiavellian Politics	The character of Macbeth embodies Machiavellian principles of manipulation, deceit, and ruthlessness in pursuit of power. Shakespeare's depiction of political intrigue and ambition reflects Renaissance notions of power and governance.	
Aside	A brief remark made by a character to the audience or another character on stage, not intended to be heard by all the characters. Asides provide insight into a character's true thoughts or motivations.		Appearance vs Reality	- "Look like th' innocent flower, But be the serpent under't." (Act 1, Scene 5) - "False face must hide what the false heart doth know." (Act 1, Scene 7)		Social Hierarchies	Macbeth explores themes of social order and hierarchy, with characters navigating their positions within a rigid social structure. The disruption caused by Macbeth's ascent to power underscores tensions surrounding class, status, and ambition.	
Foreshadowing	The use of hints or clues to suggest future events in a narrative. For instance, the witches' prophecies and Macbeth's reaction to them foreshadow the tragic events that unfold later in the play.		Violence & Disorder	- "What bloody man is that? He can report, As seemeth by his plight, of the revolt The newest state." (Act 1, Scene 2) - "It will have blood, they say; blood will have blood." (Act 3, Scene 4)		Catholic-Protestant Conflict	England was embroiled in religious tensions between Catholics and Protestants during Shakespeare's era. The play's themes of guilt, redemption, and divine justice may reflect broader religious concerns of the time.	
Ambiguity	The quality of being open to more than one interpretation. Shakespeare often employs ambiguity in Macbeth, leaving certain events or character motivations open to debate.		Power & Corruption	- "Unsex me here, And fill me from the crown to the toe topful Of direst cruelty!" (Act 1, Scene 5)		Renaissance Humanism	Renaissance humanist ideas, such as the belief in human agency and the importance of individual conscience, are reflected in Macbeth's moral struggle and eventual downfall. The play explores themes of free will, fate, and the consequences of one's actions.	
Motif	A recurring symbol, image, or theme in a literary work that contributes to its overall meaning. Motifs in Macbeth include blood, darkness, and the supernatural.		Masculinity	- "I dare do all that may become a man; Who dares do more is none." (Act 1, Scene 7)		Gender roles	Shakespeare's portrayal of Lady Macbeth as a strong, ambitious woman challenges traditional gender roles of the period. Her desire for power and influence defies societal expectations, highlighting tensions surrounding gender and power.	
Hubris	Excessive pride or arrogance that leads to a character's downfall. Macbeth's hubris is evident in his ambition and belief in his invincibility, despite the warnings and prophecies against him.		Madness	- "Out, out, brief candle! Life's but a walking shadow, a poor player That struts and frets his hour upon the stage And then is heard no more." (Act 5, Scene 5)		Political instability	The political climate in England was marked by intrigue, betrayal, and power struggles. Macbeth's ruthless quest for power and the manipulation of political alliances resonate with the uncertainties of the time.	
Supernatural	Beyond the laws of nature; involving forces or beings beyond the realm of scientific understanding. The witches and their prophecies, as well as other supernatural elements, play a significant role in Macbeth.		Guilt & Conscience	- "Will all great Neptune's ocean wash this blood Clean from my hand? No, this my hand will rather The multitudinous seas in incarnadine, Making the green one red." (Act 2, Scene 2)				



# Food labelling

## Food labelling

Manufacturers include a range of information on food labels. Some of which is legally required and some of which is useful to the consumer or supermarket.

Nutrition information helps consumers make healthier choices. Back-of-pack nutrition information is legally required on food packaging.

### NUTRITION

When heated according to instructions:

Typical values	Per 100g	Each pack (390g**)
Energy	457kJ 109kcal	1781kJ 424kcal
Fat	3.9g	15.2g
of which saturates	1.9g	7.5g
Carbohydrate	12.1g	47.1g
of which sugars	1.6g	6.2g
Fibre	1.1g	4.2g
Protein	5.8g	22.6g
Salt	0.6g	2.2g

## Front-of-pack labelling

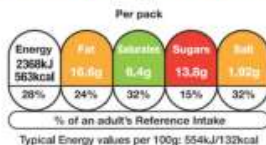
Front-of pack-nutrition information is **voluntary** but if a food business chooses to provide this, only the following information may be provided:

- energy only;
- energy along with fat, saturates, sugar and salt.

Red, amber and green colours, if used, show at a glance whether a food is high, medium or low for fat, saturates, sugars or salt. The colour coding can be used to compare two products.

Nutrient	Low	Medium	High
Fat	≤3.0g/100g	>3.0g to ≤17.5g/100g	>17.5g/100g
Saturates	≤1.5g/100g	>1.5g to ≤5.0g/100g	>5.0g/100g
(Total sugars)	≤5.0g/100g	>5.0g and ≤22.5g/100g	>22.5g/100g
Salt	≤0.3g/100g	>0.3g to ≤1.5g/100g	>1.5g/100g

Note: Portion size criteria apply to portion sizes/servings greater than 100g.



**Product Name-** Informs the consumer what the product is, for example cornflakes, apricot jam etc.

Differences between similar products must be clearly shown, e.g. Fruit Flavoured yoghurt and Raspberry yoghurt.

Pictures must not be misleading, e.g. Strawberry Flavoured Ice-Cream must not show pictures of strawberries on the packet.

If a food has been processed then it must be included in the name of the product (e.g. Smoked Salmon, Dried Banana)

## Legally required information

- Name of food or drink.
- List of ingredients (including water and food additives), in descending order of weight.
- Weight or volume.
- Date mark (Best-before and use-by).
- Storage and preparation conditions.
- Name and address of the manufacturer, packer or seller.
- Country of origin and place of provenance.
- Nutrition information.
- Lot or batch number.
- GM (Genetically Modified ingredients)
- Nutritional Labelling.

Additional information may also be provided, such as cooking instructions, serving suggestions or price.

**Storage Instructions-** Informs the consumer how to store the product to prevent spoilage.

Temperature guidelines are important, e.g. keep refrigerated, suitable for home freezing.

## Date marks

**Best-before-date:** The date after which foods may not be at their best, although probably safe to eat if stored according to instructions.

**Use-by-date:** The date given to foods that spoil quickly, such as cooked meats. It is unsafe to eat foods beyond their use-by-date. Used for high risk foods.



## Beetroot salad

Keep refrigerated. Once opened consume within 24 hours and by the 'use-by' date shown.

## Allergen labelling

An allergic reaction to a food can be described as an inappropriate reaction by the body's immune system to the ingestion of a food.

By law, food, drink and ingredients that are known to contain allergens are required to be in **bold**, **highlighted**, **underlined** or in *italics*.

The most common allergens are present in:

Celery (and celeriac)	Milk
Cereals containing gluten	Molluscs
Crustaceans	Mustard
Eggs	Nuts
Fish	Peanuts
Lupin	Sesame
	Soybeans
	Sulphur dioxide

## INGREDIENTS

Water, Carrots, Onions, Red Lentils (4.5%), Potatoes, Cauliflower, Leeks, Peas, Cornflour, **Wheat** flour, Cream (**milk**), Yeast Extract, Concentrated Tomato Paste, Garlic, Sugar, **Celery** Seed, Sunflower Oil, Herb and Spice, White Pepper, Parsley

## ALLERGY ADVICE

For allergens, see ingredients in **bold**

**Weight or Volume-** Most prepacked food is required to show the net weight or volume, within a few grams of the weight. If not sold prepacked, most foods have to be sold by quantity or number. Some are sold in standard amounts, this allows consumers to compare products for value of money. A large 'e' shown next to something shows it is an average quantity.

## Additives

Food additives must be shown clearly in the list of ingredients on food labels, either by the additive's name or E number. Additives are added to ensure safety, increase shelf life or improve the taste, texture or appearance of food. Additives need to be approved before they can be used. Additives are given an 'E number' to show that they have been rigorously tested for safety and have been approved for use in food by the European Commission.

An example is E100 or curcumin, made from turmeric.

Another example is caramel (E150), a synthetic colouring commonly used to colour colas.



**Preparation instructions-** Cooking and heating instructions inform the consumer how the product should be used. E.g. Cook in a fan oven 180c or normal oven 200c

## Key terms

**Additives:** Are added to ensure safety, increase shelf life or improve the taste, texture or appearance of food. They must be shown clearly on food labels.

**Allergen labelling:** Allergens must be clearly shown in **bold**, **highlighted**, **underlined** or in *italics*.

**Back-of-pack labelling:** Is legally required and can help consumers make healthier choices.

**Claim:** Any statement about the nutrient content or health benefit of a food product.

**Front-of-pack labelling:** Is voluntary but must provide certain information and can use red, amber and green colour coding.

**Labelling:** The term given to the information about the product which is displayed on the packaging.

**Nutrition information:** Helps consumers make healthier choices.

**Shelf life:** How long a food product can be kept safely and remain of high quality.

## Nutrition and health claims

Nutrition and health claims are controlled by European regulations. Claims on a food or drink should have been authorised and listed on the European register of claims and have met certain conditions.

### Nutrition claims

A nutrition claim describes what a food contains (or does not contain) or contains in reduced or increased amounts. Examples include:

- Low fat (less than 3g of fat per 100g of food);
- High fibre (at least 6g of fibre per 100g of food);
- Source of vitamin C (at least 15% of the nutrient reference value for vitamin C per 100g of food).

### Health claims

A health claim states or suggests there is a relationship between a product and health. In order to make a claim, the amount present of the nutrient, substance or food must fulfil the specific conditions of use of the claim. The types of health claims are:

- 'Function Health Claims';
- 'Risk Reduction Claims';
- Health 'Claims referring to children's development'.

**GM Genetically Modified ingredients-** Products and Ingredients from Genetically Modified sources must be labelled. You do not need to label foods such as milk which may come from cows fed on GM foods.

**Manufacturers name and address-** So that a product can be returned if faulty, or a letter of complaint can be sent in writing.

**Place of Origin-** Informs the consumer of the place the food has come from. e.g. Product of Spain, or produced in Spain with chicken supplied from Thailand.





Reflexive verbs		
Se réveiller	To wake up	
Se lever	To get up	
S'habiller	To get dressed	
Se doucher	To have a shower	
Se brosser les dents	To brush your teeth	
Se coiffer les cheveux	To do your hair	
Se brosser les cheveux	To brush your hair	
Se laver	To get washed	
Se coucher	To go to bed	
S'endormir	To go to sleep	
Se maquiller	To put your make-up on	
Se reposer	To relax/rest	
S'amuser	To have fun	
S'entraîner	To train	

Reflexive verbs are used to talk about daily routine. Conjugate as usual but you also need to add a reflexive pronoun to add the idea of 'myself'.			
je	me	couche	
tu	te	couches	
il/elle/on	se	couche	
nous	nous	couchons	
vous	vous	couchez	
ils/elles	se	couchent	

How to say 'at someone's house'		
Chez moi	At my house/at home	
Chez nous	At our house	
Chez lui/chez elle	At his/her house	

Frequency/time phrases		
le matin	in the morning	
l'après-midi	in the afternoon	
le soir	in the evening	
après les cours	after lessons	
quand j'ai du temps libre	when I have some free time	
d'habitude	usually	
souvent	often	
le vendredi	on Fridays	
le vendredi soir	on Friday night(s)	
le vendredi matin	on Friday morning(s)	
tous les samedis	every Saturday	
toute la semaine	all week	
le week-end	at the weekend	
le lendemain	the next day	

Sequencers/time phrases		
avant l'école	before school	
parfois	sometimes	
quelquefois	sometimes	
tous les jours	every day	
tous les soirs	every night/evening	
surtout	especially	
normalement	normally	
toujours	always	
d'abord	firstly	
après	after	
ensuite	next	
puis	then	
plus tard	later	

Faire la fête!	To party!
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Les passe-temps (free time)		
profiter du week-end	To make the most of the weekend	
passer le week-end	To spend the weekend	
je parle avec mes copains	I talk with friends	
je fais de la cuisine / du vélo	I cook/cycle	
je vais au centre sportif	I go to the sports centre	
je joue à des jeux-vidéos	I play video games	
j'ai un match de rugby	I have a rugby match	
je m'amuse	I have fun	
je m'entraîne	I train	
je travaille	I work	
je reste dans ma chambre	I stay in my room	

Talking about celebrations		
Mon anniversaire	My birthday	
Une fête	A party/celebration	
fêter	To celebrate	
Faire la fête	To party	
Recevoir	To receive	
Ensemble	Together	
Chanter	To sing	
Avec toute la famille	With the whole family	
La naissance de	The birth of	
Un mariage	A marriage	
Un grand repas	A big meal	
Des cadeaux	Presents	
Des cartes	Cards	
Quel bonheur!	Happiness!	
Passer une bonne soirée	To have a good evening/night	



### The simple future:

It is used to describe what will happen in the future "I will work". To form it, use future stem plus appropriate ending.

For **-er** and **-ir** verbs, the future stem is the infinitive e.g *je travaillerai* – I will work.

For **-re** verbs, drop the **-e** from the infinitive. e.g. *vendre* -> *Je vendrai* – I will sell

For the 4 main irregular verbs, use the stem:  
ir (aller), aur (avoir), ser (être), fer (faire)

Les phrases au futur	Future time phrases	
Qu'est-ce que tu vas faire?	<i>What are you going to do?</i>	
Aujourd'hui	<i>today</i>	
Ce matin	<i>this weekend</i>	
Demain matin	<i>this summer</i>	
Demain après-midi	<i>tonight</i>	
Demain soir	<i>tomorrow</i>	
La semaine prochaine	<i>Next week</i>	
Ça va être super-intéressant	<i>It's going to be really interesting</i>	
Ce sera	<i>It will be</i>	

### The near future

You can use the present tense of *aller* (to go) + an infinitive to refer to the future. This is called the near future tense.

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<i>je vais</i>	<i>aller au parc / à la piscine</i>	
<i>tu vas</i>	<i>faire les magasins</i>	
<i>il/elle/on va</i>	<i>jouer au football</i>	
<i>nous allons</i>	<i>visiter le musée</i>	
<i>vous allez</i>	<i>voir un spectacle</i>	
<i>ils/elles vont</i>	<i>partir à midi</i>	

Simple future Infinitive + Verb endings		For example	
<i>Je</i>	<b>-ai</b>	<i>Je travaillerai</i>	
<i>Tu</i>	<b>-as</b>	<i>Tu travailleras</i>	
<i>Il/Elle/On</i>	<b>-a</b>	<i>Il/Elle/On travaillera</i>	
<i>Nous</i>	<b>-ons</b>	<i>Nous travaillerons</i>	
<i>Vous</i>	<b>-ez</b>	<i>Vous travaillerez</i>	
<i>Ils/Elles</i>	<b>-ont</b>	<i>Ils/Elles travailleront</i>	

La musique	Music	
Je joue dans un groupe de musique	<i>I play in a music group</i>	
Je joue du piano/violon/ de la guitare/flûte	<i>I play piano/violin/guitar/flute</i>	
J'ai un cours de musique	<i>I have a music lesson</i>	
Quelle sorte de musique aimes-tu?	<i>What sort of music do you like?</i>	
J'écoute toutes sortes de musique	<i>I listen to all sorts of music</i>	

Role plays structures		
Tu aimes..?	<i>Do you like?</i>	
Ça t'intéresse?	<i>Does it interest you</i>	
Tu es libre? Tu viens?	<i>Are you free/are you coming</i>	
D'accord, je veux bien	<i>Ok, I would like to</i>	
Oui, je suis libre/non, je ne suis pas libre	<i>Yes, I'm free/No, I'm not free</i>	
C'est combien?	<i>How much is?</i>	
Une séance	<i>A showing/screening</i>	
Le concert commence à quelle heure?	<i>At what time does the concert start?</i>	
Le concert finit à quelle heure?	<i>At what time does the concert finish?</i>	
Un billet	<i>A ticket</i>	



## 1. How significant is India as a country? ☐

- India is an example of an **emerging** country.
- It has one of the **fastest growing economies 7%** and is predicted to have the **second largest economy by 2050**.
- The **location** of India encourages its growth, it can easily trade with Europe and South East Asia.
- India is likely to have overtaken China as the worlds most populated country **1.42 Billion**.
- Politically** It is the worlds largest democracy.
- It was once **colonised** by Britain.
- There are **four** major religions with **Hinduism** being the largest.
- India has the worlds largest film industry (**Bollywood**).
- It has a wide range of **Biodiversity**. Including Tigers and Elephants.



## 2. How is India Globalised? ☐

**Globalisation** has increased India's exports and output.

- Exports increased by almost 20 times in 23 years, a **500%** increase in **GDP**
- reduced unemployment and poverty.

Recent economic policies in India have encouraged **Foreign Direct Investment (FDI)** by the government supporting a market economy. Most has come from major Transnational Companies (TNCs).

**Shipping, containerisation and aircraft technology** have accelerated globalisation and reduced transports costs.

## 3. How do TNC's operate in India? ☐

**Software and ICT** services have played an important role in the country's growth worth about US\$ 100billion in 2014-15 particularly '**outsourcing**' ICT and other services to developed countries E.g. **BT call centres** in Bangalore.

Call centre workers are paid well in comparison to other jobs but the work is hard and long hours can be a problem.



## 4. What impacts have these changes had on the people and environment of India? ☐

Economic development in India has social and economic impacts. Rapid urbanisation has created a huge rural and urban contrast.

Social impacts, including urbanisation (as a result of **rural-urban migration**): more educated women leading to lower birth and fertility rates because of later marriage  
young urban Hindus are freer to marry outside their caste.

**Economic impacts:**No shortage of jobs in the textile industry but wages are low.  
Textile jobs are unskilled. 70% of employees are young women on low pay.  
Older women are often discriminated against.

**Environmental impacts:**  
India is the world's third greatest emitter of greenhouse gases. India has some of the world's largest urban slums, lacking clean water and **sanitation**.



## 4. What are the positives and negatives of Top Down development? ☐

**Top-down** development involves: decision-makers – usually governments or **Transnational Companies (TNCs)** experts who plan changes.  
Top-down development schemes: are large and expensive often involve loans from **Inter-Governmental Organisation (IGOs)** – i.e. government banks.

The **Sardar Sarovar Dam** was funded by the World Bank, Japanese banks and the Indian government.



### The winners are:

- India's cities – hydroelectric power (HEP) and the provision of water.
- Farmers – **irrigation** water for crops.

### The losers are:

Local residents – villages and farmland have been flooded by the dam.  
Western India – religious and historic sites have been flooded.

## 5. How can bottom up development help India? ☐

**Bottom-up** development involves: experts working with communities to identify their needs non-governmental organisations (**NGOs**), e.g. charities.  
They are **small-scale** and **inexpensive** bring **social** and **economic** benefits to local communities.



**Biogas plants** are an example of bottom-up development in India. Biogas plants are pits that are filled with dung which ferments to produce methane.

### The benefits are:

- Cooking with gas is smoke-free, reducing respiratory illnesses.
- Girls have more time to go to school rather than collecting fuelwood.
- Slurry produced is a nutrient rich fertiliser.
- Larger plants can be used to generate electricity.

## 6. India, which way next? ☐

India's role is increasing in Asia, and globally: Globally, India belongs to the **G20** group of the world's largest economies.

India can help resolve global problems (e.g. climate change).

India now supports investment through the **World Bank** in developing countries.

It is an important member of the **United Nations** and is one of the largest contributors to UN peace keeping missions.

Despite rapid economic growth, India has not invested enough in its own **infrastructure**.

India's government does not receive enough tax revenue (from TNCs) owing to tax free incentives to develop its infrastructure (transport, piped water and sewage treatment).





Familienmitglieder – family members	
In meiner Familie gibt es ... (+acc)	In my family, there is/are ...
Das ist ... / Das sind ...	This is/are ...
die Geschwister	siblings
der Bruder (Brüder)	brother(s)
die Schwester(n)	sister(s)
der Stief(bruder)	step(brother)
die Halb(schwester)	half(sister)
der Zwilling	twin
die Eltern	parents
der Vater (die Väter)	father(s)
die Mutter (die Mütter)	mother(s)
die Großeltern	grandparents
die Großmutter	grandmother
der Großvater	grandfather
die Verwandten	relatives
die Tante/der Onkel	aunt/uncle
der Sohn/die Tochter	son/daughter
die Frau	woman, wife
der Mann	man, husband

Familienmitglieder – family members	
Mein (Bruder), der ... heißt	My (brother) who is called
Mein (Bruder), der immer böse ist	My (brother) who is always grumpy
Meine (Schwester), die ... heißt	My (sister) who is called
Mein (Kaninchen), das ... heißt	My (rabbit) who is called
Meine (Fische), die ... heißen	My (fishes) who are called
Meine (Eltern) die nie geheiratet haben	My parents, who have never married
Er/Sie trägt (k)eine Brille	He/she (doesn't) wear glasses.

Beschreibungen - descriptions	
Er/Sie hat/ Sie haben	He/She has/ They have
lange/kurze Haare	long/short hair
braune/blonde/rote schwarze/weiße Haare	brown/blond/red/black/white hair
blaue/grüne/grau Augen	blue/green/grey eyes
Er/Sie ist/Sie sind	He/She is/They are
klein/groß	small/tall
ab und zu	now and then
manchmal/oft	sometimes/often
immer/nie	always/never
sehr/total/ganz	very/totally/fully
ziemlich/nicht	quite/not
lustig/glücklich	funny/happy
nett/freundlich	nice/friendly
böse/traurig/süß	grumpy/sad/sweet
locker/modern	casual/modern
typisch	typical
anders/ unterschiedlich	different/diverse
zusammen	together

Nützliche Verben – useful verbs	
sich interessieren für + acc	to be interested in
wohnen	to live
mögen	to like
anrufen (separable)	to call
sehen	to see
lachen	to laugh
heißen	to be called
möchten	to want/would like
sich verstehen mit + dative	to get on with

Beziehungen - relationships	
Ich habe eine gute Beziehung zu ... (+dat)	I have a good relationship with
Ich verstehe mich (gut) mit (+dat)	I get on (well) with
ihm/ihr/ihnen (dative case)	him/her/them
ein bisschen	a little
so/wirklich/zu	so/really/too
laut/gestresst	loud/stressed
ernst/streng	serious/strict
fleißig/faul	hardworking/lazy
aktiv/sportlich	active/sporty
unabhängig/ehrlich	independent/honest
komisch	funny/strange
der Freund/die Freundin	friend
das Kind(er)	child(ren)
das Mädchen/der Junge	girl/boy
die Leute	people

Zeitangaben – Time phrases	
normalerweise	usually
am Wochenende	on the weekend
nächstes Wochenende	next weekend
letztes Wochenende	last weekend
jede/diese Woche	every/this week
nächste/letzte Woche	next/last week
jeden/diesen Monat	every/this month
nächstes/letztes Jahr	next/last year
am Tag	on/during the day
neulich/vor kurzem	recently
morgen/gestern	tomorrow/yesterday





Was wirst du am Wochenende machen? What will you do at the weekend?		
Ich werde/Er wird ...	I will/He will ...	
Rad fahren	cycle	
ins Freibad gehen	go to the outdoor pool	
soziale Netzwerke surfen	browse social networks	
Hausaufgaben machen	do homework	
in die Kirche gehen	go to church	
Zeit mit Familie/Freunden verbringen	spend time with family/friends	
grillen	have a BBQ	
Musik hören	listen to music	
einen Film gucken	watch a film	
fernsehen	watch tv	
bestimmt	surely	
wahrscheinlich	probably	
vielleicht	maybe	
The future tense is formed by using the correct part of "werden" with an infinitive at the end. NB The future tense translates to I will play or I am going to play		
To talk about actions in the past use the perfect tense. You need a form of haben or sein (for movement verbs) plus a past participle (ge+verb stem+t)		
Ich habe/er, sie, es hat/ wir haben: gelacht/getanzt/ gehabt/gefeiert/ kennengelernt/ Ich habe Spaß gehabt.	I/he, she, it/ we (have) laughed/danced/ had/celebrated/ got to know I had fun.	
<u>some past participles are irregular</u> gegessen/getrunken/ gesehen/gesungen/ besucht/organisiert/ stattgefunden	ate/drank/ saw/sang/ visited/organised/ took place	
Ich bin/er, sie ist/wir sind gefahren/gegangen	I/he, she/we travelled/went	

sich verstehen mit – to get on with		
ich verstehe mich mit (+dat)	I get on with	
du verstehst dich mit (+dat)	you get on with	
er/sie/es versteht sich mit (+dat)	he/she/it gets on with	
wir verstehen uns mit (+dat)	we get on with	
ihr versteht euch mit (+dat)	you all get on with	
Sie/sie verstehen sich mit (+dat)	you (form)/they get on with	
Picture description		
Im Bild/Im Foto	On the photo	
Ich/Man kann ... sehen	I can see/You can see	
Im Bild gibt es	In the picture there is	
Auf der linken/rechten Seite	On the left/on the right	
Im Hintergrund (V2)	In the background	
Im Vordergrund (V2)	In the foreground	
Sie spielen, essen, tragen	They are playing, eating, wearing	
Use present tense to say what people are doing "NO IS-ING" "AM-ING" OR "ARE-ING"		
Three key verbs are often used in the imperfect to DESCRIBE things in the past		
Ich/es war	I/it was	
Ich/es hatte	I/it had	
Es gab	There was	
Es war spitze/klasse! - It was amazing. Ich war fix und fertig! – I was exhausted. Sie hatte nicht alle Tassen im Schrank – She was crazy.		
Some opinion phrases are also often used in the imperfect		
Ich fand es ...	I found it	
Es gefiel mir	I liked it	
Ich mochte/hasste	I liked/I hated	

Wir haben gefeiert – We celebrated		
Hast du neulich ein Fest besucht?	Have you recently visited a festival?	
Wann hat es stattgefunden?	When did it take place?	
Mit wem bist du gegangen?	Who did you go with?	
Was hast du gemacht?	What did you do?	
Was hast du gesehen?	What did you see?	
Wie war es?	How was it?	
eine Party/eine Feier/ein Fest	a party/a celebration/a festival	
zu Hause/in der Stadt	at home/in town	
mit Freunden/mit meiner Familie	with friends/with my family	
mit dem Bus/mit dem Zug/zu Fuß	by bus/by train/on foot	
an Neujahr/am Silvesterabend	at New Year's/on New Year's Eve	
zum Geburtstag/zu Weihnachten	on my birthday/on Christmas	
Ein gutes Vorbild – A good role model.		
Er/sie ist ein gutes Vorbild, weil .....	He/she is a good role model because	
der Unterschied	the difference	
der Rassismus/Sexismus	racism/sexism	
der Politiker	politician	
die Homophobie/die Transphobie	homophobia/transphobia	
die Diskriminierung	discrimination	
die Minderheit	minority	
die Jugendlichen	young people	
die Arbeitslosigkeit	unemployment	
die Gesellschaft	society	
das Gesicht	face	
kämpfen/unterstützen	to fight/support	
nicht binär	non-binary	
rassistisch	racist	
schwul/lesbisch	gay/lesbian	
sich wohlfühlen	to be comfortable	

## Design terms:

Keyword	Definition	Tick
Kerning	Kerning refers to the space between two specific letters (or other characters: numbers, punctuation, etc.) and the process of adjusting that space improves legibility.	
Tracking	Tracking is similar to kerning in that it refers to the spacing between letters or characters. However, instead of focusing on the spacing between individual letters (kerning), tracking measures space between groups of letters.	
Bold	Bold colours or text stand out in a design. They are often bright or contrasting colours. Bold text has a thicker weight.	
Font weight	The font-weight specifies the weight, or thickness, of a font. A heavier weight is often used to aid with hierarchy in a design.	
Alignment	Depending on the desired visual outcome, text can be either left, center or right aligned in a design. This refers to which margins the paragraph is aligned to.	
Justified text	Justified text has a unified line length created by increasing the spacing between the words. While the structured shape of justified text can initially look neater (with hard edges on both sides as opposed to the soft edge of left-aligned text), it can lead to unpleasant rivers (or gaps), which can cause the design to be more disorganised.	
Script	Script typefaces are fonts or type based upon historical or modern handwriting styles and are more fluid than traditional typefaces.	
Slab serif	Slab serif fonts feature a geometric feel compared to traditional serif fonts and feature serifs that are square and larger, bolder.	
Sans serif	A serif is the little extra stroke or curves, at the ends of letters.	
Sans	“Sans” literally means “without”, and a sans serif font does not include any extra stroke at the ends of the letters.	
RGB	RGB Color model stands for Red, Green, and Blue and is mainly used for electronic displays including computers and smartphones, and is based on the additive color model of light waves.	
CMYK	CMYK Color model stands for Cyan, Magenta, Yellow, and Key (Black). CMYK is the colour model used for printing.	
Monochromatic	The monochromatic scheme as the name says combine different shades from one color to create an attractive design.	
Saturation	Saturation refers to the intensity of a colour. Highly saturated colours appear more vibrant and bold, whereas less saturation appears dull.	





Timeline of key events:

1941: Grand Alliance set up  
**November 1943:** Tehran Conference  
**February 1945:** Yalta conference  
**April 1945:** Roosevelt, President of the US died.  
**July 1945:** Potsdam Conference  
**16<sup>th</sup> July 1945:** US successfully tested an atomic bomb  
**1946:** Churchill delivered his 'Iron Curtain' speech in Missouri, USA  
**1946:** Long Telegram sent by George Kennan  
**1946:** Novikov Telegram sent  
**1947:** Truman Doctrine which included the policy of containment  
**1947:** Marshall Plan outlined, officially called the European Recovery Plan  
**1947:** Cominform set up  
**1948:** The communists in Czechoslovakia, seized control  
**1948-49:** Berlin Blockade  
**1949:** Comecon set up  
**May 1949:** western Allies announced their former occupation zones including west Berlin would join together to form the FRG  
**October 1949:** The Soviet zone of Germany became the GDR.  
**April 1949:** NATO set up  
**1953:** By now the US had given \$17bn to help European countries rebuild.  
**1953:** Death of Stalin. Rakosi replaced by Imre Nagy as Hungary's PM.  
**1955:** Nagy replaced by Rakosi  
**1956:** Khrushchev's secret speech  
**1955:** Warsaw Pact set up  
**1957:** Sputnik launched  
**1956:** Hungarian Uprising



Key terms/definitions

Term	Definition	✓
<b>Arsenal</b>	Collection of military equipment and weapons	
<b>Bolshevik Revolution</b>	Took place in Russia in October/November 1917 when the Bolsheviks seized power and set up a communist state	
<b>Comecon</b>	Association of Soviet-oriented communist countries set up in 1949 to co-ordinate economic development	
<b>Cominform</b>	Communist Information Bureau established in 1947 to exchange information among 9 Eastern European countries and coordinate their activities	
<b>Containment</b>	Using US influence and military resources to prevent the expansion of communism into non-communist countries	
<b>De-Stalinisation</b>	Elimination of the influence of Stalin initially promoted by Khrushchev after 1956	
<b>H-bomb (hydrogen bomb)</b>	An explosive weapon of enormous destructive power	
<b>Interwar years</b>	The period between the two world wars: 1919-1939	
<b>MAD (Mutually Assured Destruction)</b>	The belief that nuclear weapons made each side more secure and less likely to attack. The enemy would not dare to attack first, because if it did, the other would strike back before its bombs had landed and it too would be destroyed.	
<b>Marshall Aid</b>	US programme of financial and economic aid given to Europe after the end of WW2.	
<b>Marshall Plan</b>	A special system of loans from the USA to European countries implemented at the end of the Second World War which allowed for reconstruction and economic regeneration. General George Marshall was the senior US army officer who devised the plan.	
<b>NATO (North Atlantic Treaty Organisation)</b>	Created in 1949 following the Berlin Crisis of 1948-1949, its 12 founding members included the USA and Canada, Britain and France. NATO exists to protect the freedom and security of its members using both political and military means. Today, it has 28 member countries.	
<b>Nuclear weapon</b>	Highly destructive explosive device that gets its power from nuclear reactions.	
<b>Purge</b>	Elimination of opponents from a state or political party	
<b>Red Army</b>	The Soviet army	
<b>Reparations</b>	Compensation to other countries to be paid by Germany as the defeated country after WW2	
<b>Satellite states</b>	Countries under the domination of a foreign power: in this context, the USSR	
<b>Secret police</b>	Police agency which operates in secret to protect national security. Generally used to frighten opponents and critics of a government.	
<b>Sphere of influence</b>	Region of the world in which one state is dominant	
<b>Soviet bloc</b>	Countries in Eastern Europe controlled by the Soviet Union	
<b>Superpower</b>	A country or state that has great power and influence globally	
<b>Truman Doctrine</b>	Truman's idea that it was the USA's duty to contain the spread of communism. To do this he was prepared to engage the US in military enterprises all over the world.	
<b>Warsaw Pact</b>	A military treaty and association consisting of the Soviet Union and its European satellite states	





## Timeline of key events:



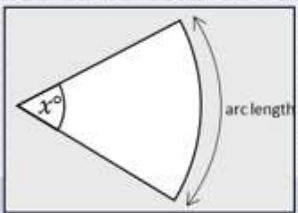
## Key terms/definitions

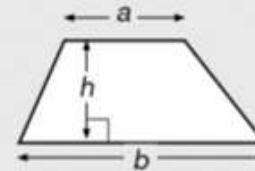
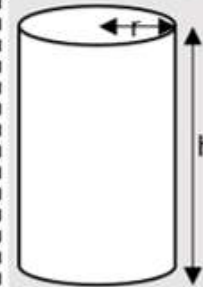
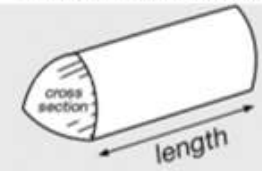
Term	Definition	✓
<b>Berlin Ultimatum</b>	Khrushchev's accusation that the Allies had broken the Potsdam Agreement of 1945	
<b>Blockade</b>	A naval quarantine around Cuba to prevent soviet ships delivering military materials	
<b>Boundary</b>	The dividing line in East Berlin marking where the barrier was created to encircle West Berlin from East Berlin and the GDR, where the Berlin Wall was then built.	
<b>Brain-drain</b>	The term to describe the large numbers of professional and skilled people leaving through East Berlin for a new life in the West	
<b>Brezhnev Doctrine</b>	Soviet foreign policy from 1968 which meant military intervention by Warsaw Pact forces if another member of the Warsaw Pact tried to leave the Soviet sphere of influence	
<b>Brinkmanship</b>	A term used to describe pursuing a dangerous policy to the limits of safety; associated with the 13 days of the Cuban Missile Crisis	
<b>Checkpoint Charlie</b>	The best-known Berlin Wall crossing point between East Berlin and West Berlin. The scene of a famous stand-off between the superpowers.	
<b>CIA</b>	Central Intelligence Agency: used by USA to gather/analyse intelligence for national security	
<b>Cuban exiles</b>	Pro-American Cubans who fled to the USA after the Cuban Revolution. Called 'La Brigada 2506'	
<b>Cuban Revolution</b>	The overthrow of General Batista by Fidel Castro	
<b>De-Stalinisation</b>	The elimination of the influence of Stalin, led by Nikita Khrushchev after the death of Stalin	
<b>Defectors</b>	A person who abandons their country for another country with an opposing ideology	
<b>Defence spending</b>	The amount both the USA and the USSR were spending on military hardware	
<b>Detente</b>	A French term meaning a 'relaxation of tension' between the USA and the USSR	
<b>EEC</b>	The European Economic Community: an organisation to foster economic integration created in 1957	
<b>Espionage</b>	Spying on each other: a main feature of the Cold War, increasing rivalry and mistrust	
<b>Hot Line</b>	A direct line of communication set up between Washington and Moscow	
<b>Jupiter missiles</b>	US nuclear warheads stationed in Italy and Turkey as a forward strike capability	
<b>NATO</b>	North Atlantic Treaty Organisation formed to provide 'collective security' against the USSR	
<b>Non-Proliferation Treaty</b>	Signed by major nuclear and non-nuclear powers pledging their cooperation to stop the spread of nuclear weapons and to stop developing them	
<b>Outer-Space Treaty</b>	A promise made by the superpowers and also Britain, to use outer space for peaceful purposes and not place nuclear weapons in orbit	
<b>Peaceful co-existence</b>	A belief originating from Khrushchev that despite ideological differences the superpowers could exist peacefully together	
<b>Potsdam 1945</b>	The last wartime conference led by Truman, Attlee and Stalin in July 1945	
<b>Prague Spring</b>	Series of liberalising reforms introduced by Dubcek in Czechoslovakia	
<b>Thermonuclear</b>	A military conflict deploying nuclear weapons, likely to lead to MAD (mutually assured destruction)	
<b>Warsaw Pact</b>	A military treaty including the USSR and the European satellite states	

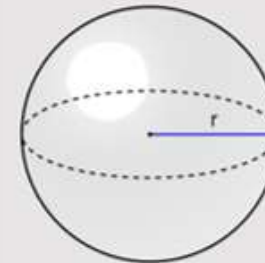
**1949-61:** 4m East Germans fled West  
**1958:** Khrushchev's Berlin Ultimatum  
**1959:** Cuban Revolution: Fidel Castro replaced US - backed General Batista  
**Late 1959:** Khrushchev sending weapons to Cuba  
**5<sup>th</sup> May 1960:** American U2 spy plane shot down over USSR airspace  
**14<sup>th</sup> May 1960:** date for Paris summit meeting (that was cancelled by Khrushchev)  
**Jan 1961:** up to 20,000 refugees going through East Berlin to the West  
**April 1961:** Bay of Pigs failed invasion  
**June 1961:** Vienna summit meeting  
**July 1961:** both US and USSR announce an increase in defence spending  
**13<sup>th</sup> August:** Khrushchev closed the border between East and West Berlin  
**October 1961:** Stand-off at Checkpoint Charlie in Berlin  
**14 – 28<sup>th</sup> October 1962:** 13 days of the Cuban Missile Crisis  
**June 1963:** Kennedy visits Berlin  
**1963:** Hot Line set up  
**August 1963:** Limited Test Ban Treaty  
**1968:** Outer Space Treaty and Nuclear non - Proliferation Treaty signed  
**Spring 1968:** Dubcek's Prague Spring in Czechoslovakia  
**21<sup>st</sup> August 1968:** Soviet invasion of Czechoslovakia  
**Autumn 1968:** Brezhnev Doctrine  
**January 1969:** Jan Palach set fire to himself



## Year 9 – Maths – Summer 2 – Unit 7

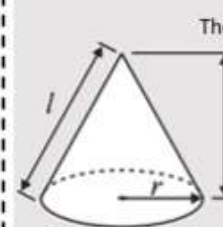
Keyword	Definition	Example
Hectare	The area of a square 100m by 100m. $1\text{ ha} = 100 \times 100 = 10\,000\text{ m}^2$	A 200m by 300m field. $\text{Area} = 60,000\text{ m}^2 = 6\text{ ha}$
Upper bound	The upper bound is the largest number that would round down to a given value at a given degree of accuracy.	Upper bound of 250, rounded to the nearest 5, is 252.5
Lower bound	The lower bound is the smallest number that would round up to a given value at a given degree of accuracy.	Lower bound of 3.87, rounded to 3 significant figures, is 3.865
Error interval	The error interval for a rounded value is $\text{lower bound} \leq x < \text{upper bound}$	The error interval for 9.3, rounded to 1 decimal place, is $9.25 \leq x < 9.35$
Truncate	To truncate a number to a given place value, you remove the following digits <i>without</i> rounding. If necessary, add 0's to maintain place value.	5361 truncated to 2sf = 5300 0.382 truncated to 2dp = 0.38
Surface Area	The total area of all its faces.	The surface area of a cube of length 3cm $\text{SA} = 6 \times 3^2 = 54\text{ cm}^2$
Prism	A 3D solid that has the same cross section all through its length, where the front and back faces are joined by rectangles	A cuboid, A triangular prism (Toblerone). A cylinder is not a prism
Capacity	The amount of liquid a 3D object can hold. Measured in ml or litres.	$1\text{ l} = 1000\text{ cm}^3$ $1\text{ ml} = 1\text{ cm}^3$
Circumference	The perimeter of a circle. $C = 2\pi r = \pi d$	
Arc	Part of the circumference of a circle. $\text{Arc} = \frac{\theta}{360} \times 2\pi r$	
Sector	A slice of a circle between an arc and two radii. $\text{Area} = \frac{\theta}{360} \times \pi r^2$	For a sector with angle $x^\circ$ of a circle with radius $r$ Arc length = $\frac{x}{360} \times 2\pi r$ Area of sector = $\frac{x}{360} \times \pi r^2$

Area of a trapezium =  $\frac{1}{2}(a + b)h$ 

Volume of a prism = area of cross section  $\times$  length

The volume of a cylinder is  
 $V = \pi r^2 h$ 

The total surface area of a cylinder is  
 $A = 2\pi r^2 + 2\pi r h$ 

The volume of a sphere is  
 $V = \frac{4}{3}\pi r^3$ 

The surface area of a sphere is  
 $A = 4\pi r^2$ 

The volume of a pyramid is

 $V = \frac{1}{3} \times \text{area of base} \times \text{vertical height}$ 

The volume of a cone is  $V = \frac{1}{3}\pi r^2 h$ 

Curved surface area of cone

 $A = \pi r l$ 

Total surface area of a cone

 $A = \pi r l + \pi r^2$



## Year 9 – Maths – Summer 2 – Unit 8

Keyword	Definition
Plan	The view from above a solid
Front elevation	The view of the front of the solid.
Side elevation	The view of the side of the solid.
Transformation	Process that moves a shape to a different position or changes its size. Reflections, rotations, translations and enlargements are types of transformation
Image	The resulting shape after an object is transformed
Enlargement	A transformation where all the side lengths of a shape are multiplied by the same scale factor.
Resultant vector	The vector that moves the original shape to its final position after a series of translations or other transformations that do not change the shape or orientation.
Invariant point	An invariant point on a line or a shape is a point that does not vary (move) under a single or combined transformations
Bearing	An angle in degrees, clockwise from north and always written using three digits, e.g. 090 or 127
Construct	To draw accurately using a ruler and compasses
Perpendicular bisector	A line that cuts another line in half at right angles.
Equidistant	'at equal distance'.
Angle bisector	A line that cuts an angle exactly in half.
Locus	The set of all points that obey a certain rule. Often the locus is a continuous path

To fully describe a **single transformation**

- involving reflection, you must state it is a reflection and give the equation of the line of reflection
  - involving a rotation, you must state it is a rotation and give the angle, direction and centre of rotation (no direction is needed for a rotation of  $180^\circ$ )
  - involving an enlargement, you must state it is an enlargement and give the scale factor and the coordinates of the centre of enlargement.
  - Involving translation, you must state it is a translation and give the translation vector
- Only name one transformation when describing a single transformation.

- To find the centre of enlargement, join corresponding points of the object and the image, extend and see where the lines cross.
- A negative scale factor takes the image to the opposite side of the centre of enlargement and also rotates the shape by  $180^\circ$
- When a shape is enlarged the area increases by  $(\text{scale factor})^2$

- In a translation, all the points on the shape move the same distance in the same direction.
- You can describe a translation by using a column vector.
- The top number gives the movement parallel to the x-axis.
- The bottom number gives the movement parallel to the y-axis.

- In reflections, rotations and translations, the object and the image are congruent, as the lengths of the sides and the angles do not change.
- In an enlargement, the object and the image are similar.

- To find the centre of rotation, join corresponding vertices of the object and its image, and then construct perpendicular bisectors. Where they intersect will be the centre of rotation.

- The shortest path from a point to a line is perpendicular to the line
- A circle is the locus of a point that moves so that it is always a fixed distance from a fixed point.
- Points equidistant from two points lie on the perpendicular bisector of the line joining the two points.
- Points equidistant from two lines lie on the angle bisector.





**Strophic** songs which have the same or similar music for every verse.

**Through Composed** songs which have new music for each verse, although there may be musical ideas such as motifs which create a sense of unity across the song.

**Word Painting** illustrating the meaning of words through the use of music.

**Song Cycle** a series of songs intended to be performed one after another as a set.

### Component 3: Appraising

**Opera** a secular play set to music, fully staged. Made up musically of recitative, arias, choruses and ensembles. Orchestral accompaniment. Stylistically different from musicals, although not in other aspects.

**Recitative** Vocal music which follows speech rhythms. Often has sparse accompaniment. Tells the story

**Aria** literally song. More complex and song like than recitative, often expressing emotions and being more technically demanding.

**Ensembles** numbers written for two or more characters to sing together. Allows the characters to express different moods, and also to have dialogue.

**Choruses** numbers written for the choir or chorus to sing – usually for an SATB choir, and allow the crowd to take part in the action

**SATB** abbreviation meaning soprano, alto, tenor, bass – used to describe the voice types found in a 4 part choir

**Oratorio** sacred vocal piece based on a biblical text. Not staged, but intended to be performed in a concert performance. Usually scored for chorus and soloists with orchestra. Soloists may or may not take on the role of characters in the story. Sung in the vernacular

**Vernacular** language of the country in which a piece is composed

**Mass** a musical setting of the communion service. Sung in Latin. Texts include:

Kyrie Eleison

Gloria

Credo

Sanctus

Benedictus

Agnus Dei

May be accompanied by organ or orchestra depending on the occasion

**Requiem Mass** a setting of the mass used for funerals, which contains additional texts such as the Dies Irae.

**Lied** German word for song. Used to refer to solo songs from the late 18<sup>th</sup> and 19<sup>th</sup> centuries. Usually setting German poetry



This QR code will take you to a Spotify playlist with audio examples of many of the concepts covered on this sheet and in lessons. You will find it helpful to listen to these as you learn.












## Year 9 Spring Term 2—continued Music Theory

### Theory of Music

#### Note values

Notes	Name		Value
	Semibreve	Whole note	4 beats
	Minim	Half note	2 beats
	Crotchet	Quarter note	1 beat
	Quaver	Eighth note	$\frac{1}{2}$ beat
	Semi-quaver	Sixteenth note	$\frac{1}{4}$ beat
	2 Quavers	2 Eighth notes	1 beat
	4 Semi-quavers	4 Sixteenth notes	1 beat

### Theory of Music

#### Time Signatures

The way beats are grouped within a piece of music. Top number tells you how many, bottom number tells you what type of beat

4/4—4 crotchets per bar

3/4—3 crotchets per bar

2/4—2 crotchets per bar

6/8—2 dotted crotchets per bar

9/8—3 dotted crotchets per bar

12/8—4 dotted crotchets per bar

### Theory of Music

#### Scales

Major Scale—made up of 7 pitches. The bottom note is repeated an octave higher. Pattern of intervals is tone, tone, semitone, tone, tone, tone, semitone

Minor Scale—made up of 7 pitches. The bottom note is repeated an octave higher. In the harmonic minor, the interval pattern is tone, semitone, tone, tone, tone, augmented 2nd, semitone.

Relative major/ minor—two scales which share the same key signature

#### Intervals

Interval—the distance between two notes.

Intervals are always defined as an adjective and a number

#### Chords

Chord—two or more notes sounding together. The most common chords are triads with 3 notes.

Chords are named after their bottom or root note and by whether they are major or minor

Perfect Cadence—Chord V—I Sounds finished

Imperfect Cadence—Chord I, IV or II—V sounds unfinished

Plagal Cadence—Chord IV—I sounds finished, sometimes called Amen cadence

Interrupted Cadence—Chords V—VI—sounds unfinished. In the major scale, chord VI is minor



This QR code will take you to a Spotify playlist with audio examples of many of the concepts covered on this sheet and in lessons. You will find it helpful to listen to these as you learn.



## Characteristics of a successful entrepreneur

### 1. Curiosity

*The drive to continuously ask questions and challenge the status quo.*

### 2. Willingness to Experiment

### 3. Adaptability

*The ability to evaluate situations and remain flexible to ensure success, no matter what unexpected changes occur.*

### 4. Decisiveness

*To be successful, an entrepreneur has to make difficult decisions and stand by them.*

### 5. Self-Awareness

*An awareness of one's own strengths and weaknesses.*

### 6. Risk Tolerance

*Successful entrepreneurs are comfortable with some level of risk to reap the rewards of their efforts.*

### 7. Comfort with Failure

*Entrepreneurs must prepare themselves for, and be comfortable with, failure.*

### 8. Persistence

*Entrepreneurs see failure as an opportunity to learn and grow.*

### 9. Innovative Thinking

*Innovation often goes hand-in-hand with entrepreneurship.*

### 10. Long-Term Focus

*Entrepreneurship is a long-term endeavour, and entrepreneurs must focus on the process from beginning to end to ensure long-term success.*

## Relationship advice:

- **Be respectful** at all times
- **Communicate clearly**, share your thoughts and seek the thoughts of others without judgement
- **Safety**, keep each other safe
- **Consent**, it is the person seeking consent who is responsible for ensuring that these conditions are met. Ask, do not assume.

**Remember - the law is there to protect young people.** Naked images of under 18s are illegal, but you will not be in trouble with the police if someone has made you share an image of yourself. The law was created to protect young people, not get them into trouble. NOTE: You will be trouble if you share naked images of others who are under 18; with or without their consent.

## Useful websites:

<https://www.childline.org.uk/> 0800 1111

Brook: [www.brook.org.uk/help-advice](http://www.brook.org.uk/help-advice)




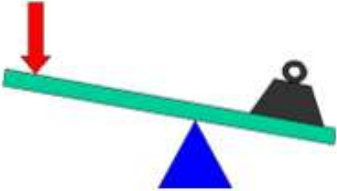
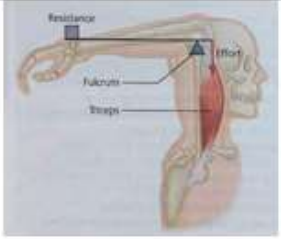


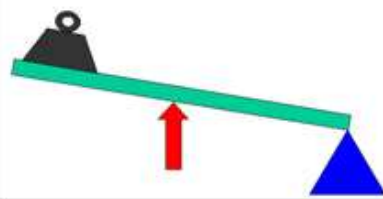
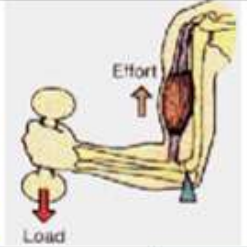
For advice on where to get help after a sexual assault,

[www.nhs.uk/live-well/sexual-health/help-after-rape-and-sexual-assault](http://www.nhs.uk/live-well/sexual-health/help-after-rape-and-sexual-assault)

You can contact Victim Support if you feel you, or someone you know, may have been a victim of a sexual offence: [www.victimsupport.org.uk](http://www.victimsupport.org.uk)



### 3.1.2.1 Lever systems, examples of their use in activity and the mechanical advantage they provide in movement KO 1 of 2

Classification of Levers		
Movement in the body occurs through the application of levers – to cause movement at a joint (fulcrum) the muscle (effort) pulls on a bone (load)		
<p>Fulcrum: The joint where the lever arm pivots. It's shown as a triangle.</p> 	<p>Load: The resistance against the pull of the muscles on the lever arm e.g. your body weight and/or something being lifted. A square is used to represent the load.</p> 	<p>Effort: The force applied by the muscles to the lever arm. Shown by an arrow pointing in the direction of the force.</p> 
1,2,3 = FLE		We use this ditto to remember which is the middle component of the lever system!
<p><b>1<sup>st</sup> Class Lever System – The Fulcrum is the middle component</b></p> <p>1st class lever: The load and effort are at opposite ends of the lever. The fulcrum is in the middle. E.g. <u>tricep extension</u> during a football throw in.</p>	<p><b>2<sup>nd</sup> Class Lever System – The Load is the middle component</b></p> <p>2nd class lever: the fulcrum and effort are at opposite ends of the lever. The load is in the middle. E.g. standing on tiptoes for a free throw in basketball.</p>	<p><b>3<sup>rd</sup> Class Lever System – The Effort is the middle component</b></p> <p>3rd class lever: the fulcrum and load are at opposite ends of the lever. The effort is in the middle. E.g. bicep curl, at the elbow joint.</p>
 	 	 
Mechanical Advantage of Levers		
1 <sup>st</sup> class = neutral MA. Can be high or low.	2 <sup>nd</sup> class = high mechanical advantage. Short load arm allows a heavier load to be lifted.	3 <sup>rd</sup> class = low mechanical advantage. Short effort arm allows for faster movement and a large range of motion.



## 3.1.2.2 Planes and axes of movement KO 2 of 2

**Plane = a line drawn through the body to split it in to two parts.**

**Axis = an imaginary straight line around which the body rotates.**

1. Sagittal plane - through the centre and splits the body into left and right. Forwards or backwards movement.

**Sagittal = SOME**



1. Transverse axis- passes through the body from left to right at the hips. Movements in a sagittal plane (forwards and backwards) take place around a transverse axis.

**Transverse = TEACHERS**



2. Frontal plane - separates the front and the back to create a front side and back side. Side to side movement.

**Frontal = FEAR**



2. Sagittal axis - passes through the body from back to front, through the belly button. Movements in a frontal plane (side to side) take place around a sagittal axis.

**Sagittal = STUDENTS**



3. Transverse plane - cuts straight through the hips to divide the top of the body from the bottom. Rotational or turning movement.

**Transverse = TALKING**



3. Longitudinal axis - passes vertically through the body from head to toe. Movements in a transverse plane (rotations) take place around a longitudinal axis.

**Longitudinal = LOUDLY**



Planes and axis are always paired together – as shown above. We remember them using **SOME TEACHERS, FEAR STUDENTS, TALKING LOUDLY**

### Sporting Movements in each plane/axis

Plane	Axis	Joint Movement	Sporting Example
Sagittal	Transverse	Flexion/Extension	Running/Jumping
Frontal	Sagittal	Abduction/Adduction	Star Jumps/Cartwheel
Transverse	Longitudinally	Rotation	Discus, Hammer Throw, pirouette



# Topic 5a - Forces

Keyword	Learn	✓
Scalar	A quantity with size (magnitude) only.	
Vector	A quantity with both size and direction. A vector quantity may be represented by an arrow. The length of the arrow represents the magnitude, and the direction of the arrow the direction of the vector quantity.	
Velocity	Speed in a given direction. Velocity is a vector.	
Displacement	Distance travelled in a given direction. Displacement is a vector.	
Force	A push or pull. Measured in newtons, N. Force is a vector.	
Contact force	Force exerted between two objects when they touch. E.g. friction, air resistance, tension and normal contact force.	
Non-contact force	Force exerted on objects when they are physically separated. E.g. gravity, electrostatic and magnetic forces.	
Centre of mass	The point at which the weight of the object can be taken to act. In diagrams, arrows representing the weight should start from this point.	
Resultant force	A single force that can replace multiple forces acting on an object.	
Free body diagram	Used to show the magnitude and direction of all the forces acting on the object.	
Work	When a force of 1 N pushes an object 1 m, in the direction of the applied force, then 1 J of work is done	
Elastic deformation	When an object is stretched, it returns to its original length after the forces are removed.	
Inelastic deformation	When an object is stretched, it does not return to its original length after the forces are removed.	
Extension	The difference between the stretched and unstretched lengths of a spring.	
Elastic potential energy	The energy stored in a stretched ( or compressed ) spring.	
Moment	The turning effect of a force. Measured in newton metres, Nm.	
Principle of moments	When a system is balanced the sum of the anti-clockwise moments equal the sum of the clockwise moments.	
Fluid	A liquid or a gas. It flows and can take the shape of the container.	

Quantity	Unit	Symbol
force	newton	N
mass	kilograms	kg
gravitational field strength	newtons per kilogram	N / kg
work	joule	J
extension	metre	m
spring constant	newtons per metre	N / m
elastic potential energy	joule	J
moment	newton metres	Nm
pressure	newtons per metre squared	$N/m^2$
density	kilograms per metre cubed	$kg/m^3$

**Pressure in fluids. Learn these two statements.**

The pressure in fluids causes a force normal (at right angles) to any surface.

A partially (or totally) submerged object experiences a greater pressure on the bottom surface than on the top surface. This creates a resultant force upwards. This force is called the upthrust.

## Equations

Weight = mass x gravitational field strength  $W = m \times g$

Work done = force x distance in the direction of the force  $W = F \times s$

Force = spring constant x extension  $F = k \times e$

Elastic potential energy =  $\frac{1}{2} \times$  spring constant  $\times$  (extension)<sup>2</sup>  $E_e = \frac{1}{2} \times k \times e^2$

Moment = Force x perpendicular distance  $M = F \times d$

Pressure =  $\frac{\text{Force normal to the surface}}{\text{area of the surface}}$   $P = \frac{F}{A}$

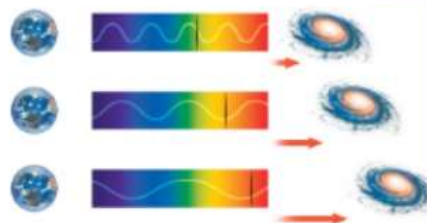
Pressure = height x density of the liquid x gravitational field strength  $P = h \times \rho \times g$

## Topic 8 – Space

Keyword	Learn	✓
Planet	A large body which orbits a star ( like the Sun).	
Moon	A natural satellite which orbits a planet.	
Solar system	The sun, eight planets, the dwarf planets and moons. Many other stars have similar planetary systems.	
Galaxy	A large group of stars.	
Milky way	The galaxy we live in.	
Nuclear fusion	The joining of light nuclei to form a heavier nucleus. Some of the mass is converted into energy.	
Velocity	Speed in a given direction.	
Orbit	Path of an object in (near) circular motion around another object.	
Red-shift	Light is moved towards the red end of the spectrum as the wavelength increases.	
Big bang theory	Theory that suggests that the universe began from a very small region that was extremely hot and dense about 13.8 billion years ago.	

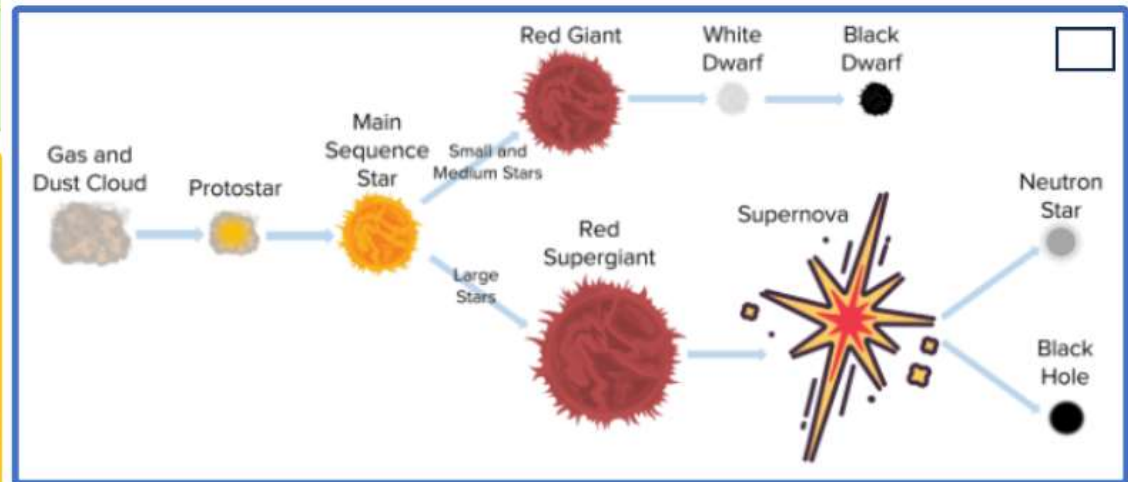
### Red-shift and the Big Bang theory

- Red shift is the observed increase in the wavelength of light due to the object moving away.
- The quicker the object moves away the greater the increase in wavelength.
- Galaxies further away are more red-shifted.
- This is evidence that the universe is expanding and supports the Big Bang theory.
- New evidence requires scientists to develop different theories.
- Since 1998, observations of supernovae suggest that distant galaxies are receding ever faster.
- New evidence has lead to new theories about Dark Mass and Dark Energy.



### Star life cycle terms – Learn the names in the correct order. Learn to draw the diagram.

Nebula	Cloud of gas and dust
Protostar	Large ball of gas which contracts to form a star
Main sequence	Releases energy by fusing hydrogen to form helium Forces are balanced; gravitational collapse balanced by expansion due to fusion energy
Red giant	A very large star which fuses helium into heavier elements
White dwarf	Collapsed red giant. Fusion stops and the star slowly cools
Supernova	Gigantic explosion caused by runaway fusion reactions in a very large star. Elements heavier than iron are produced here
Neutron star	Very dense small star made out of neutrons
Black hole	The most concentrated state of matter, from which even light cannot escape



### Equations

$$\text{orbital distance} = 2 \times \pi \times \text{orbital radius} \quad s = 2 \times \pi \times r$$

$$\text{average speed} = \frac{\text{distance}}{\text{time}} \quad v = \frac{s}{t}$$





## Christian Beliefs

Key Words			The Holy Spirit	The Holy Spirit lives within believers teaching and guiding them, illuminating the Bible so they may hear God speaking to them. He is the power of God at work in the world.		God is omnipotent	God created a perfect universe and sustains it. Evil exists because Adam and Eve chose to use their gift of free will to ignore God's instructions.	
Omnipotent	Infinitely powerful. God's power is not limited							
Omnibenevolent	All loving, merciful and kind; perfect, unlimited goodness.							
Trinity	The three persons of the Christian Godhead; Father, Son, and Holy Spirit.		The Role of the Trinity Within Creation			God is omnibenevolent	Through the sacrificial atonement of Christ, God paid the price for human sin. He 'bought the Church with His own blood.' (Acts 20:28)	
Original Sin	Also known as Adam's sin; the belief that we are all infected with Adam's sin which is passed through generations.		The Father	'In the beginning God created the heavens and the earth.' (Genesis 1:1)				
The Nature of God			The Holy Spirit	'Now the earth was formless and empty, darkness was over the surface of the deep, and the Spirit of God was hovering over the waters.' (Genesis 1:2)		God is omniscient	God knows and sees everything. He has infinite wisdom.	
Monotheism	The central belief that there is only one God who is omnipotent, omnibenevolent and omniscient.							
The Trinity	Although God is one there exists three separate and distinct beings within God – the Father, Jesus and the Holy Spirit.		Jesus	'And God said, "Let there be light," and there was light.' (Genesis 1:3) God spoke the world into existence. Jesus is described as the Word of God.		The Story of Job	Teaches that suffering does not discriminate, and that God allows suffering. Believers should trust in God's righteousness and in His omniscience. Those who remain faithful grow stronger.	
Incorporeal	God is incorporeal in that He does not have a physical body.							
Omnipresent	God can be present everywhere at the same time.		The Word	'In the beginning was the Word, and the Word was with God, and the Word was God. He was with God in the beginning. Through him all things were made; without him nothing was made that has been made. In him was life, and that life was the light of all mankind.' (John 1:1-4)		Incarnation	Literally to 'put on flesh'.	
The Apostles Creed	A concise summary of Christian beliefs about the nature of God and the core aspects of biblical teachings, such as Jesus' death, resurrection and ascension of					Incarnation of Jesus	Jesus, 'put on flesh', in order to become a perfect sacrifice for sin, having been born from a virgin, thus not carrying original sin.	
The Nicene Creed	The Nicene Creed is a more detailed summary of what the Church believes about the doctrines of the Christian faith, taking its structure from the Apostles Creed.					Why was Jesus incarnated?	He came to reconcile humans to God. Preceding Jesus' crucifixion, sin was atoned by repeatedly sacrificing animals. However, Jesus' sacrificial atonement covers sin past, present and future.	
Roles Within the Godhead (Trinity)			The Problem of Evil	The existence of evil causes a problem for belief in God because if God is omnipotent, then he would stop evil, and if He were omnibenevolent, then he would not allow people to suffer, yet evil exists! (Epicurus)				
The Father	God the Father is the Creator of the universe and the Sustainer of all life. He					The Crucifixion	Jesus was crucified at the age of 33 accused of blasphemy. However, the real purpose of	

**Los miembros de la familia – family members**

mi padre / madre	my father / mother	
mi padrastro / madrastra	my stepfather / stepmother	
mi hermano / hermana	my brother / sister	
mi hermanastro / hermanastra	my step-brother / step-sister	
primo / prima	cousin	
hijo único / hija única	only child (boy / girl)	
abuelo / abuela	grandfather / grandmother	
gemelos	twins	
tío	uncle / aunt	
bebé	baby	

**¿Cómo eres? – What do you look like?**

Soy...	I am	
Es...	He / she is	
alto / bajo	tall / short	
más alto que...	taller than...	
rubio	blonde	
moreno	dark-skinned	
pelirrojo	red-haired	

Tengo el pelo...	I have ... hair	
castaño	brown	
negro	black	
largo / corto	long / short	
Tengo los ojos...	I have ... eyes	
azules	blue	
marrones	brown	
verdes	green	
Llevo gafas	I wear glasses	

**¿A quién sigues? – Who do you follow?**

Sigo	I follow	
a artistas	artists	
a cantantes latinos	South American singers	
canales de...	channels	
cocina	cooking	
videojuegos	videogames	
mis deportistas favoritos	my favourite athletes	
videotutoriales de dibujo	art video tutorials	
vlogs de estilo de vida	lifestyle vlogs	

**¿A quién admiras? – Who do you admire**

Admiro a...	I admire	
Lo / la sigo / admiro porque	I follow / admire him / her because	
apoya a otras personas	He / she supports others	
es un buen modelo de conducta	he / she is a good role model	
es una inspiración para otros	he / she is an inspiration to others	
lucha / luchó por	he fights / fought for	
los derechos de otras personas	the rights of others	
la igualdad de oportunidades	equality of opportunity	
fue la primera persona en	he / she was the first person to	
participar en	participate in	
ganar	win	

**¿Qué es lo más importante para ti?**

Lo más importante es...	The most important thing is...	
mi familia	my family	
mi educación	my education	
mi cultura	my culture	
mis amigos	my friends	
la amistad	friendship	
mi religión / mi fe	my religion / my faith	
la paz	peace	
el amor	love	

**¿Cómo es un buen amigo? – What is a good friend like?**

Un buen amigo...	A good friend	
te comprende	understands you	
te conoce bien	knows you well	
te hace reír	makes you laugh	
te respeta	respects you	
te acepta como eres	accepts you as you are	
te ayuda cuando tienes problemas	helps you when you have problems	
te apoya en lo bueno y lo malo	supports you in the good and the bad	
te da buenos consejos	gives you good advice	
no te critica	doesn't criticise you	
es fiel	is loyal	
puede guardar un secreto	he / she can keep a secret	

**¿Cómo es tu relación con tus amigos?**

me llevo	I get on	
nos llevamos	we get on	
me peleo con	I argue with	
nos peleamos	we argue	
me divierto	I have fun	
nos divertimos mucho	we have a lot of fun	
me hace reír	he / she makes me laugh	
me conoce bien	he / she knows me well	
puedo confiar en él / ella	I can trust him / her	
siempre estamos juntos	we are always together	
casi nunca nos peleamos	we never argue	
puedo contar con él / ella	I can count on him / her	
tenemos los mismos intereses	we have the same interests	



**¿Qué piensas de las redes sociales?**

Son buenas / útiles para	They are good / useful for
compartir fotos	sharing photos
buscar información	looking for information
estar en contacto con tus amigos	being in contact with your friends
participar en la comunidad	participating in the community
expresarse	expressing yourself
chatear con...	chatting with...
Lo malo es que...	The bad thing is that...
causan	they cause
adicción / presión / acoso	addiction / pressure / bullying
problemas para dormir	problems sleeping
son una gran distracción	they are a big distraction

**¿Qué puedo hacer? – What can I do?**

Mi problema es que	My problem is that
me siento / estoy	I feel / I am
diferente / triste / solo	different / sad / alone
muy mal	very bad
no me relaciono con nadie	I don't relate to anyone
ignora todos mis mensajes	he / she ignores all my messages
es muy negativo	he / she is very negative
me peleo mucho con él / ella	I argue with him / her a lot
siempre me critica	he / she always criticises me

**Deberías...**

Deberías	You should
Podrías	You could
Es importante / necesario	It is important / necessary
limitar el tiempo en línea	to limit your time online
organizar actividades	to organise activities
apoyar a tu familia	to support your family
explicarles cómo te sientes	to explain to them how you feel
expresar tus sentimientos	to express your feelings
hablar con él cara a cara	to talk to him face to face
crear nuevas rutinas	to create new routines
tienes que ser fuerte	you have to be strong

**Describing a photo**

En la foto	In the photo
Hay	There is/are
Puedo ver	I can see
Puedes ver	You can see
A la izquierda	On the left
A la derecha	On the right
En el centro	In the centre
En el fondo	In the background
En primer plano	In the foreground
Al lado de	Next to

**Adding more detail to a photocard description**

está ...	he/she is ...
están ...	they are ...
sonriendo	smiling
corriendo	running
comiendo	eating
bebiendo	drinking
chateando	chatting
jugando	playing
en un campo	in a field
en una cocina	in a kitchen
en un salon	in a lounge
en la playa	on the beach
en el cine	in the cinema

**Ser and Estar**

Use the verb **estar** for talking about **location**.

**Estoy/Están** en el jardín.  
I am / They are in the garden.

Use the verb **ser** when talking about **physical description**.

**Soy/Es** moreno/a.  
I am / He/She is dark-haired.

**Possessive adjectives**

Most possessive adjectives have two forms, singular and plural

*-In addition, nuestro (our) and vuestro (your, plural) also have masculine and feminine forms:*

Nuestro hermano      Our brother  
Nuestras hermanas      Our sisters

	Singular	Plural
my	mi	mis
your	tu	tus
his/her/its	su	sus
our	nuestro/a	nuestros/as
your (plural)	vuestro/a	vuestros/as
their	su	sus

**Desde hace**

To say how long you have been doing something, use **desde hace** + period of time and the present tense of the verb.

*Sigo muchas canales en YouTube desde hace meses / un año.*

*I have been following lots of YouTube channels for months / a year*

Notice that **seguir** is a stem-changing verb in the present tense (*sigo, sigues, etc*)

**Personal 'a'**

Use the **personal a** when the object of the verb is a person.

*Admiro a esta persona desde hace mucho tiempo.*  
*I have admired this person for a long time.*

*Do not use it when the object is not a person.*

*Veo videotutoriales sobre cocina.*  
*I watch video tutorials about cooking*

# Timetable

[illegible]