



Trinity Academy Grammar

Year 9 (R)

Knowledge Organiser

Term 1

Your subjects are in alphabetical order.

1 – Definitions

observational drawing: drawing what you see in front of you as realistically as possible

tone: Tone describes how light or how dark something is.

highlight: part of the object on which the light is strongest

shadow: darkest areas on a picture.

gradient: smooth transition from light to dark tone or from one colour to another



Tone



Gradient

2 – Artist focus: Ben Rothery

Ben Rothery is an illustrator who lives in London.

He creates very delicate illustrations of insects and animals inspired by his love of nature.

He uses mark making to show detailed texture in his work. This includes stippling to show tone and fine detail.

He works slowly and carefully in pencil and colours his work after completing the drawing.

He wants to show us the beauty of the natural world and details we might not otherwise see.



3 – Pencil techniques

texture: the way something feels to the touch. In art we use mark making to give and impression of texture

mark making: the different lines, dots, marks and patterns we create in an artwork

hatching: lines are drawn in one direction.

cross hatching: lines are drawn in two or more directions.

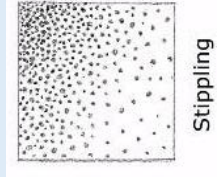
stippling: Dots which are close together or far apart.



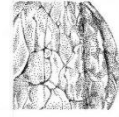
Hatching



Cross-hatching



Stippling



Texture and mark making

4 - Definitions

symmetry: when something is made up of identical parts facing each other.

proportions: the size relationships between different parts. For instance the height compared to the width.

pattern: a design that is created by repeating a shape. It can be a design on a fabric or a natural pattern, such as the markings on an animal's fur.

1 – Cyber Security

Key Vocabulary

Cyber security: to protect systems, networks, programs, devices and data from cyber attacks

Data: is facts and figures/information

Customer: a person who buys goods or services

Privacy policy: the types of information collected by the website or app

Data theft: is the act of stealing information stored on corporate databases, devices, and servers

Why is customer data valuable to businesses: Data can be used to help build a profile of the customer and therefore convert the data into information
Internet bots - are automated programs that perform tasks repeatedly

3 – Hacking

Key Vocabulary

Hacking: gaining unauthorised access to or control of a computer system

Ethical hacking: is the exploitation of an IT system with the permission of its owner to determine its vulnerabilities and weak points

Script kiddies: are hackers (not necessarily kids) who use tools downloaded from the internet that allow them to hack with little technical knowledge

Distributed denial of service attack (DDoS): floods a server with internet traffic to prevent users from accessing connected online services and sites

2 – Cyber criminals

Key Vocabulary

Social engineering: is a set of methods used by cybercriminals to deceive individuals into handing over information that they can use for fraudulent purposes

Shouldering: is an attack designed to steal a victim's password or other sensitive data

Phishing: a **phishing attack** is an attack in which the victim receives an email disguised to look as if it has come from a reputable source, in order to trick them into giving up valuable data

Blagging: (also known as **pretexting**) is an attack in which the perpetrator invents a scenario in order to convince the victim to give them data or money

4 – Malware

Key Vocabulary

Malware: software designed with malicious intent.

Viruses: a malicious form of **self-replicating** software ran on systems

Worms: spread through the network and use the system's resources.

Ransomware: encrypts files preventing the user from accessing files

Trojan: appears to perform a useful function (such as a game) but unbeknown to the user it also performs malicious actions

Spyware: is unwanted software that monitors and gathers information on a person and how they use their computer

Adware: infects a computer and causes it to download or display malicious advertisements or pop-ups when the victim is online

1 – Who is John Godber?

- John Godber is an English dramatist—primarily known for his observational comedies
- Godber was born in 1956, in Upton, near Pontefract, West Yorkshire
- He trained as a teacher of drama at Bretton Hall College
- He became the artistic director of Hull Truck Theatre Company in 1984
- A 1993 survey for *Plays and Players* magazine cited Godber as the third most performed playwright in the UK, after Shakespeare and Alan Ayckbourn
- His plays are performed all over the world
- In 2011, Godber became creative director at Theatre Royal Wakefield and set up The John Godber Company as its resident company.

2 – The Playwright

- **Playwrights**, often known as writers, dramatists, or scriptwriters, write the story for the theatrical productions.
- The story or script is written in a specific format. The playwright writes the dialogue of a character next to, or under, their name. They also include descriptions of settings, and stage directions for the actors and actresses to take to production.
- **Playwrights** have an extremely difficult job. They must not only write a good script but also must find a producer willing to finance the production. In some instances, a producer may have an idea that they want developed, and will hire a playwright to write a suitable script.

3 - Theatrical Skills

Key Vocabulary

- **direct address**: when a character speaks directly to the audience
- **stereotype**: a fixed general image or set of characteristics
- **improvisation**: a piece of drama that is made up on the spot by performers without using any prepared material
- **flashback**: a scene which shows events from before the main action of the play
- **mime**: the use of movements, gestures and facial expressions to communicate an idea without words
- **marking the moment**: a technique that draws the audience's attention to an important moment

4 – Godber's Style

Key Vocabulary

- **fast pace**: moving or developing very quickly
- **slick**: something done in a smooth and efficient way
- **comedy**: a play characterised by its humorous or satirical tone and its depiction of amusing people or incidents
- **synchronised**: to cause two or more things to happen at the same time and speed as each other
- **movement**: where (and how) an actor moves on stage, what this communicates to the audience, and the effect this has upon the drama

1 – Context

- **colonialism:** when one nation (e.g. Britain) takes control over another country and its population, putting in its own language and cultures
- **Nigeria** was a **British colony** from 1914 to 1960.
- **The Igbo people** are one of the main ethnic groups in Nigeria.
- After Nigerian independence, a predominantly Igbo region declared itself the independent Republic of Biafra, and civil war soon followed.
- **The Biafran Civil War** lasted until January 1970, when the Biafran forces surrendered. Attempts to make peace were unsuccessful, and revolutions and killings continued. There was lots of **political unrest** in the country at this time.
- There was also **religious conflict** as some people believed in Catholicism whilst others had the more traditional Igbo religion.

3 – Vocabulary

- patriarchal society:** a society controlled by men in which they use their power to their own advantage.
- corrupt:** something immoral/dishonest e.g. a corrupt government
- coup:** similar to a rebellion, when a group of people take over control and seize power in a country often done via the military (army)
- oppression:** the cruel or unfair treatment of a group of people
- censorship:** banning words, images, or ideas that are offensive or that a government don't want their citizens to promote
- fundamentalism:** belief in the strict literal implementation of a religion
- internal conflict:** a struggle within yourself e.g. emotionally
- coming of age:** growing up and maturing, the main theme/idea within Bildungsroman novels

2 – Terminology

Bildungsroman novel: a story about a character who grows up throughout

symbolism: an image or a word that represents other ideas, objects, or relationships e.g. symbolism of the purple hibiscus (flower) in the title symbolises freedom

dialogue: speech between characters

foreshadowing: a hint the writer makes that something that will happen in the future

allusion: a reference to a person, place, thing or idea of historical, cultural, literary or political significance **outside** of the text

allegory: a story with a deeper hidden meaning, where characters/ideas can often represent something else

analepsis: flashing back to an earlier point in the story

“See, the purple hibiscuses are about to bloom,” Jaja said.’



4 – Grammar: Dialogue and Rules of Speech

- Punctuation is used in **direct speech** to separate **spoken words**, or **dialogue**, from the rest of a story.
- The words spoken by a character sit inside **speech marks**: e.g. “Jaja, you did not go to communion,” Papa said quietly.
- A **new speaker** in conversation needs a **new line**.
- Each **new line** of direct speech should also start with a **capital letter**:

“They brought the cashew juice this afternoon. It tastes good. I am sure it will sell,” Mama finally said.

“Ask that girl to bring it,” Papa said.

- Each section of direct speech should end with a **punctuation mark**, e.g. full stop, question mark or exclamation mark:

“A drizzle is coming. I did not want them to get wet.” She ran her hand across my uniform.

1 – Key Dates

Date	French name	English name
1 janvier	le Jour de l'An	New Year's Day
6 janvier	la Fête des Rois	Epiphany
14 février	la Saint-Valentin	Valentine's Day
mars/avril	les Pâques	Easter
1 avril	le Poisson d'avril	April Fool's day
1 mai	la Fête du Travail	May day
mai	Aïd el-Fitr	Eid al-Fitr
juin	la Fête des Mères	Mother's Day
juillet	Aïd el-Kebir	Eid al-Adha
14 juillet	la Fête Nationale	Bastille Day
1 novembre	la Toussaint	All Saints' Day
24 décembre	la Veille de Noël	Christmas Eve
25 décembre	le Noël	Christmas
31 décembre	la Saint-Sylvestre	New Year's Eve

2 – Opinions and Reasons

j'adore	I love	amusant/e	fun
j'aime	I like	difficile	difficult
je déteste	I hate	divertissant/e	entertaining
je n'aime pas	I don't like	ennuyeux/euse	boring
j'aime bien	I quite like	effrayant/e	scary
je préfère	I prefer	émouvant/e	moving
		énervant/e	annoying
parce que c'est	because it is	fatigant/e	tiring
car c'est	because it is	génial/e	great
ma fête préférée, c'est...		idiot/e	stupid
my favourite celebration is...		nul/le	rubbish
		passionnant/e	exciting
Key phonics:		à mon avis	in my opinion
oi = 'wah'		je pense que	I think that
ê = 'eh'		je crois que	I believe that
er = 'ay'		selon moi	according to me

3 – Key vocabulary

célébrer	to celebrate	l'église	church
chercher	to look for	la dinde	turkey
donner	to give	le feu d'artifice	firework
fêter	to celebrate	le repas	meal
manger	to eat	le cadeau	present
regarder	to watch	la fête	celebration
		la mosquée	mosque
recevoir	to receive	le défilé	parade
se déguiser	to dress up	le jeu	game
dîner	to dine	le jour férié	bank holiday
ouvrir	to open	la messe	Mass
		la réunion	meeting
chrétien/ne	Christian		
juif/juive	Jewish		
musulman/e	Muslim		
religieux/euse	religious		

4 – Present Tense Verbs

To **conjugate** verbs in the present tense we remove the –infinitive ending and add the correct ending to match the person doing that action:

Pronoun	ER verb ending	Example (donner)
je	e	je donne
tu	es	tu donnes
il/elle/on	e	il/elle/on donne
nous	ons	nous donnons
vous	ez	vous donnez
ils/elles	ent	ils/elles donnent

Verbs ending in IR and RE follow different patterns e.g.

finir → je finis = I finish / I am finishing
attendre → j'attends = I wait / I am waiting

5 – Near Future Tense

aller (in the present tense) + **infinitive verb**

je **vais fêter** le Noël = I am going to celebrate Christmas

je **ne vais pas lire** un livre = I'm **not** going to read a book

You can use a range of other sentence starters to talk about the future. These need to be followed by an **infinitive verb** too.

j'espère **ouvrir** I hope to open
j'ai l'intention de **donner** I intend to give
je voudrais **célébrer** I would like to celebrate

We use **ce sera** (it will be) to give opinions in the future.

6 – Comparatives & Superlatives

Comparatives compare two things to each other. In French you need to wrap your comparative around an adjective.

plus...que more ... than
moins...que less ... than
aussi...que as ... as

Superlatives are used to say **the most** or **the least** with an adjective.

le/la/les plus ... the most ...
le/la/les moins ... the least ...

Irregulars:
meilleur/e que the best
pire que - worse than
le/la meilleur/e
le/la pire – the worst

1 – Evidence of Climate Change

Key Vocabulary:

climate : average weather conditions over the course of a year

- Climate change has occurred for the past 800,000 years, where we have reliable data.
- To see that climate change was a natural event we look at CO₂ , global temperature and sea levels.
- However, to see current climate change we use satellite images, photos and atmospheric data.

2 – Causes of Climate Change

Key Vocabulary:

human: is something caused by ourselves

natural: where we have no control over the cause

- Climate change is a natural event which has been accelerated due to human activity.
- Human causes of climate change include burning fossil fuels, deforestation, and farming.
- Natural causes of climate change are due to changes in the Earth's orbit of the Sun, solar activity and volcanic eruptions.

3 – Impacts on the UK

Key Vocabulary:

extreme weather: are events that are unusual due to their severity

- The weather in 2020 was at record levels for rainfall in February and record dry days in April.
- One of the major impacts of climate change is the melting of the polar ice caps at the poles.
- Rising sea levels will claim areas of land such as fertile farmland and urban areas such as Liverpool. This is due to the UK being an island.

4 – Impacts on Asia

Key Vocabulary:

uninhabitable: is a place where humans cannot live

scarcity: is where there is a lack of a resource

- Russia is impacted by the melting of the permafrost.
- The Himalayan Glaciers will melt which results in an increase in **flooding**.
- In addition, the glaciers are a water source for **1.9 billion people** which is disappearing.
- Food and water will become scarcer in the ME which will increase conflict between nations.

5 – Impacts on Africa

Key Vocabulary:

arid: a hot and dry area

desertification: is the increased size of a desert

- The Western Sahel Region of Africa is being swallowed up by the Sahara Desert due to a lack of rainfall and deforestation.
- Farmland is lost by the desert growing and there are less opportunities for humans in the region.
- 86% of Burkina Faso's GDP is at risk due to water scarcity and disappearance of farmland.

6 – What can you do?

Key Vocabulary:

adapting: is making something suitable for a new use or purpose

carbon footprint: is the amount of carbon used in everyday life

- To reduce our carbon footprint we need to walk, cycle and use public transport more.
- We need to eat food which is locally produced and reduce the amount of animal based products.
- We also need to use less electricity and recycle.

1 – Women

Aryan: a Germanic race the Nazis believed was superior to others

- During the 1920s, German women had enjoyed more liberal lives e.g. drinking and smoking.
- In the 1930s, Nazism said that women should return to traditional roles. They encouraged the 3 Ks (Kinder (children), Küche (kitchen), Kirche (church)). Women were expected to have several Aryan children.
- Women were to wear plain clothing, no make-up and have their hair tied up.
- In 1933, Hitler gave newlyweds 1,000 marks, allowing them to keep 250 marks for every child they had.
- The Motherhood Cross was given to women who had children.

4 – Terror Tactics

terror: keeping someone in a state of fear

- The Nazis also frightened people into supporting them.
- The SS (Schutzstaffel) was Hitler's private army. He used them as an execution squad on his opponents and as guards in concentration camps.
- The Gestapo were the secret police. Over 150,000 people reported anti-Nazi behaviour to them.
- The Gestapo did not wear uniform, so Germans didn't know who / where the Gestapo were.
- Their tactics included murder and torture.
- Heinrich Himmler was the head of the SS and police.
- 'People's Courts' charged the Nazi's enemies with treason without a trial.

2 – Children

propaganda: methods to influence how someone thinks

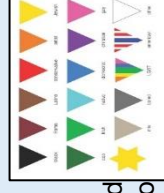
eugenics: the study of reproduction

- The Nazis believed children were important. He influenced them through: school, propaganda, and youth groups.
- Textbooks, especially history and biology, were written to promote Germany, Aryans and anti-Semitism.
- Eugenics was taught in all schools.
- Boys mostly learnt history, eugenics and PE.
- They attended the Hitler Youth where they were prepared for the army.
- Girls mostly learnt housework, eugenics and PE.
- They attended the League of German Maidens where they were prepared for motherhood.

5 – Minority groups

minority: a group of people different than the main group

- Hitler believed in the superiority of the Aryan Race.
- The Nazis hated particular 'undesirable' groups such as: Jews, Gypsies, homosexuals, disabled people, Poles, and political opponents.
- Many of these groups were sterilised to stop them having children.
- Between 1939 and 1941 over 100,000 disabled Germans were killed in secret, without the consent of their families.
- Millions were sent to concentration camps. 85% of Germany's Gypsies died in camps.
- These groups wore different coloured triangles to show other prisoners who they were.



3 – Nazi policies

policy: a set of ideas or plans

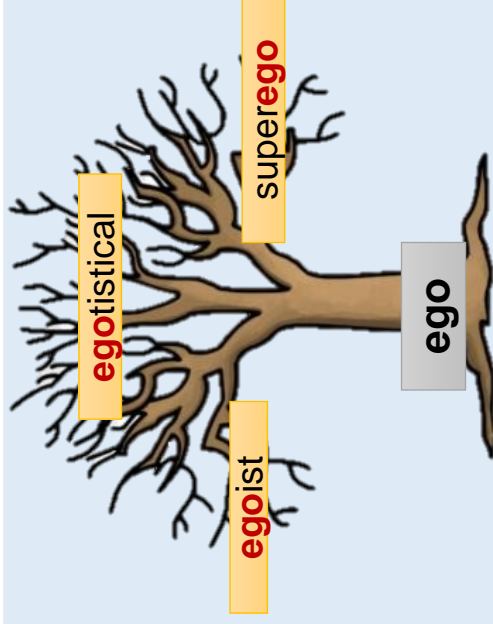
- Not all Germans were Nazis. The Nazis tried to keep these people under control, using positive and negative methods.
- From 1933 Hitler promised 'bread and work', and full employment. He used unemployed men between 18 and 25 years old to build the 1936 Berlin Olympic Stadium.
- From 1935 onwards, men were conscripted into the army.
- He wanted Germany to be self-sufficient – autarky.
- The Nazis introduced a programme called 'Strength Through Joy' – this rewarded workers with theatre trips, picnics and holidays.
- Hitler designed the Volkswagen (the people's car) for German workers to buy (although car production stopped when the Second World War started in 1939).

6 – Opposition

oppose: to go against someone/something

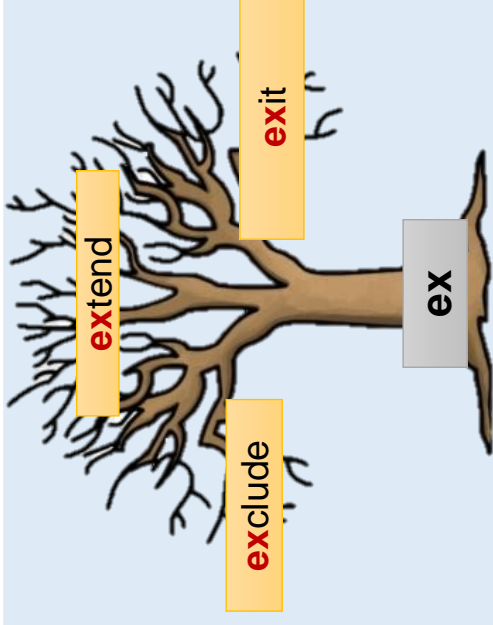
- There were a few individuals and groups who openly opposed Hitler and his policies. The majority ended up in concentration camps, while many were killed.
- Some Catholic priests opposed Hitler.
- Many Protestant pastors, led by Martin Niemöller, formed the Confessional Church in opposition to Hitler's Reich Church.
- The Swing Kids challenged the Nazi image of youth by growing their hair and wearing fashionable clothes and listening to Swing music.
- The White Rose published anti-Nazi leaflets but were discovered and executed in 1943.
- The Edelweiss Pirates painted anti-Nazi slogans, sheltered deserters and beat up Nazi officials.

Week 1 – ego



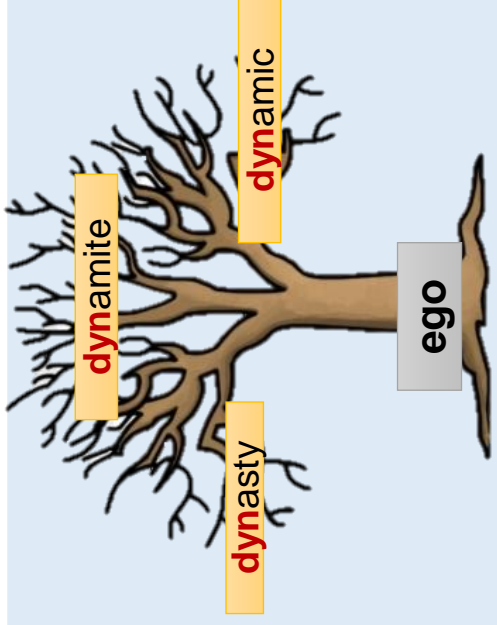
ego means 'I' or 'myself'

Week 2 – ex



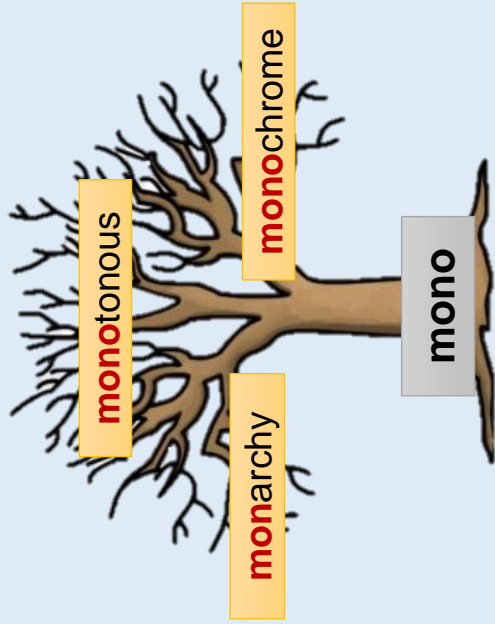
ex means 'out of' or 'from'

Week 3 - dyn



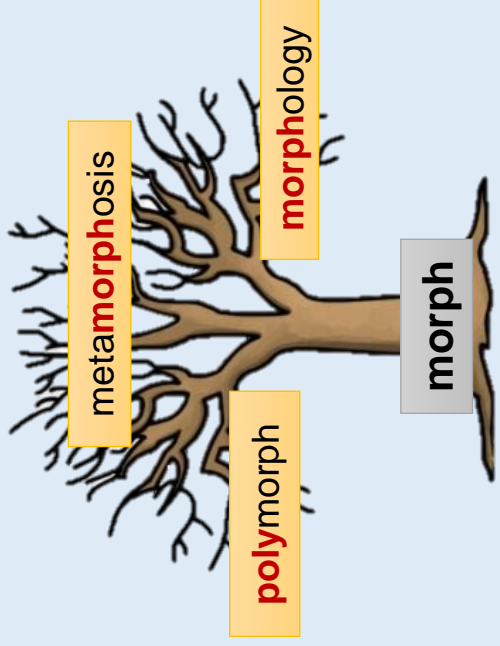
dyn means 'power'

Week 4 – mono



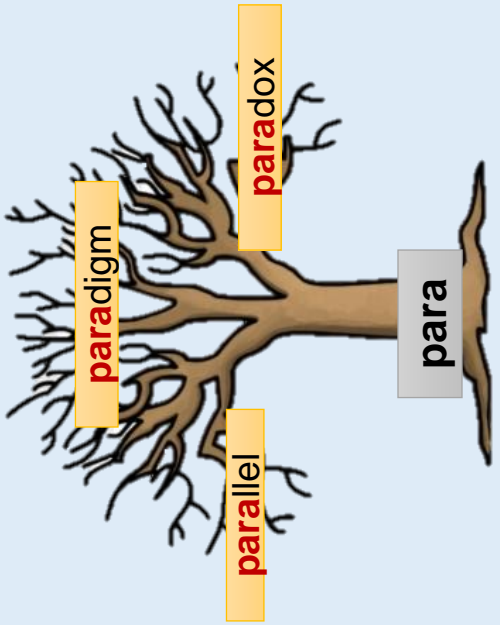
mono means 'one', 'single'

Week 5 – morph



morph means 'shape' or 'form'

Week 6 - para



para means 'beside' or 'alongside'

Those topics highlighted in yellow also appear in Science, Geography or Technology

1 – Equations and Inequalities 1

equation: a statement that two things are equal, it contains expressions on both sides of the equal sign.

e.g. $5 = 2x + 1$

solution: the answer when you solve an equation

Inverse: the opposite

symbols to remember:

- \neq not equal
- $<$ less than
- $>$ more than
- \leq less than or equal to
- \geq greater than or equal to

2 – Equations and Inequalities 2

formula: a mathematical rule expressed with symbols
e.g. $f = ma$

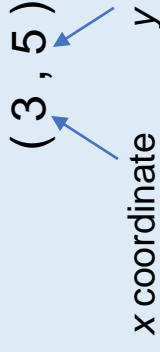
The plural of formula is formulae

substitute: where we replace a letter with a number.

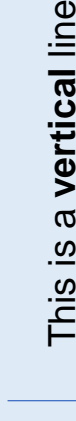
evaluate: to calculate the value of.

e.g. if $y = 7$ evaluate $5y$. Answer $5 \times 7 = 35$

3 – Coordinates



— This is a **horizontal** line

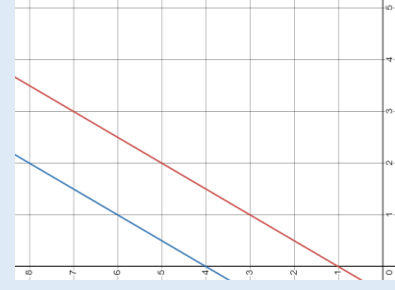


Origin— This is usually the point $(0,0)$

4 – Linear graphs

y-intercept: Where a line crosses the y – axis

linear graph: produces a continuous straight line



non-linear graph: does not produce a continuous straight line

gradient: how steep a line is

parallel lines have the same **gradient**

5 – Types of Numbers

factor: numbers which can be multiplied together to make another number.

3 and 2 are factors of 6 because $3 \times 2 = 6$

multiples: a number in the times table of another number

4, 8, 12, 16 and 20 are multiples of 4

prime numbers: have exactly 2 factors – itself and one

2, 3, 5, 7, 11, 13, 17, 19

even numbers – 2, 4, 6, 8, 10, 12

odd numbers – 1, 3, 5, 7, 9, 11, 13

6 – 7 Times Tables

$1 \times 7 = 7$

$7 \times 7 = 49$

$2 \times 7 = 14$

$8 \times 7 = 56$

$3 \times 7 = 21$

$9 \times 7 = 63$

$4 \times 7 = 28$

$10 \times 7 = 70$

$5 \times 7 = 35$

$11 \times 7 = 77$

$6 \times 7 = 42$

$12 \times 7 = 84$

1 – The Elements

Key Vocabulary

Dynamics: the term used for the volume

Rhythm: different note lengths played in a chain

Texture: the different layers of sound

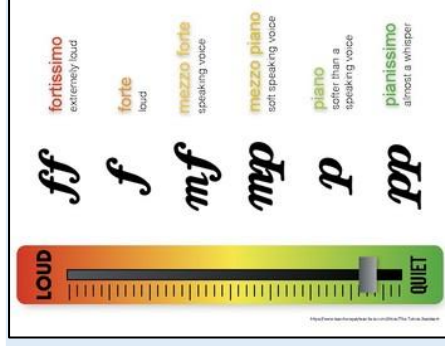
Structure: how music is put together

Melody: the main tune

Instrumentation: the instruments used

Tempo: the speed

Harmony: several notes played together.



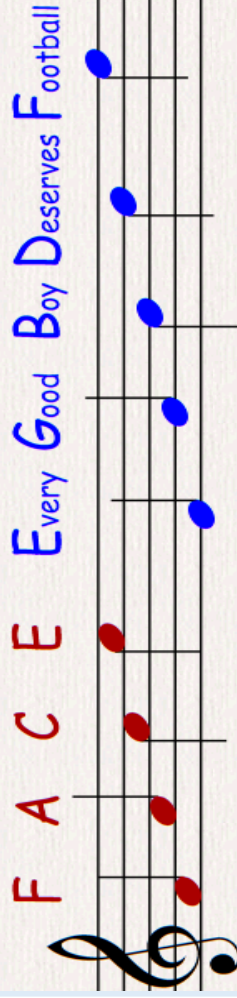
2 – Rhythm

NOTE NAME	NOTE SYMBOL	NOTE LENGTH
semibreve		4 beats
minim		2 beats
crotchet		1 beat
quaver		½ beat
semiquaver		¼ beat

3 – Pitch

Key Vocabulary

Stave: The five lines we write music notes on



4 – The Music Industry

Key Vocabulary

Artist: a person who creates, writes and performs music

Promoter: a person who organises a gig/concert for an artist

Band Manager: a person who communicates with the promoter and artist

Sound/Lighting Technician: a person who works at a venue and controls the sound and the lighting for the concert

Producer: a person who records, mixes and releases music for an artist

Venue: a space that a gig/concert takes place in

Music Tour: a sequence of gigs/concerts that happen during a specific time

1 – Set up, grip, stance and rally

Key Vocabulary

reaction time: the length of time a person takes to respond

Having the wrong stance to lead to slower reaction times.

stance: the position you stand in ready to rally.

- Feet shoulder-width apart
- Low, knees bent
- Balls of feet
- Ready, anticipation

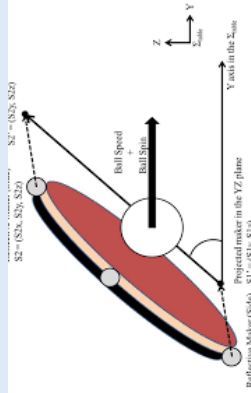


4 – Forehand

Key Vocabulary

top spin: hitting back and upper part of the ball, causing it to move faster through the air.

To generate **topspin** on a **forehand shot**: Skim the ball upwards, pocket to chin



2 – Backhand

Key Vocabulary

Adding spin to the shot:

top spin: hitting back and upper part of the ball, causing it to move faster through the air

backspin: hitting the back and underneath of the ball, causing the ball to slow down and not reach your opponent as quick

sidespin: hitting around the side of the ball, causing deception and altered flight pathway.

5 – Tactics to overcome an opponent

Key Vocabulary

chop: playing a backspin shot into the middle of the table to prevent your opponent attacking, as the ball slows down.

crossover: playing the ball into the point where your opponent has to decide to play either a backhand or forehand shot.

amalgamating: combining different shots together within a rally to overcome an opponent.

3 – Serve

Key Vocabulary

backhand serve:

- Stand with knees slightly bent
- Slightly side on to the table (to allow for backswing)
- As the ball drops strike the ball with the bat angled towards the table.

forehand serve:

- Face sideways with shoulder pointing towards target
- As the ball drops strike the ball with the bat angled towards the table.
- Finish with bat pointed towards opponent

6 – Rules and regulations

Key Vocabulary

let: when serving, if the ball hits the net and goes over, hitting the opponents side, the serve must be repeated.

volley rule:

The ball cannot be hit before it has bounced, would result in a point lost.

If the game is 10-10: win by 2 clear points i.e. 13-11

If the game is 20-20: next point wins

1 – The life of Siddhartha Gotama

- Before he became known as the **Buddha**, **Siddhartha Gotama** was a Prince who lived in **Lumbini** (in modern Nepal) around 563 BCE. His father wanted him to be a great king and he shielded him from seeing any form of **suffering** in the world. Siddhartha never left the walls of the palace. He never witnessed poverty, pain, illness or even old age.
- The king was concerned that if Siddhartha left the palace, he would dedicate his life to trying to solve all problems that cause suffering.
- Siddhartha was **wise** and he knew that there was more to the world and he asked his friend to help him escape. When Siddhartha left the palace, he saw **four sights** that had a huge impact on his life:
 - old age, illness, death and a holy man.

3 – The Eightfold Path

The Buddha believed that only the **Middle Way** could help lead you to **Nirvana**. The best way to find the Middle Way is to follow the **eightfold path**. This is a guide for living in the right way with the right attitudes:

1. **Right understanding** – seeing that there is suffering in the world
2. **Right attitude** – committing to developing the right mental attitude
3. **Right speech** – speak in a positive, truthful and helpful way
4. **Right action** – be honest, content & faithful
5. **Right livelihood** – earn a living in an honest way
6. **Right effort** – work hard
7. **Right mindfulness** – be aware of your thoughts and their consequences
8. **Right contemplation** – concentrate the mind, get rid of bad thoughts

2 – The Four Noble Truths

The first step to Enlightenment is to follow the **4 noble truths**:

1. **Illness** – nothing is perfect and all lives involves suffering. Everything in the world is **dukkha**.
2. **Craving** – people are selfish and they are always wanting more. This craving causes **dukkha**.
3. **A cure exists** – if people are satisfied, and understand the world, then dukkha will end. This is not easy, but it is possible.
4. **Cure** – the way to stop craving more is to follow the **Middle Way**. The **eightfold path** will help reach this point.

The Buddha said “I teach suffering, its origin, cessation and path”.

4 – Buddhist Worship

- **Worship** is about paying respect to someone or something. Buddhists do not believe in a god, so their worship often takes a different form.
- Some Buddhists pay respect to the Buddha when they worship. He founded the faith and for that they are very thankful.
- Some acts of Buddhist worship take place at a **shrine** and include chanting, making offerings and listening to scriptures being read.
- Many Buddhists perform **puja**, which is worship at home with a personal **shrine**.
- Buddhists remove their shoes before an act of worship as a mark of respect. They sometimes bow their heads towards a **Buddharupa**, with their hands help together in a prayer like position. This is called **anjali mudda**.

B1 – Genetic Variation and Evolution

double helix: two intertwined structures that form the spiral shape of DNA

gene: a short section of DNA that codes for a characteristic

mutation: a random change in the sequence of DNA

adaptation: a characteristic which increases and organism's chance of survival and reproduction

natural selection: the process by which individuals, who are better adapted to survive, increase their chance of reproducing

variation: differences between individuals

B2 – Speciation and Biodiversity

species: a group of organisms that can successfully interbreed to produce fertile offspring

extinction: when there are no more individuals left of a particular species

speciation: the formation of a new species due to a population becoming isolated and natural selection occurring over a long period of time

biodiversity: the variety and variability of life on Earth or within a particular region

gene bank: a collection of genetic material from seeds, plants or animals that are preserved

evolution: the gradual change of characteristics in a species through the process of natural selection

C1 – Acids & Alkalis

acid: a substance with a pH below (<) 7

base: a substance with pH more than (>) 7 that reacts with an acid to form salt and water

alkali: a water soluble substance with pH > 7

neutralisation: the reaction between an acid and an alkali which results in a neutral pH = 7

pH scale: a scale ranging from 0-14 which

determines how acidic or alkaline a substance is

indicator: a substance that changes colour when added to an acid or an alkali

ion: a charged particle (e.g. H⁺ or OH⁻)

C2 – Naming & Using Salts

salt: the substance formed when an acid and alkali react

acid + alkali → salt + water

e.g. **nitric** + **sodium** → **sodium** + water

acid hydroxide **nitrate**

Acid Name	Salt Name
Hydrochloric acid	Metal chloride
Phosphoric acid	Metal phosphate
Nitric acid	Metal nitrate
Sulfuric acid	Metal sulfate

P1 – Properties of Light

transverse wave: oscillations are perpendicular to the direction of wave travel

reflection: the return of a wave from a surface

refraction: the change in direction of a wave passing from one medium to another with a different density

absorption: the transfer of energy of a wave to matter as the wave passes through

incident ray: the ray of light travelling towards a surface

reflected ray: the ray of light travelling away from the surface due to the process of reflection

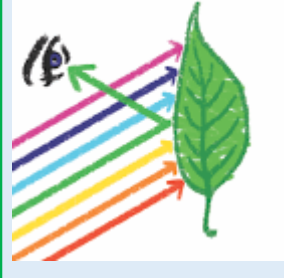
P2 – Lenses & Filters

convex lens: a piece of transparent material with curved sides to refract and focus light

convex: an outline or surface that curves outwards

prism: a 3D shape that has straight edges

white light: contains all the colours



The object absorbs all the colours of the spectrum except for green which is reflected. Therefore, the object appears to be green.

1: The Role of the Environmental Health Officer

Environmental health officers make sure people's surroundings are safe, healthy and hygienic.

Salary £25,000 to £60,000 average per year	Hours 35-40 per week
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- Inspecting business for food safety standards
- Follow up complaints
- Follow up outbreaks of food poisoning
- Collecting samples for testing
- Giving evidence in prosecutions
- Maintaining evidence
- Submitting reports
- Issue food hygiene rating



2: High Risk Foods

Foods high in protein and foods high in moisture are described as high risk

Examples of high risk foods are :-

- Eggs
- Meat, poultry and other meat products
- Milk and dairy products
- Fish and Shellfish
- Cooked rice
- Stocks, sauces, gravies and soups
- Foods which are handled and those which are reheated-

However, preserved foods, or those with high concentrations of vinegar, salt or sugar, are low-risk

3: Food Handlers

Rules for food handlers:

- Have regular training in food safety
- Be dressed in clean 'whites' or other uniform
- Have hair tied back (and ideally wear a hat)
- Have short, clean nails – no nail varnish or jewellery
- Be in good health (no upset stomachs)
- Have 'good' habits, e.g. no coughing or sneezing over food
- Wash their hands after handling raw meat, after blowing nose, after going to the toilet etc
- Cuts should be covered with a blue plaster

1 – The Risks of Gang Culture

Key Vocabulary

gang: an organized group of criminals

- A gang is different to a social group of friends. Gangs are linked to unsocial behaviour and organised crime.
- Gangs can sometimes look like an appealing option to young people, especially the social side of being with people of a similar age on a regular basis.
- There are many long term issues linked to being part of a gang. These include:
 - Poor exam grades linked to poor attendance at school
 - Criminal records which stay with you forever
 - Lack of friends outside of the gang
 - Poor reputation in the local community

2 – Laws on Knives in the UK

Key Vocabulary

knife crime: criminal offences committed using a knife as a weapon

- It is against the law to use any knife in a threatening way.
- It is illegal to carry a knife in public without good reason.
- Any adult charged with carrying a knife will automatically go to court.
- Anyone aged between 10-17 will be referred to the Youth Offending Team.
- Many young people who carry knives have been asked to by other people (maybe in gangs or criminal groups). This is still against the law – even if you have been told to do it.
- Carrying a knife as a form of defence is still against the law. Most people who are hurt by knives are often carrying a knife themselves.

3 – Laws on Drugs in the UK

Key Vocabulary

drugs: a medicine or other substance which has a physiological effect when ingested or otherwise introduced into the body

- Illegal drugs in the UK are divided into 3 categories:
 - Class A drugs are classed as the most dangerous and carry the more severe sanctions. These drugs include cocaine, ecstasy, heroin.
 - Class B drugs include ketamine and cannabis.
 - Class C drugs include anabolic steroids and khat.
- You can be charged with a crime if you are found with drugs in your possession, regardless of whether you intended to use them or not.

4 – Risks of Drug Addiction

Key Vocabulary

addiction: the fact or condition of being addicted to a particular substance or activity

- There are physical and mental side effects if you have experienced drug addiction.
- Long term physical side effects can include: liver failure, kidney damage, increased blood pressure.
- Long term mental side effects can include: depression, anxiety, paranoia,
- People who have experienced drug addiction may also struggle to find and keep a job, which might result in a lack of income.
- There are many sources of support for people with drug addiction. Your GP (doctor) is the best place to start.



Look

Look at the information carefully.

Read it three times.

It may help to say it as you read it.



Cover

Cover it with your hand or a piece of paper.



Write

Write it out, from memory.



Check

Check what you have written matches the information exactly.

Have you got it correct?

If so, tick your work to show it is correct.



Correct

If it doesn't match exactly, use your purple pen to correct it.

Repeat the steps above.

If you get 100% correct, move on to the next piece of information.

Flash Cards

If you choose to make flashcards to help you revise, don't forget our top tips.

1. On one side of the card, write the question clearly
2. On the other side of the card, write the answer you want to remember
3. Only put one question on each flashcard
4. Test yourself regularly, until you can't get the answers wrong



Scan the QR code to access a short video on how to use your flashcards more effectively.