

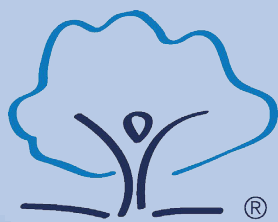
Year 8

Knowledge Organiser

Term 1 and 2



North Oxfordshire Academy
The best in everyone™
Part of United Learning



North Oxfordshire Academy

The best in everyone™

Part of United Learning

North Oxfordshire Academy Values

We believe that, of the United Learning Values, the three that best define North Oxfordshire Academy are **Respect, Ambition and Determination**. Our mission, our vision and our values have been arrived at after consultation with staff and students at North Oxfordshire Academy.

Our Mission:

We exist to provide our students with the best life chances in Oxfordshire.

Our Vision:

To be an academy where students receive a world class education in character and academics leading to happiness and fulfilment in life.

Respect

- Respect for others
- Respect for ourselves
- Respect for our environment

Ambition

- Aiming to achieve the highest possible outcome
- Aspiring to achieve the best possible jobs, college and university places
- Offering leadership opportunities for all

Determination

- Not giving up during adversity
- Embracing the challenges of learning at a higher level
- Support each other to achieve

Student Equipment

Ready to Learn?

- | | |
|-----------------------|--|
| • 2 pens (black/blue) | • Non-permanent whiteboard pen |
| • 1 Green pen | • Knowledge Organiser – Given by school |
| • 1 pencil | • 1 scientific calculator (Must be a Casio FX85) |
| • 1 rubber | • Home Learning book – Given by school |
| • 1 ruler | • A school bag |

Home Learning Book

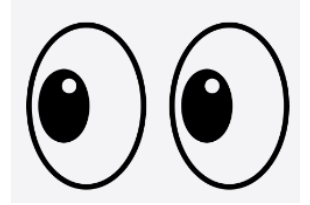
- The Home Learning book should be in the student's bag at all times
- Clearly date and title (including subject title) each piece of home learning in the Home Learning book
- Underline with a ruler after each completed piece.
- Use both sides of the page and don't leave empty spaces.
- The back pages of the Home Learning book are to be used as your reading log

Using Knowledge Organisers to self-quiz

Your child will be issued with a Knowledge Organiser each term with all subjects in one booklet. Subject Knowledge Organisers can also be found on the academy website.

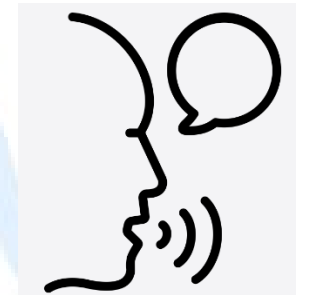
LOOK

- Read the definition of the first key word in your head.



SAY

- Cover it up and say in back to yourself, repeat with all four words.
- Uncover the words and check you said it correctly.



COVER

- Cover up all four words.



WRITE

- Write out the definitions for all four words from memory.



CHECK

- Uncover the definitions and green pen to correct.



Home Learning

Students will receive a homework timetable for core subjects at the start of the year so that they can plan and organise their homework each evening.

This will also be on the academy website. Home Learning will be published on TEAMS and you will be able to see all your home learning in the Assignments tab.

There are Home Learning Clubs every day that all students are welcome to attend should they need access to computers or learning support.



North Oxfordshire Academy
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sparx

 **SENECA**



Arbor


unifrog

Term 5

Term 6

Term 3

Term 4

Term 1

Term 2

Year 8 2024-2025



Key to Chameleon PDE themes

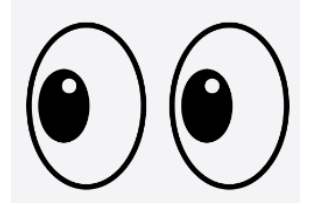
- | | |
|-----------------------------|-------------------------------------|
| ● Keeping safe | ● Sexual health |
| ● Online life & media | ● Future choices & money |
| ● Emotional & mental health | ● Values, rights & responsibilities |
| ● Health & fitness | ● Personal skills development |
| ● Relationships | ● Other |

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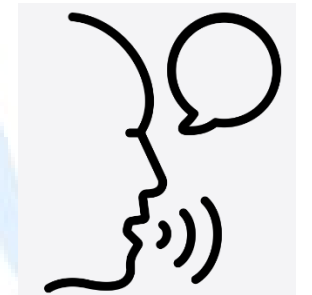
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Sentence Stems: Year 5 to Year 9



Listen and Mark

Pay close attention to others and point out important moments.

- I notice you used the word ____, which made me wonder ____.
- When you said ____, it made me think about ____.
- Did anyone notice what ____ said about ____? This seems important because ____.

Introduce and Invite

Begin your contribution and encourage others to participate.

- I think that ____ because ____.
- ____, what do you think?
- We should discuss ____ because ____.

Challenge and Verify

Disagree and ask others to prove or clarify information.

- You said ____ . How do you know?
- I think you said ____ . Is that right?
- I disagree with what you said about ____ because ____.

Defend and Unpack

Defend your perspective and explain your thought process.

- I understand your perspective, but have you thought about ____?
- I actually think this because, firstly, ____ . (Secondly, Thirdly).
- Actually, [evidence] suggests that ____.

Build and Support

Add to others' ideas and bolster points by giving evidence.

- You said ____, and I want to add that by saying ____.
- ____ supports the idea that ____.
- The points made by ____ and ____ link together because ____.

Summarise and Map

Draw together big themes and track the discussion.

- Our main findings were ____.
- On the whole, we believe that ____.
- Initially, we thought ____, but we eventually decided ____.



Sentence Stems: Year 10 to Year 13



Listen and Mark

Pay close attention to others and point out important moments.

- I notice you used the word / phrase ____, which implies ____.
- When you said ____, it anchored the idea that ____.
- Did anyone notice what ____ said about ____? This seems important because ____.

Introduce and Invite

Begin your contribution and encourage others to participate.

- I suggest that ____ because ____.
- ____, what is your perspective on ____, and why?
- We should discuss ____ because ____.

Challenge and Verify

Disagree and ask others to prove or clarify information.

- You said ____ . How do you know?
- I think you said ____, which implies that you believe ____ . Is that right?
- I disagree with what you said about ____ because ____.

Defend and Unpack

Defend your perspective and explain your thought process.

- I understand your perspective on ____, but have you thought about ____?
- I actually think this because ____ . (Furthermore, finally).
- Actually, [evidence] suggests that ____.

Build and Support

Add to others' ideas and bolster points by giving evidence.

- Your point about ____ implies ____, and I would like to further this by saying ____.
- ____ supports the idea that ____.
- Drawing upon points made by ____ and ____, we can conclude that ____ because ____.

Summarise and Map

Draw together big themes and track the discussion.

- Our main findings were ____.
- On the whole, we believe that ____.
- Initially, we thought ____, but we eventually decided ____.



Year 8

Term 1

Contents

Art

DT

English

Food

Geography

History

IT

Maths

Music

PE

RE

Science

Spanish

Year 8 Unit 1 Knowledge Organiser:

Birds Sculpture

The Formal Elements

Line: a line is a path traced by a moving point

Shape: these are two dimensional areas, shapes are always flat

Form: a form has height, width and depth, a form always has three dimensions

Value: how light or dark shading/colours are

Texture: the way a surface looks or feels

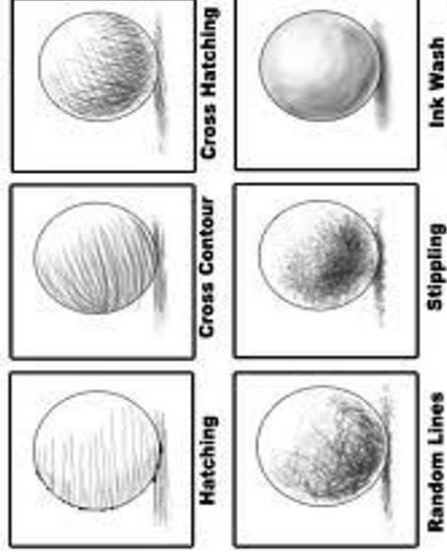
Space: artists use space to create the illusion of depth

Colour: the spectrum of light captured by our eyes

Organic: shapes that are irregular or asymmetrical in appearance and tend to have a curvy flow to them. Nearly all shapes found in nature are **organic** in appearance. Examples are leaves, flowers etc.

Geometric: the use of straight lines and shapes. An example of **geometric** is an **art** piece made from rectangles, squares and circles.

Shading Techniques



Colour Theory

Primary colours: Red, Yellow and Blue.

Secondary colours: Green, orange and purple

These are the colours formed by mixing the primary colours

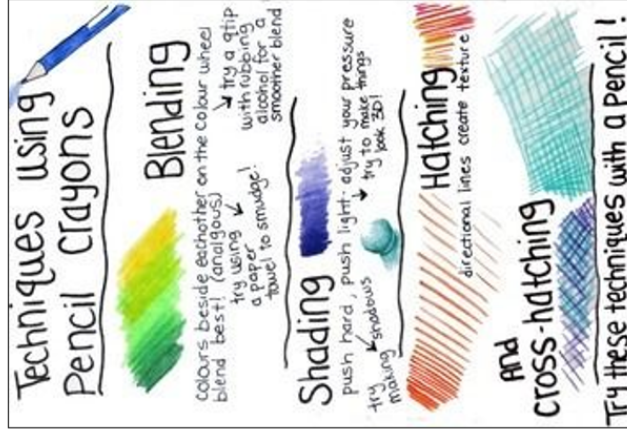
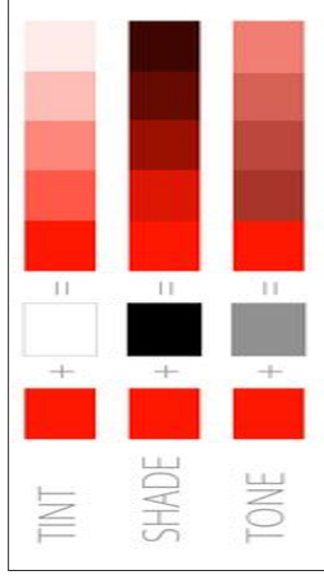
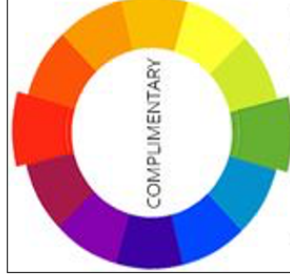
Tertiary colours: These are the colours formed by mixing a primary and a secondary colour

Analogous colours: Any three colours which are side by side

Complementary colours: Any two colours which are directly opposite each other on the colour wheel

Warm colours: Red through to yellow-green

Cool colours: Green through to red-violet



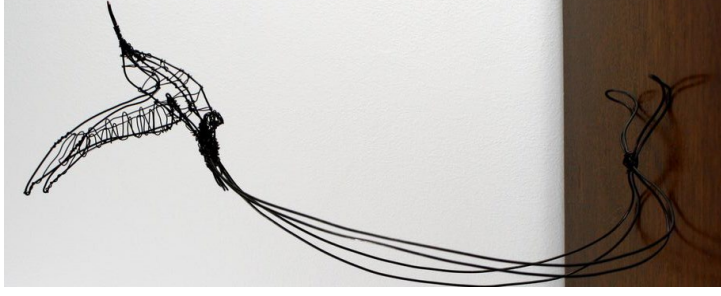
SCULPTURE: Three-dimensional art made by one of four basic processes: carving, modelling, casting, constructing



CARVING

Carving is a sculptural technique that involves using tools to shape a form by cutting or scraping away from a solid material such as stone, wood, ivory or bone.

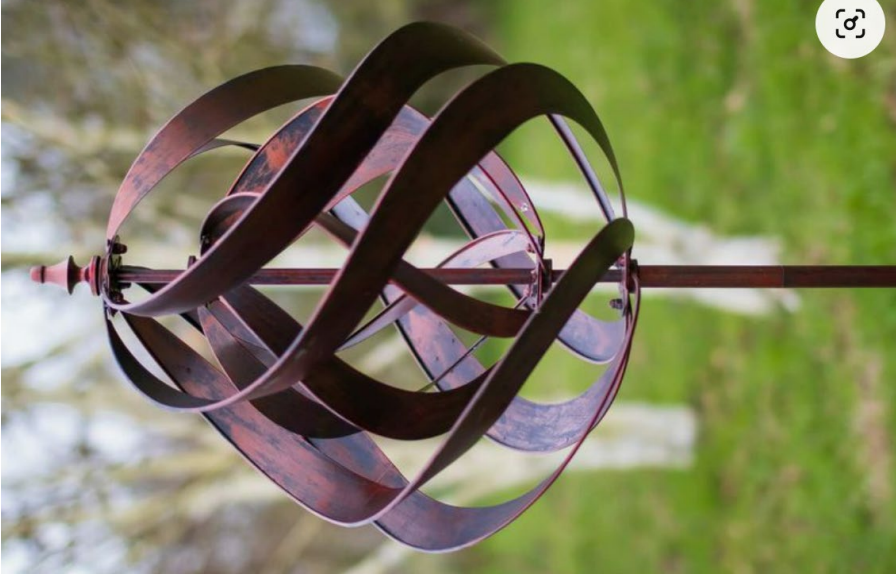
Subtractive: this is a technique created by carving or *taking away*



MODELLING

Modelling is an additive process. This means a soft material is worked by the artist to build up a shape or form (rather than scraping or material away as in carving). Also unlike carving, soft materials such as clay and wax can be changed and reworked. Modelling a **maquette** (*a mini version of your design*) can also often be the first step in the creation of a finished sculpture.

Additive: this is a technique created by building/joining materials



[3]

Mobile: has moving parts. Because these sculptures have movable parts they are must be made from strong materials such as metals or plastics.

In the round: finished on all sides like a statue. These were historically made from marble, stone or wood



Relief: raised surface with a flat back, made from any materials



Moulding: using your hands or a tool to shape the materials into the correct correct form

Watercolour Painting Techniques



Wet into Wet

Paint your paper with water, then drop in your wet color. Let it spread.



Wet onto Dry

Paint directly onto dry paper. You will likely have some hard edges.



Flat Wash

Paint an even area of color. Pre-mix enough of the color ahead of time.



Graded Wash

Create a gradient (light to dark) by mixing in more water as you go.



Lift Out

Lift paint off a dried section by using a clean wet brush. Wipe the paint on a paper towel.



Dry Brush

Use very little water. Your brush stroke should appear scratchy.



Splatter

Flick your wrist to splatter the paint, or drag your fingers over the bristles.



Blending

Blend between two colors. Wiggle your brush and use your paper towel to help.

Artist Research: Suzanne Breakwell

Born in Coventry 1975, youngest of three daughters with an unstoppable urge to make, draw & create since childhood.

She has experience working as a model maker for film, set decorator & dresser for tv & working on community film projects. Suzanne also has experience as an arts facilitator in primary schools & community

workshops. Suzanne currently lives in Brighton, East Sussex with her family.

"The inspiration for my work comes from an overwhelming love & fascination with the natural world & all its glorious flora & fauna. My sculptural pieces are constructed from wire, papier-mache, pages from books and cotton rag papers.

I use various self-taught techniques to describe & build character to my chosen subjects. I hand paint ink on to the cotton rag papers and pages to help bring life & vibrancy to each & every piece.

I adore paper as a medium & love the beauty & simplicity of creating my pieces from a medium that is so widely used by so many on a daily basis. It's the potential of paper & what it might be able to become which sparks my imagination. I find the delicate yet strong characteristics of paper make it an interesting & versatile material to work with. It is this contradictory nature which fascinates me & its ability to continually reinvent itself never ceases to amaze & continues to push me forward developing new ideas & techniques."

For more information on Suzanne Breakwell: <https://www.suzannebreakwell.com/>

Year 8 Knowledge Organiser – Planning

You must be able to produce a work interpretation from a client brief, and then create a plan which fully meets the client requirements

Work Plan

Task	Duration	Resources
RESEARCH		
Research video technique	1 hour	Computer, Internet, Keyboard, Mouse
Research existing videos	1 hour	
PLAN		
Plan initial ideas for video	30 mins	Computer, Microsoft Word, Keyboard, Mouse
Create a storyboard		
List equipment needed	30 mins	Computer, Microsoft Word, Keyboard, Mouse
Target audience analysis	1 hour	Computer, Survey Monkey, Keyboard, Mouse
CREATE		
	2 hours	
Import footage to computer	30 mins	Video Camera, Computer, Adobe Premiere
Review video footage		
Edit video footage	2 hours	
Add titles to video		
Add music to video		Computer, Adobe Premiere, Keyboard, Mouse
Export final video		Computer, Adobe Premiere, Keyboard, Mouse
REVIEW		
Test the video	30 mins	Computer, Microsoft Word, Keyboard, Mouse
Get feedback from client	1 hour	
Review the video		

Work Plan Content	Items to consider
Tasks	List all activities in chronological order would be expected to complete the project. Such as, adding slide transitions, creating a script, hiring equipment.
Activates	Consider all activities that are needed to complete the tasks. Such as, setting up the studio, researching the internet, taking additional photos, creating photoshop images or logos.
Resources	What additional equipment is needed and what additional costs might this introduce? Maybe you don't have the right lens for a video camera or DSLR. Do you need to involve more people? If so, how any and when?
Workflow	What order do things need to be done? Producing the plans (Gantt Chart) before starting the project. Capturing images before editing. Do you need a storyboard or visualisation diagram first? What time is needed to do this?
Timescales	When does the project need to be finished and how much time does this give you for each task. Which tasks can cause others to be delayed too much?

Gantt Chart

A Gantt chart is a visual representation of a project plan schedule. It graphically shows the duration of each task in the order that they have to be completed. It gives a clear representation of the time needed to complete each stage and will show if the project can be completed on time. It can also allocate work to different people or groups.



Other considerations

Contingency planning - You must consider planning for the unexpected; do you need more time, more cost, what if there are unexpected delays?
Schedule (definition): A plan of tasks with associated time for each task.

Year 8 Knowledge Organiser – Planning

You must be able to demonstrate complex planning techniques to show what the product will look like.

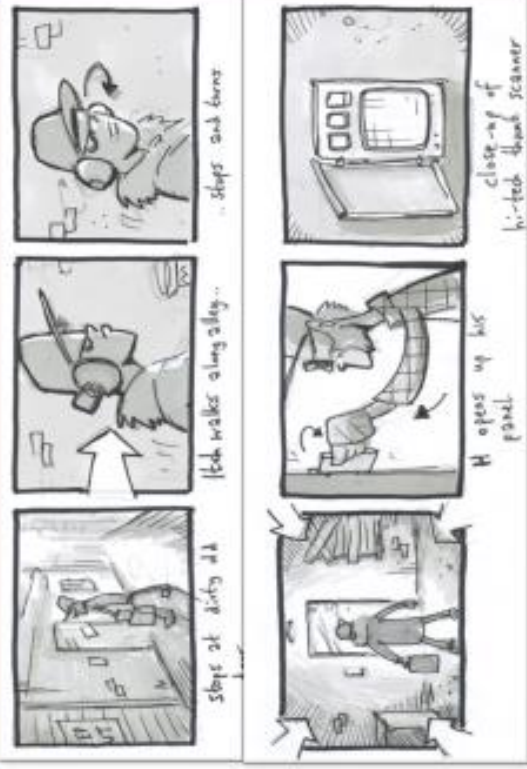
1. Research	2. Plan	3. Create	4. Review
⇒ Refer to client specification	⇒ Layout	⇒ Assets	⇒ Quality
⇒ Target Audience	⇒ Colours	⇒ Templates	⇒ Testing
⇒ Identify existing solutions.	⇒ Fonts	⇒ Images	⇒ Fix errors
⇒ Is the project achievable	⇒ Media	⇒ Logos	⇒ Obtain feedback
⇒ Target audience	⇒ Content	⇒ Text	⇒ Check fit for purpose
⇒ Technology needed to complete the project	⇒ User needs	⇒ Media	⇒ Improvement
	⇒ House Style	⇒ Hyperlinks	⇒ Meets client requirements
	⇒ Charts	⇒ Forms	⇒ Use target audience and client feedback
	⇒ Equipment	⇒ Testing plan	



Using the planning techniques should enable you to be able to produce a **visualisation diagram** or **storyboard** of the multimedia product that is in your client brief. It should represent the full consideration of the client brief.

Visualisation diagrams and storyboards are always produced prior to creating the multimedia project. They assist in the development of the project ensuring that all the clients requirements have been fulfilled before the expressive task of creating the media begins.

Storyboards and visualisation diagrams are never edited once the multimedia product has been completed, so some differences are expected to be seen.



Required Evidence Examples of evidence

Written and presentation files	• Electronic files/evidence
Client requirements	• Written report/presentation
Planning Documents	• Written report, presentation, audio commentary
Finished product	• Work plan, asset table, visualisation diagram and test plan
Review	• An interactive multimedia product.
	• Written report, presentation or recording.

NOA English Year 8 Knowledge Organiser: Descriptive Writing

Descriptive Writing Structure	
Drop	Plunge in with something dramatic or shocking as an opening; or establishing an atmosphere through descriptions of setting.
Zoom	Focus on something specific that you have mentioned in your opening paragraph – build the detail of a character or an object in a setting.
Flash	Go somewhere else – place/ time/ person/ experience. Make sure that the mood and atmosphere is completely different from your DROP and ZOOM, but that there is still a clear connection, so it feels like one piece of writing
Echo	Create a mirror of the opening, highlight a change or contrast from the beginning.

Intent	This unit is designed to enhance students creative writing skills: amplifying their use of narrative voice and gaining a greater understanding of how setting, perspective and description work together to create dynamic and interesting perspectives. The structure we use (Drop, Zoom, Flash, Echo) is designed to facilitate the creative process and enable independent thinking		
Key methods		Explanation	How it can be used
Foreshadowing		A warning or indication of a future event.	You can use foreshadowing to help you to shape your story and show how the events influence others and which are important. Also foreshadowing can help give your reader hints about what is to come.
Imagery		The use of figurative language to evoke a feeling, to call to mind an idea, or to describe an object. Imagery can appeal to any of the senses.	You can use imagery in your writing to provide more vivid descriptions which adds excitement and interest in your writing. It also helps to create a specific mood or tone to your writing. Examples of imagery include similes, metaphors and personification.
Symbolism		The use of symbols to represent ideas or qualities.	You can use symbolism to communicate your ideas more effectively with your reader, building the complexity of your descriptions. Just as authors do, you can use these symbols as a short-hand for an additional (more complex) meaning.
Atmosphere		The external feeling coming from a physical environment.	By focussing on the description of the setting within your writing, you are able to enhance the narrative with richer and deeper detail. It allows for the eliciting of an emotional response from the reader.
Mood		The internal feeling of the reader.	Evoking certain feelings and emotions to allow for the expression of reader's experiences; the reader needs to feel emotionally attached to the story, the characters, the plot and the possibilities.
Characterisation		The creation or construction of a fictional character; the distinctive nature or features of someone or something.	You can use characterisation to help readers understand your characters and how each character's personality and perspectives can help drive the plot forward.
Tone		The mood or atmosphere.	Varying your tone can help you to add interest to your writing and show how the characters may feel in each situation. It can also help you to communicate with your reader how they should feel about the events taking place.

Key Word Glossary		
Word	Definition	Example
Cyclical Narrative	A story which ends where it begins, they cycle through one event at a time to end back at the point where the narrative started.	Authors use a cyclical structure to show how things have changed.
Direct Address	The use of a term or name for the person spoken to, as in securing the attention of that person.	The use of direct address engages the reader.
Discourse Markers	A word or phrase whose function to organise writing.	Discourse markers are important for ensuring clarity in writing.
Explicit	Stated clearly and in detail, leaving no room for confusion or doubt.	Such information should be made explicit and not left vague.
Figurative	Departing from the literal use of words; meant to be taken metaphorically.	They were using figurative language in order to get their point across.
Implicit	Suggested (implied) but not directly stated.	Her words contained an implicit threat.
Linear Narrative	A story that is organised around a series of events and key moments that have often been labelled as follows: exposition, rising action, climax, falling action and resolution.	The linear structure highlights the moral of the story and what was wrong with Icarus' actions.
Narrative Voice	Narrative voice is the perspective the story is told from. The writer chooses a narrative voice carefully, as it can have an important effect on the story and the reader's response.	The narrative voice is first person, giving you more insight into the character.
Sentence Types	Simple: a sentence that contains a single independent clause. Compound: a sentence with at least two major, independent clauses. Complex: a sentence with one independent clause and at least one dependent clause.	Simple Sentences can help to make your writing direct, blunt, or add emphasis. Compound Sentences can help to unite ideas and bring them together. Complex sentences can help to increase the detail in your descriptions.
Setting	The time and place of the action in a work of fiction.	The setting of the work can highlight some of the themes of the plot.
Synonym	A word or phrase that means exactly or nearly the same as another word or phrase.	Using synonyms helps to add variety to your work.

Food Preparation & Nutrition

Yr8 Food – Term 1/ Autumn

Hazard Analysis Critical Control Points

Type of hazard	Example
Biological	Salmonella in chicken
Chemical	Contamination from cleaning materials, e.g., bleach
Physical	Damaged packaging, glass found in food
Allergical	Allergens contaminating other foods

BUYING TRANSPORTING STORING COOKING



- Cook food thoroughly
- Cooked and raw foods should be kept separate
- Store food in the correct place
- Keep workspace clean
- Keep yourself clean
- Don't cough or sneeze over food
- Wash hands regularly



Food Storage: expiration dates



High Risk Foods

Foods that provide ideal conditions for pathogenic bacteria to grow.

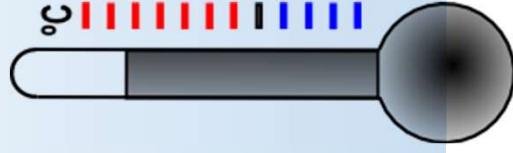
- Meat, meat products and poultry
- Milk and dairy products
- Eggs
- Shellfish and seafood
- Prepared salads and vegetables
- Cooked rice and pasta

Food Preparation & Nutrition

Yr8 Food – Term 1/ Autumn

KNOWLEDGE ORGANISER

Temperature control is vital to minimise the risk of food poisoning! Bacteria reproduce by binary fission



- -18C Bacteria are dormant and not able to reproduce
- 0-5C Bacteria are sleeping and reproduce extremely slowly
- 5-63C Bacteria reproduce most actively, this is known as the **Danger Zone**
- 37C Optimum temperature for bacteria to reproduce, same as our body!!!
- 75C Bacteria start to be destroyed and are not able to reproduce.



SYMPTOMS

SOURCE

diarrhea, fever,
muscle aches

unpasteurized
milk, soft cheeses

nausea, fever,
cramps, diarrhea

raw milk,
raw meat

nausea, vomiting,
pain, diarrhea

stews, soups,
gravies held at
warm temperature

diarrhea,
chills, fever,
vomiting, cramps

undercooked poultry,
eggs or products
containing eggs

cramps, diarrhea,
fever, vomiting

contaminated
ground beef, unpas-
teurized juice, milk

LISTERIA

CAMPYLOBACTER

CLOSTRIDIUM PERFRINGENS

SALMONELLA

ESCHERICHIA COLI

Scan to learn how to cook your food

PREVENTING



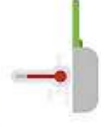
WASH HANDS
AND SURFACES
OFTEN



SEPARATELY KEEP
RAW AND FINISHED
PRODUCTS



THOROUGHLY
WASH FRUITS AND
VEGETABLES



COOK
TO THE RIGHT
TEMPERATURE



CHECK BEST
BEFORE DATE



IF IN DOUBT
THROW IT OUT

SYMPTOMS



NAUSEA



VOMITING



DIARRHEA



HEADACHE



FATIGUE



FEVER



CRAMPS



ABDOMINAL
PAIN

Population

Background:	
1.	The world's population is not spread evenly. (A)
2.	There are many factors that influence where we live. These factors have caused some places to be densely populated, whilst others are sparsely populated. (B)
3.	Total population is constantly changing, both within countries and world-wide. (C)
4.	We can look at changes in population by comparing past and predicted population structures. (D)
5.	The level of development within a country will influence it's population structure. However, as countries develop economically, these structures will change. (E)
6.	In many developed countries the population is ageing. This process brings many impacts. (F)
7.	Migration is also an important population process world-wide and is one of the biggest drivers of population change. (G, H)

A.	Population distribution (4)
Population density	The number of people who live within 1km ² .
Population distribution	How people are spread out over an area.
Densely populated	Places which contain many people per km ² .
Sparsely populated	Places which contain few people per km ² .

B.	Factors influencing population
Physical (4)	1. The relief of the land (flat or steep). 2. Natural resource availability. 3. Climate. 4. Fertility of the soil.
Human (3)	1. Transport links. 2. The availability of jobs. 3. The availability of local services e.g. hospitals, education.

C.	Population change (5)	
Birth rate	The number of births per 1000.	
Death rate	The number of deaths per 1000.	
Natural increase	The difference between birth and death rates.	
Population explosion	A sudden rapid rise in the number of people.	
Demographic transition model	A model which shows the changes a population is likely to go through over time.	

E.	Population structure differences	
Developing countries (2)	1. High birth rates, so a large young dependent population. 2. A lower life expectancy, so a small elderly dependent population.	
Developed countries (2)	1. A declining birth rate, so a small young dependent population. 2. A rising life expectancy, so a large elderly dependent population.	

F.	An ageing population (4)	
Life expectancy	The average age you are expected to live to in a country.	
Possible problems (3)	1. Pressure on the NHS, waiting times could increase. 2. The government may have to support the funding of pensions. 3. Government investment into more care homes and carers might be costly.	
Possible benefits (2)	1. Grandparents can help look after their grandchildren, reducing the cost of childcare for parents. 2. Some elderly have more disposable income so spend more in shops.	
Solutions (3)	1. Increase the retirement age. 2. Raise taxes. 3. Offer incentives for couples to have children e.g. longer maternity pay.	

D.	Population structure (4)	
Population structure	The number/ proportion of people in each age range, for each gender.	
Population pyramid	A graph showing population structure, by age and sex.	
Economically active	Those people who work, receive a wage and pay tax.	
Dependent population	Those who rely on the economically active for support e.g. the young and elderly.	

G.	Migration (5)	
Economic migrant	A person who leaves one area or country to go to another, to seek better job opportunities.	
Push factor	Things that make people want to leave an area.	
Pull factor	Things that attract people to live in an area.	
Host country	The destination country for a migrant.	
Source country	The home country of a migrant.	

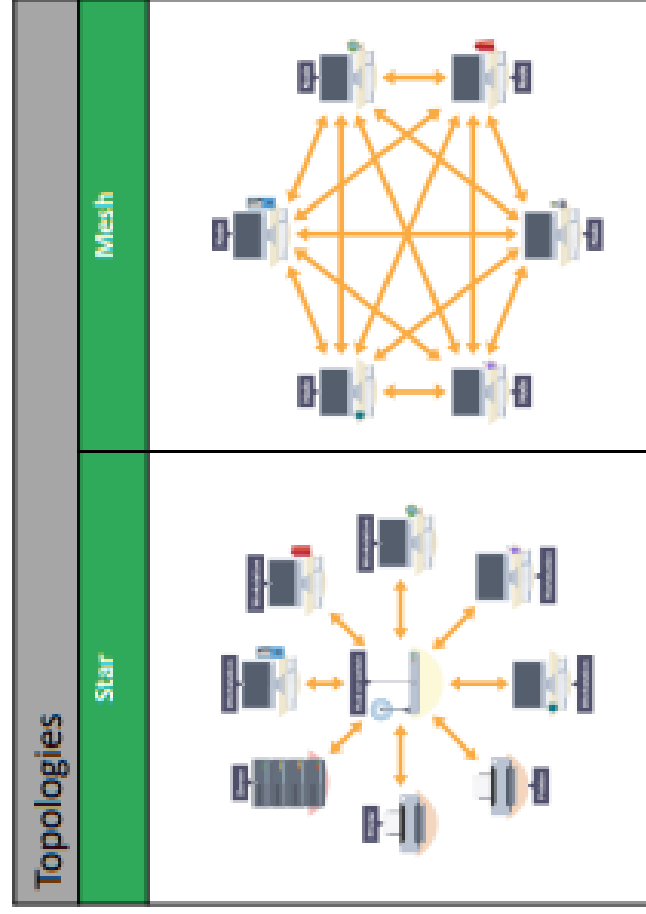
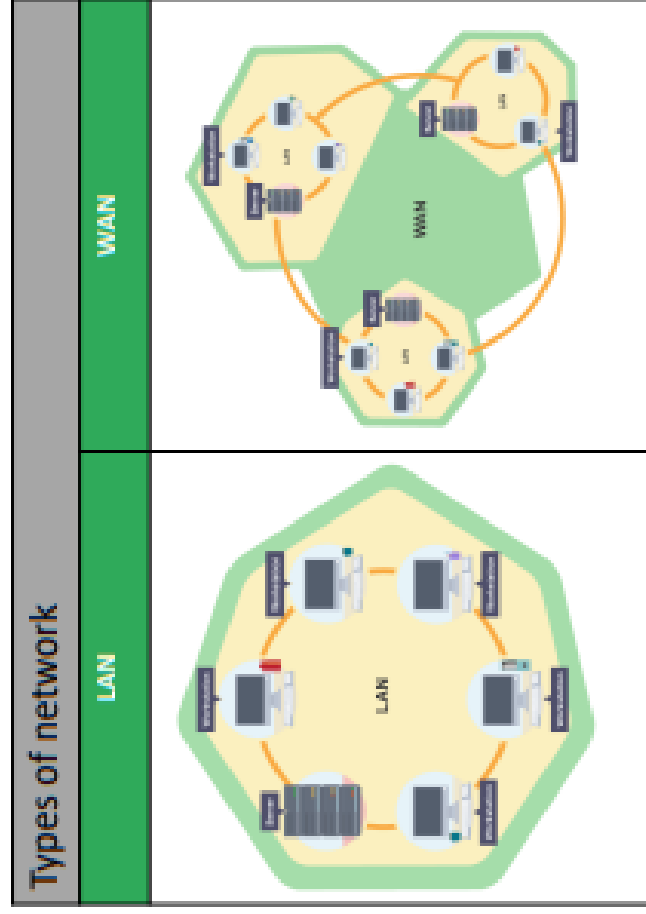
H.	Impacts of migration	
Positives for the source (2)	1. Money sent home (remittances) can support families. 2. Potential for increased trade between host country and source country.	
Negatives for the source (2)	1. Fewer economically active citizens. 2. Less tax, as fewer working people in the country.	
Positives for the host (2)	1. Migrants can work in jobs that are difficult to fill, therefore contribute tax. 2. New shops and restaurants open, which is positive for the economy.	
Negatives for host (1)	1. Potential pressure on public services e.g. health care.	

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Knowledge Outcomes					
1	Why did people buy indulgences?	To reduce their time in Purgatory	21	Why do some historians portray Henry VIII as a Machiavellian king?	He executed his closest advisors, a number of his wives and believed his power was second only to God
2	Who was forbidden from reading the bible in the Catholic church?	Ordinary people	22	Why did Henry want to annul his marriage to Catherine of Aragon?	She had failed to produce a male heir and could no longer bear children and Henry had fallen in love with Anne Boleyn
3	Why was the Pope so powerful at the beginning of the 1500s?	He controlled a large area of territory in central Italy, he was God's representative on earth, he could excommunicate any European monarch	23	Which powerful relative of Catherine's prevented the Pope from granting the annulment?	The Holy Roman Emperor, Charles V
4	Why were some people critical of the church's appearance at the beginning of the 1500s?	It was decorated with gold and silver, expensive artwork and stained glass windows which displayed vast wealth	24	Who did Henry put in charge of securing the annulment?	Thomas Wolsey
5	What occurred in Italy in the 1500s which led to a change in thinking about the world and religion?	The Renaissance	25	Who was Catherine originally married to?	Henry's older brother, Arthur
6	What was the name of the document Martin Luther pinned to a church door in 1517?	The 95 Theses	26	Why was a male heir so important to Henry?	To continue the Tudor control of the throne,; dynastic succession
7	What invention led Luther's ideas to spread so quickly across Europe?	The printing press	27	What did the 1534 Act of Supremacy change?	It broke with Rome and made Henry the head of the church in England
8	What major historical event was triggered by Luther's actions?	The Reformation	28	What was the financial impact to the crown of Henry's foreign policy?	Henry did not have enough revenue to pay for his wars, putting the crown into debt and forcing him to raise taxes
9	Which new Christian faith emerged in the 1500s?	Protestantism	29	What was happening to the value of Henry's land and the English currency before the break with Rome?	They were both decreasing in value
10	How did the Pope respond to Luther and his ideas about the Catholic church?	The Pope excommunicated Luther and branded him a heretic	30	How did Henry attempt to solve his financial problems in 1536?	By dissolving the monasteries; selling the land for profit and melting down the silver and gold
11	What did Protestant churches look like?	Plain white walls, no art or stained glass windows, simple wooden altar so that the focus of the worshipper would be on God	31	Which protestant lawyer became Henry's chief minister?	Thomas Cromwell
12	What did Protestant priests wear?	Plain and simple robes	32	What title was given to Henry by the Pope in 1521?	Defender of the Faith
13	Which church believed in transubstantiation?	The Catholic church	33	Which faction sought to influence Henry with Protestant teachings?	The Boleyns
14	What language was the bible found in Protestant churches?	The local language so that ordinary people could read it	34	Who was Henry's new Protestant Archbishop?	Thomas Cramner
15	Which church believed that the bible was the sole authority on how to worship?	The Protestant church	35	After the Royal Supremacy who would control the clergy in England?	The king
16	Which king founded the Tudor dynasty?	Henry VII	36	Why could disagreeing with the king make you a heretic after 1534?	Because he was now the head of the church as well as state (technically you would be guilty of heresy and treason)
17	Why was Henry Tudor considered a usurper?	He was relatively unknown with a weak claim to the throne	37	Why did the Dissolution of the Monasteries lead to the creation of new schools in England?	Monasteries had been responsible for education for 1000 years so new schools were opened to replace them
18	Why was Henry VII unpopular when he died?	He had become very greedy for revenue	38	What happened to those who refused to swear the Oath of Supremacy?	They were executed
19	Who did Henry VII distrust and exclude from his inner-circle?	Nobles	39	Who was Robert Aske?	The leader of the Pilgrimage of Grace
20	Who was the original heir to Henry VII's throne?	His oldest son, Arthur	40	What led to the Pilgrimage of Grace in 1536?	Northern nobles were angered by the Dissolution of the Monasteries

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Yr 8 Knowledge Organiser - Networks



Key vocabulary	
Network	A group of interconnected computers/devices.
LAN	Local area network. A network of computers that covers a small area, eg a school or college.
WAN	Wide area network. A network that spans across a building, buildings or even countries, eg the internet.
Client-server	A relationship in which data or web application is hosted on a server and accessed by client computers.
Peer to peer	A relationship where all computers on the network share responsibility and there is no one central server.
WAP	A device that connects computers to a network using Wi-Fi.
Switch	A device for connecting computers and other network capable devices together to form a network.
NIC	Network Interface Controller -A circuit board that is installed in a computer so it can be connected to a network.
Transmission media	How data is carried from point A to point B physically, either by cable or wirelessly.
Ethernet	A set of protocols used in a wired local area network that describes how data is transmitted within it.
Wi-Fi	A method of connecting to the internet wirelessly using radio waves.
Bluetooth	Wireless technology used for transmitting data over short distances.
DNS	Domain name server - an internet service that translates IP addresses into website domain names. All websites have equivalent IP addresses.
Host	A server that stores files for other computers to access.
Cloud	A term often used to describe a location on the internet from which software applications are run and where data is stored.

Yr 8 Knowledge Organiser - Networks

Key vocabulary	
Encryption	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.
IP address	A unique address for each computer device on a network.
MAC address	Media access control - each unique piece of hardware on a network has a MAC address.
Standard	An agreed way of doing things.
Protocol	A set of rules for how messages are turned into data packets and sent across networks.

Layers
Layering means to break up the sending of messages into separate components and activities. Each component handles a different part of the communication. This can be referred to as the Transmission Control Protocol/Internet Protocol (TCP/IP) model. Layering allows standards to be developed, but also to be adapted to new hardware and software over time. For example, different software packages (applications) may use the same transport, network and link layers but have their own application layer. The way the program encodes the message changes - the rest of communication method remains the same.

Common protocols	
TCP/IP	Transmission Control Protocol/Internet Protocol - enables communication over the internet.
HTTP	Hypertext Transfer Protocol - governs communication between a webserver and a client.
HTTPS	HTTPS (secure) includes secure encryption to allow transactions to be made over the internet.
FTP	File Transfer Protocol - governs the transmission of files across a network and the internet.
POP	Post Office Protocol - governs the transmission of emails to devices. Once downloaded to the device is deleted from the server.
IMAP	Internet Message Access Protocol - governs the transmission of emails. Stored on server and accessed by devices.
SMTP	Simple Mail Transfer Protocol - governs the sending of email over a network to a mail server.
Layering	In networking, the concept of breaking up communication into separate components or activities.

Encryption
A simple method of encryption requires the use of a technique known as the Caesar cipher. The cipher works by giving a number value to a key. Each plaintext letter is replaced by a new letter, the one found at the original letter's position in the alphabet plus the value of the key. The example uses a key value of 3.

Plaintext
CipherText

a b c d e f g h i j k l m n o p q r s t u v w x y z
d e f g h i j k l m n o p q r s t u v w x y z a b c

Yr 8 Knowledge Organiser - Networks

Key vocabulary	
Operating System	The software that manages the hardware and software resources in a computer system.
User interface	The means by which a user interacts with a computer or device.
Memory Management	Managing which data is stored in which location in the main memory.
Multitasking	In computing, running more than one program simultaneously.
Peripheral	A piece of hardware that connects to a computer, eg a mouse, keyboard, printer or scanner.
Driver	Software that controls and communicates with peripherals
User management	Organising how user interfaces and data are represented to different users.
File management	Organising how data is stored on secondary storage.
Utility software	A program which performs important maintenance tasks to improve the performance of a computer system.
Encryption software	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.
Defragmentation	The process of reordering files stored on a hard disk so that their segments run contiguously.
Data Compression	A method of reducing file sizes, particularly in digital media such as photos, audio and video.

User interfaces	
	A Graphical User Interface (GUI) is the most common interface. It uses Windows, icons, Menus and a Pointer to display data and allow the user to navigate. It requires processor power to run. It is easy to use and requires little training.
	A Command Line interface (CLI) uses text to display data only and accepts only text commands from the user. It requires minimal processor power to run. It requires the user to learn commands to use.
	A menu driven interface uses a series of menus in a tree to display data and allow the user to navigate. It requires no training to be used. Examples include ticket machines.
	A Natural Language interface uses linguistic commands that are spoken in order to allow the user to navigate and represent data. Processing power is required to understand the user request and respond. No training is required in order to use.

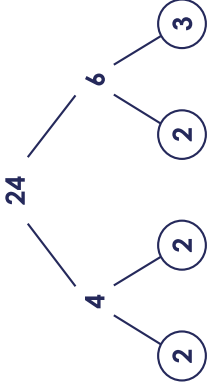
Defragmentation	
Over time files stored can become fragmented.	
Defragmentation removed any gaps and reorders data so that files are contiguous and all free space is at the end.	

Yr 8 Knowledge Organiser - Networks

Protecting networks		
Form of attack	Prevention	
Malware	Anti-Malware software.	
Phishing	Training of user to detect scams as well as the filtering of emails.	
Brute-force attacks	Use of different strong passwords. A limit on the number of incorrect attempts.	
Denial of service attacks	Block IP addresses which send too many requests. Increase capacity.	
Data interception and theft	Encryption of data.	
SQL injection	Ensuring that all data input is sanitized. (Forcing data to be in the format you want it such as a date, text or integer.)	

Key vocabulary	
Malware	Software that is designed to cause harm or damage to a computer. This includes viruses that might damage files, adware that causes pop-ups, and spyware that collects and shares login details.
Social Engineering	Tricking people into giving sensitive data such as PINs or passwords.
Phishing	An attempt to gain personal information about someone by way of deception, eg sending an email pretending to be from their bank asking them for their bank details.
Brute-force attack	Attempting every combination of a password or encryption key until it is correct.
Denial of service attack	An attack designed to render online services inaccessible. One type of this attack involves many computers simultaneously flooding a target with network traffic.
Data interception	Where data is intercepted during transmission. This is done using software called a packet sniffer, which examines data packets as they are sent around a network.
SQL Injection	Where SQL code is entered as a data input. Many databases use SQL code to interrogate the data and maintain the structure. SQL code can be inputted as data, which can cause errors or unintended operations.
Penetration testing	Systems are tested for vulnerabilities to reveal any weaknesses in the system which can be fixed.
Anti-malware	A type of computer program which detects, prevents and removes malware on a system.
Firewall	An application that prevents unauthorised connections to and from the Internet.
User-access level	These are the permissions given to a user to access facilities on a computer.
Encryption	Files that are encrypted have been altered using a secret code and are unreadable to unauthorised parties.

KPI 8.01 Powers and Roots		
1) Square number	The result of multiplying a number by itself. It will always be positive. The first 12 square numbers are: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144.	2) Square root The opposite of squaring a number to find the original factor. e.g. $\sqrt{64} = 8$ or -8 because $8^2 = 64$ and $(-8)^2 = 64$
3) Cube number	The result of multiplying a number by itself, then itself again. The first 10 cube numbers are: 1, 8, 27, 64, 125, 216, 343, 512, 729, 1000.	4) Cube root The opposite of cubing a number to find the original factor. e.g. $\sqrt[3]{8} = 2$ because $2^3 = 8$ Note: $(-2)^3 = -8$ so $\sqrt[3]{8} \neq -2$
5) Index notation	Example $a \times a \times a \times a = a^4$. The number 4 is called the index (plural indices). This tells us how many times the "base" a has been multiplied by itself.	Power →  Index
6) Multiplying powers	$a^m \times a^n = a^{m+n}$ ADD the powers only if the bases are the same. E.g. $a^5 \times a^3 = a^{5+3} = a^8$	7) Dividing powers $a^m \div a^n = a^{m-n}$ SUBTRACT the powers only if the bases are the same. E.g. $a^6 \div a^2 = a^{6-2} = a^4$
8) Indices with brackets	$(a^m)^n = a^{m \times n}$ MULTIPLY the powers. E.g. $(a^3)^5 = a^{3 \times 5} = a^{15}$	9) Indices with brackets $(ab)^n = a^n \times b^n$ Raise each number or variable to the same power. E.g. $(2p)^4 = 2^4 \times p^4 = 16p^4$
10) Power of 0	$a^0 = 1$. Any number or variable to the power of zero equals 1.	11) Power of $\frac{1}{2}$ $a^{\frac{1}{2}} = \sqrt{a}$. E.g. $16^{\frac{1}{2}} = \sqrt{16} = 4$

KPI 8.02 Prime Factorisation		
1) Prime numbers	A prime number only has two distinct factors: 1 and itself. 2 is the only even prime number. 1 is not a prime number. Prime numbers between 1 and 100: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97.	
2) Prime factor decomposition	The process of expressing a number as a product of its prime factors. $24 = 2 \times 2 \times 2 \times 3 \rightarrow 24 = 2^3 \times 3$	3) Prime factor trees 

KPI 8.03 Rounding					
1) Significant figures	The total number of digits in a number, not counting zeros at the beginning of a number or at the end of a decimal number. 345 000 has 6 significant figures. 0.3047 has 4 significant figures. 10.500 has 3 significant figures.				
2) Rounding to significant figures	Round to...	0.007638 to 3 sf	0.007638 to 2 sf	0.007638 to 1 sf	2.0507 to 2 sf
	Answer	0.00764	0.0076	0.008	2.1
3) Estimate	Find a rough or approximate answer by calculating with numbers rounded to one significant figure. e.g. $2.3 \times 18.4 \approx 2 \times 20 = 40$ $\approx$ "approximately equal to"				

KPI 8.04 Fractions		
1) Converting an improper fraction to a mixed number	$\frac{15}{7} = 2\frac{1}{7}$	2) Converting a mixed number to an improper fraction $3\frac{4}{5} = \frac{(3 \times 5) + 4}{5} = \frac{19}{5}$
3) Adding and subtracting fractions	Make the denominators the same (find the LCM). Use equivalent fractions to ensure fractions have a common denominator. Add/subtract the numerators only.	$\frac{2}{7} + \frac{2}{5} = \frac{10}{35} + \frac{14}{35} = \frac{24}{35}$
4) Multiplying fractions	Multiply the numerators. Multiply the denominators. Simplify where possible.	$\frac{4}{5} \times \frac{3}{8} = \frac{12}{40} = \frac{3}{10}$
5) Dividing fractions	Keep the first fraction the same. Change the second to its reciprocal. Multiply the fractions. Simplify or convert to a mixed number where possible.	$\frac{4}{5} \div \frac{3}{8} = \frac{4}{5} \times \frac{8}{3} = \frac{32}{15} = 2\frac{2}{15}$

KPI 8.05 Negative Number Review		
1) Double signs	When we subtract a negative, we add. $-5 \ominus 1$ $-5 + 1$ $-15 \ominus 1$ $-15 + 1$	2) Double signs When we add a negative, or subtract a positive, we subtract. $-5 \oplus 1$ $-5 - 1$ $-15 \ominus 1$ $-15 - 1$
3) Multiplying negative numbers	Negative x Negative = Positive Positive x Positive = Positive Negative x Positive = Negative Positive x Negative = Negative	4) Dividing negative numbers Negative ÷ Negative = Positive Positive ÷ Positive = Positive Negative ÷ Positive = Negative Positive ÷ Negative = Negative



Knowledge Organiser Key Stage 3

Subject: Music Year: 8

Topic Title: Elements and Notation



Lessons 1&2

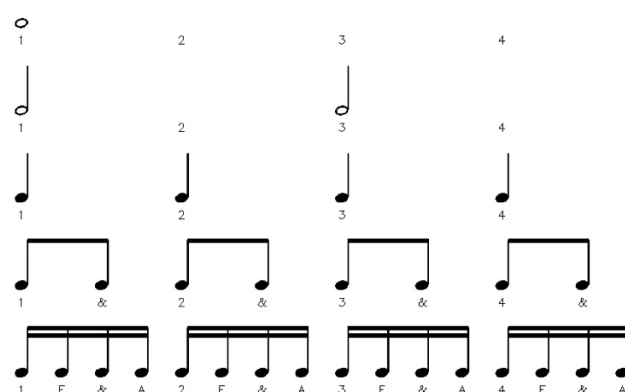
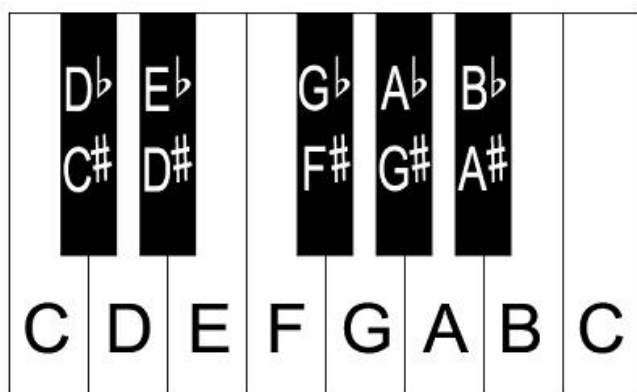
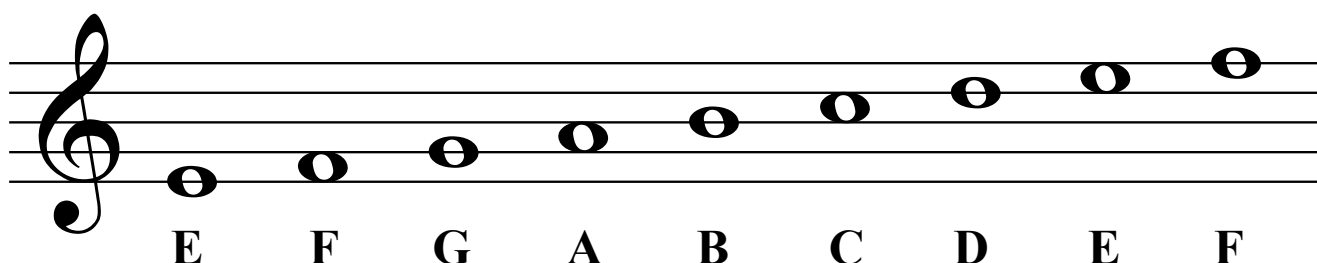
Key Facts from this lesson

- Notation is the method we use to write music. We use rhythm symbols (as we learned last term) and place them on a line or space of the *treble clef*, which tells us which pitch to play.
- We are using the C major scale this term, which uses only white keys on the keyboard.

Key words and definitions from this lesson:

- ★ **Notation** – The most common method used to write music
- ★ **Treble clef** – The symbol at the start of a score that tells us which set of pitches to use
- ★ **Score** – A piece of music written down
- ★ **Melody** – The tune in a piece of music
- ★ **Staff** – The set of five vertical lines used in treble clef notation

Diagrams to support learning:



♩ – Semibreve – Four beats

♪ – Minim – Two beats

♫ – Crotchet – One beat

♫ – Quaver – Half a beat

♫ – Semiquaver – A quarter or a beat



Knowledge Organiser Key Stage 3

Subject: Music Year: 8

Topic Title: Elements and Notation



Lesson 3

Key Facts from this lesson

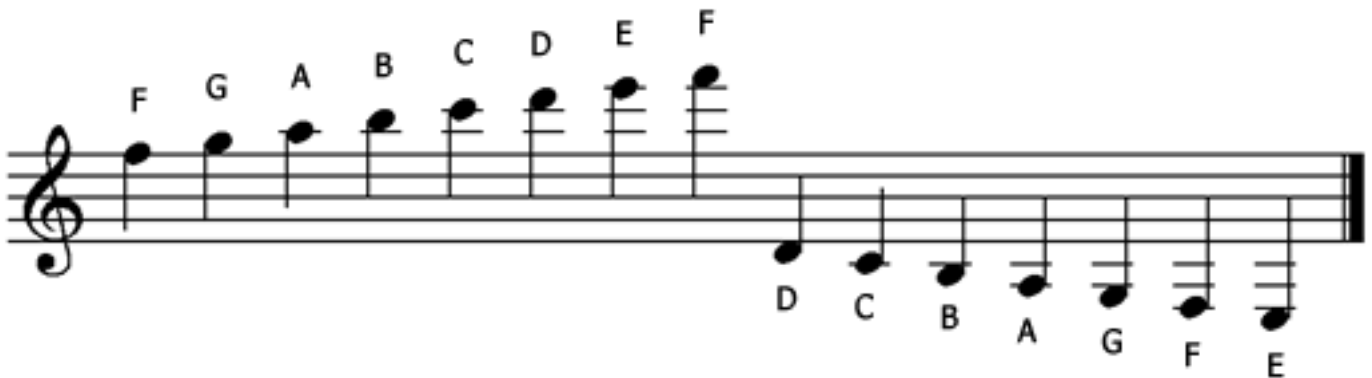
- Sometimes we need to use notes outside of the ones given to use on the notes and lines of the treble clef. We can use *ledger lines* to add additional notes above or below the staff.
- Every bar of music should add up to four beats, so if a note is to be played in one bar and continue into another, we can use a tie symbol to combine the duration of two notes. We can also use ties to keep our scores tidy and make the pulse (the underlying beat of the music) really clear.

Key words and definitions from this lesson:

- ★ **Ledger line** – Additional lines drawn above or below the staff that tell us which pitches to play.
- ★ **Tie** – A symbol that tells us to play two notes as one. For instance, a crotchet (1 beat) tied to a minim (2 beats) would tell us to play a note with a duration of 3 beats.

Diagrams to support learning:

Ledger lines:



Tied notes:



This is a crotchet (one beat) tied to a semibreve (four beats), leaving a resulting note of five beats.



Lesson 4

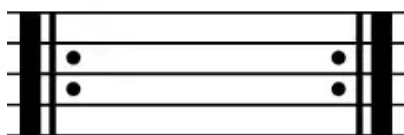
Key Facts from this lesson

- If when we performed music we never stopped playing, the music would be exhausting to listen to! We use rests to add pauses to melodies; they serve the same purpose as punctuation (like full stops and commas) in a sentence.
- If we need to play a part twice, we don't need to write it twice on the score, instead we just use a symbol that tells us to repeat a section.
- Pieces of music don't always have to start on beat one. Sometimes, we use a short phrase before beat one that leads us to the starting point, this is called an anacrusis.

Key words and definitions from this lesson:

- ★ **Rest** – A symbol that tells us not to play for a given duration
- ★ **Repeat** – A symbol that tells us the section of the music marked by the repeat barlines (shown below) is to be repeated
- ★ **Anacrusis/pick up** – A short musical phrase that comes before beat one in a piece

Diagrams to support learning:



Start repeat

End repeat



Anacrusis (2 "pickup" beats before beat 1)

– – Semibreve rest – do not play for four beats

– Minim rest – do not play for two beats

– Crotchet rest – do not play for one beat

– Quaver rest – do not play for half a beat

– Semiquaver rest – do not play for a quarter or a beat



Knowledge Organiser Key Stage 3

Subject: Music Year: 8

Topic Title: Elements and Notation



Lesson 5

Key Facts from this lesson

- On a score, chords are often written above the melody. The accompaniment style (the rhythm of the chords) is left to the player to decide.
- The most simple chords are triads; these are three-note chords that can be major (sounds bright) or minor (sounds dark). If we add any more notes to the triad, it is an extended chord.
- Chords can be played in root position, first inversion or second inversion; this refers to the order of notes. An example is shown below.

Key words and definitions from this lesson:

- ★ **Harmony** – The effect of multiple pitches being played at one time.
- ★ **Chord** – A combination of three or more pitches.
- ★ **Extension** – An additional note added to a triadic chord.
- ★ **Inversion** – A chord with an alteration made to the order of the notes.

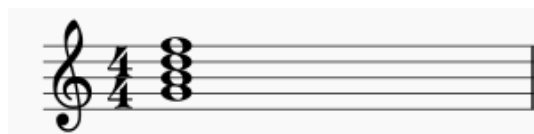
Diagrams to support learning:



C (Root position)
C, E, G

C (First inversion)
E, G, C

C (Second inversion)
G, C, E



Extended chord (G7)
G, B, D, F

Notes in each chord:

C – C, E, G

C7 – C, E, G, Bb

F – F, A, C

Fm – F, Ab, C

G – G, B, D

G7 – G, B, D, F

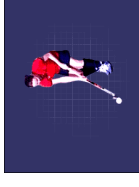
Fit 2 Perform Knowledge Organiser

Rules, Regulations & Skills	
Rule or Laws in Sport	This is a restriction on a game that should be followed throughout the game. Rules are set out by the governing body of each sport to ensure that rules are observed by players, coaches and officials. (Each sport has its own national governing body) Athletics – UK Athletics Unwritten rules – contribute to fair play Respect to other players Respect towards coaches and officials Playing within the rules Equality for all sports performers
Regulation	This is a restriction on how your game is played, these are normally in place before the game is started, the game cannot start unless these are correct The following are regulated by the governing body Number of player – how many in a team Playing surface – surface types Equipment – Specific equipment needed for sport or safety Health and Safety – many regulations to prevent injury Facilities – court, pool or track size Time – Duration of the match, intervals or stoppages Officials – Clear roles and responsibilities to ensure application of the rules. Scoring Systems – normally the team with the most points is the winner.
Application of the Rules	Officials apply the rules of the game, they need to make decisions when an offense has occurred and decide what to do next Officials will stop the game explain what is happening and what will happen next.
Roles of Officials	Different sports require different types of officials, each with their own roles and responsibilities. Umpires - Main decision makers - Cricket Referee – Ensures that all the rules of the game are followed - Football Judges - The judge observes the performers against a set criteria – Gymnastics Time Keepers – Restriction on time played, monitor time Starters – In charge of monitoring false starts – Swimming
Responsibility of Officials	Officials in each sport have a defined set of responsibilities. Appearance – Performers and officials wear specific uniform but different to identify whom is who. Equipment – Officials responsibility to ensure appropriate equipment for sport is available and safe. Qualifications – Officials have a recognised officiating qualification for their sport Fitness – Some sports require a high level of fitness to keep up with the field of play. Interpretation of the rules- Officials responsibility to apply and the rules and if broken then they are to take appropriate action. Control of Players – Officials ensure that the sport is played in a safe manner, if dangerous officials can sanction players. Effective communication – Officials ensure that players are aware of decisions and control players. Verbal and non- verbal communication Health and Safety – Officials are responsible for players, spectators, coaches and officials before during and after sporting events. Fair Play – Officials should promote fair play at all-time applying the rules fairly and consistently.
Skill	Necessary for effective performance in your sport. For example, in Hockey skills needed include dribbling, passing and hitting the ball

Breaking down a skill

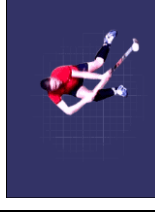
How to perform the skill. The technique to perform push pass for hockey is shown below

STEP ONE



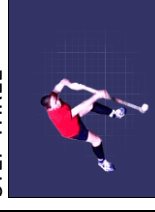
Your hands should be approximately 30cm apart with the left hand near the top of the stick and the right hand further down. Keep your eyes on the ball, with your feet apart and knees bent.

STEP TWO



Make sure your back foot is roughly in line with the ball. Keep your stick in contact with the ball as you begin to shift your weight from back to front foot.

STEP THREE



Follow through keeping your stick in contact with the ball for as long as possible, increasing the speed of your stick head as you near your front foot.

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Knowledge Organiser Islam					
1	Islam	The religion of the Muslims, a monotheistic faith regarded as revealed through Muhammad as the Prophet of Allah.	11	Sunnah	The traditions and practices of the Prophet Muhammad.
2	Allah	“The God” in Arabic.	12	Sunni	The branch of Islam with the majority of followers, Sunni meaning followers of the Sunnah.
3	Tawhid	The belief in the oneness of God.	13	Shia	The branch of Islam with the minority of followers, Shi’a meaning ‘House of Ali’.
4	Revelation	A message from God to human beings.	14	Sunni/Shia Split	A division in Islam which occurred after the death of the Prophet Muhammad on who should lead the Ummah.
5	Prophet Muhammad	An Arab religious, social, and political leader and the founder of Islam.	15	Caliphate	An area ruled by a Muslim leader.
6	Qur’an	The central religious text of Islam, believed by Muslims to be the final revelation from God.	16	The Five Pillars	The basic acts in Islam, considered mandatory by believers, and are the foundation of Muslim life.
7	Mecca	Holy city for Muslims established by Ibrahim and Ishmael.	17	Hajj	The Hajj is an annual Islamic pilgrimage to Mecca, Saudi Arabia, the holiest city for Muslims.
8	Hijrah	The migration of Muhammad from Mecca to Medina.	18	Greater Jihad	The spiritual struggle within oneself against sin.
9	Ummah	The worldwide Muslim community.	19	Lesser Jihad	Defending Islam from threat but must meet a range of strict conditions to be declared.
10	Hadith	The sayings of the Prophet Muhammad.	20	Arabic	The language the Qur’an is written in

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Knowledge Organiser Key Stage 3

Subject : Science Year: 8 Topic Title: Light and space

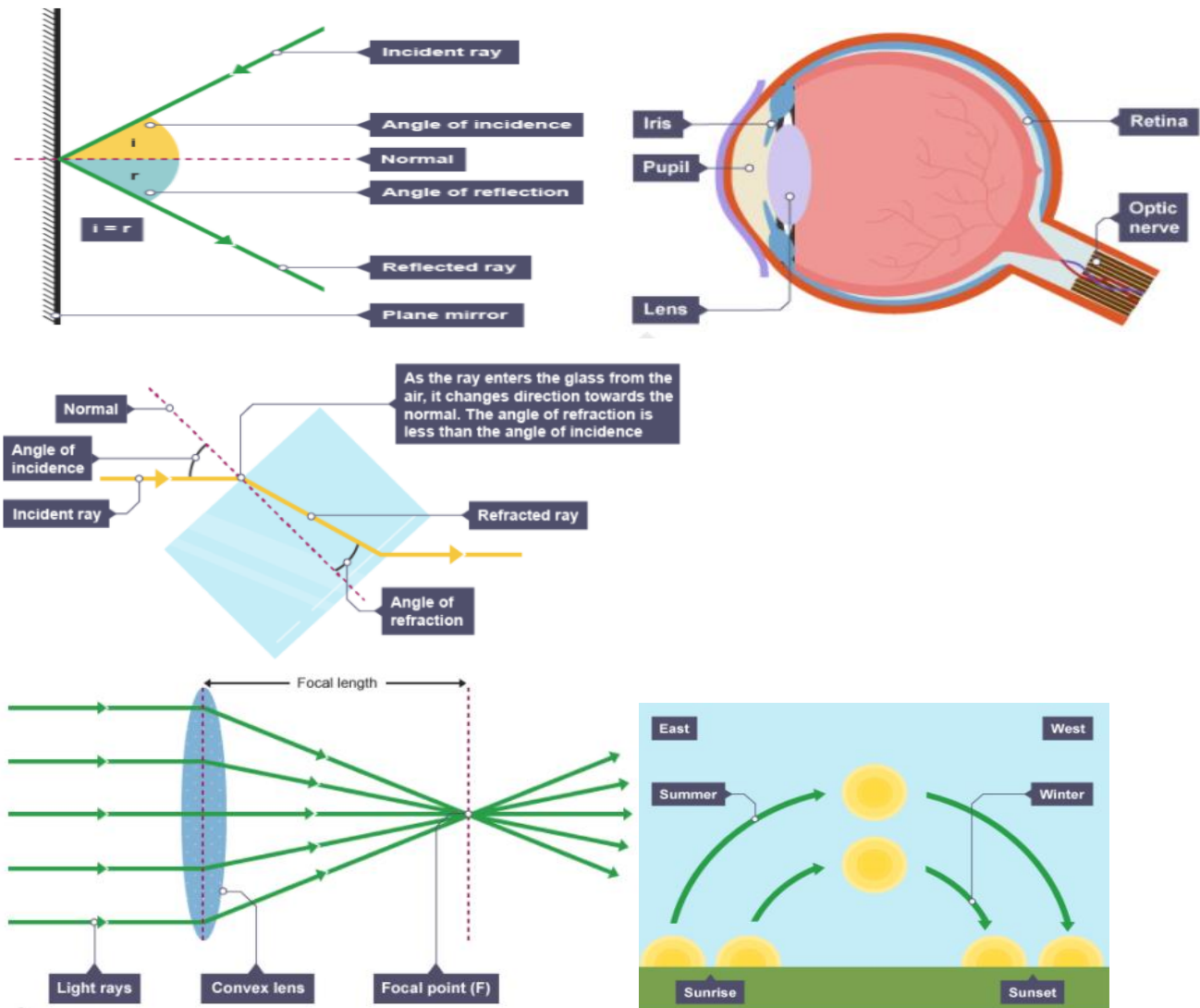
Key Facts

1. White light is a mixture of all colours of the visible light spectrum
2. White light can be split into different colours of spectrum using a prism –
 - a. This is because the light is refracted
3. Refraction: when light crosses the boundary of a different medium (substance)
 - a. It changes speed
 - b. Causes it to change direction
4. Law of reflection
 - a. Incident ray always travels towards to mirror
 - b. Reflected ray always travels away from mirror
 - c. Angle of incidence = angle of reflection
 - d. Specular reflection (smooth reflective surface): all light rays hit the surface in the same way and are reflected in the same way
 - e. Diffuse reflection/scattering (rough surface): the surface is bumpy so light hits the surface in different ways and gets scattered
 - f. Plane mirror = flat mirror
5. Primary colours are: Red, Green and Blue
 - a. These colours added together make magenta, cyan and yellow
6. Convex lenses: Curved on both sides of lens
 - a. Focus light at a single point – called a focal point
 - b. Used in: magnifying glasses, glasses we use to see with and telescopes
7. The retina is the photo sensitive part of the eye made from rods and cones
 - a. Rods: help us see shape of things
 - b. Cones: help use see colours
8. Iris controls to amount of light entering eye
9. The earth is on an axis (means it is tilted): this gives us seasons when we orbit sun
 - a. Countries tilted away from sun- winter
 - b. Countries tilted towards sun – Summer
10. One year is 365 days (and a quarter) (every four years there is a leap year and one extra day is added)
11. A day is 24 hours long (on Earth)

Key words

1. Specular reflection: when light hits a smooth reflective surface	2. Lens: focuses light
3. Diffuse Scattering: Light hits a rough surface	4. Cornea: outer layer of eye
5. Refraction: where light changes speed and direction when changing mediums	6. Iris: part of eye that narrows or widens to control amount of light
7. Incident ray: the light that travels from a light to a reflective surface	8. Mass: amount of particles substance made from
9. Light: part of EM spectrum	10. Weight: mass affected by gravity
11. Spectrum: Made of different wavelengths of transverse waves	12. Seasons: Winter, Spring, summer and Autumn: due to tilt of Earth around Sun
13. Eye: organ used to detect light	14. Stars: Luminous objects, planets orbit these
15. Retina: photosensitive layer at back of eye	16. Galaxies: Contain billions of solar systems

Diagrams



Potential misconceptions to avoid / errors students often make

1. Mass Vs Weight:
 - Mass is the amount of matter (particles it contains)
 - Weight is the force of gravity acting upon the mass
2. Colour of the spectrum: Red, Orange, Yellow, Green, Blue, INDIGO, VIOLET (NO PURPLE)
3. Seeing colours: We see different surfaces as different colours as all other colours are absorbed and the colour we see is reflected
 - White: Reflects all colour of spectrum into eye
 - Black absorbs all colours of spectrum
4. White light is all of the colours of the spectrum together

YR 8 Spanish: Term 1 Knowledge Organiser

¿Adónde vas normalmente de vacaciones? – Where do you normally go on holiday?

¿Adónde fuiste de vacaciones el año pasado? – Where did you go last year on holiday?

¿Adónde vas a ir de vacaciones el año próximo? – Where are you going to on holiday next year?



Todos los años (Every year) Cada año (Every year)		a Roma a Lisboa a Nueva York	en italia (in Italy) en portugal (in Portugal) en las estados unidos (in the USA)	con mis / sus amigos. (with my / his-her friends) con mi / su familia. (with my / his-her family) con mi / su cole (with my / his-her school)
	En verano (In summer) En primavera (In spring) En invierno (In winter) Durante las vacaciones escolares (During the school holidays)	viajo (I travel) viaja (he/she travels)	en tren (by train) en barco (by boat) en avión (by plane) en coche (by car) en autocar (by coach) en bici (on a bike) en moto (on a motorbike)	ya que es... (because it is) (muy / súper / bastante / (very / really / quite / rather) rápido (fast) barato (cheap) cómodo (comfortable) genial (great) práctico (practical) largo (it's a very long journey) menos caro que el avión (it's less expensive than the plane) más cómodo que el autobús (it's more comfortable than the coach)
			visitar el centro de la ciudad (visit the town-centre) hacer la natación / ir de compras / hacer esquí acuático / hacer windsurf/ pasear (go swimming / shopping / water skiing / windsurfing / for walks) usar la piscina descubierta (use the outdoor swimming pool) nadar (swim) relajarse (relax) tomar el sol (sunbathe) leer revistas (read magazines) ir al campo / ir de pesca / ir al restaurante (go to the countryside / fishing / to the restaurant)	

El año pasado (last year)	fui (I went) fue (s/he went) fuimos (we went)	a Paris a Madrid a Roma a Lisboa a Nueva York	en francia en españa en italia en portugal en las estados unidos
	viajé (I travelled) viajó (he/she travelled) Viajamos (we travelled)	en tren (by train) en barco (by boat) en avión (by plane) en coche (by car) en autocar (by coach) en bici (on a bike) en moto (on a motorbike)	ya que fue... (because it is) (muy / súper / bastante / (very / really / quite / rather) rápido (fast) barato (cheap) cómodo (comfortable) genial (great) práctico (practical) largo (it's a very long journey) menos caro que el avión (it's less expensive than the plane) más cómodo que el autobús (it's more comfortable than the coach)

El año pasado, durante las vacaciones, como (last year during the holidays as...)	hacía calor (it was hot)	todos los días (everyday)	nadé/nadamos en el mar (I /we swam in the sea)	lo pasé/pasamos bien (I had a good time)
	hacía fresco (it was cool)	cada día(every day)	tomé/tomamos el sol en la playa (I / we sunbathed at the beach)	lo pasé/pasamos bomba (I had a blast)
	hacía frío (it was cold)	cada mañana (every morning)	visité/visitamos monumentos (I / we visited monuments)	fue increíble (it was incredible)
	hacía buen tiempo (the weather was nice)	cada tarde (every afternoon)	comí/comimos helado (I / we ate ice-cream)	lo pasé/pasamos fatal (I had an awful time)
	hacía sol (it was sunny)	cada noche (every evening)	saqué/sacamos fotos (I / we took photos)	fue horrible (it was dreadful)
	llovía (it was raining)	a veces (sometimes)	compré/compramos recuerdos(I/ we bought souvenir)	fue un desastre (it was a disaster)
			hice/hicimos submarinismo (I / we went diving)	
			Fui/fuimos al parque(I / we went to a water park)	

Este verano (this summer) Este ano (this year) voy/vamos a ir (I/we're going to go) Quiero/queremos ir(I want to go /we want to go) Me/nos gustaría visitar (I/we would like to visit) a Costa Rica (to Mauritius) a una isla tropical (to a tropical island) a Mallorca (to Mallorca)	si hace calor (it is hot) si hay viento (it is windy) si hay tormenta (there are storms) si hace mal tiempo (the weather is bad) si hace sol (it is sunny) si llueve (it rains)	voy/vamos a ir de escaparates (I'm/we're going to go window shopping) voy/vamos a hacer windsurf (I'm going/we're going to go windsurfing) voy/vamos a hacer una excursión en autocar (I'm going/we're going to go on a coach trip) voy/vamos a hacer esquí acuático (I'm going/we're going to go waterskiing) voy/vamos a ver los sitios históricos (I'm going/we're going to visit historic sites)	lo pasaré/pasaremos bien (I'm going/we're going to have a good time) lo pasaré/pasaremos bomba (I'm going to have a blast) será flipante (it will be amazing) lo pasaré/pasaremos fatal (I/we will have an awful time) será un desastre (it will a disaster) será horrible (it will be dreadful)
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Year 8

Term 2

Contents

English

Geography

IT

Maths

Music

PE

Science

Spanish

Core Knowledge and Skills from Unit		Core Message of Each Diary	
By the end of this unit, you will have a strong grasp of the following Key & Core Knowledge and Skills <u>Knowledge</u> - You will have a basic knowledge of the contexts of the three wars our diarists were writing about (WW2, the Yugoslav wars and the Ukraine War) - You will have an awareness of how the three diarists (Anne, Zlata and Andrey) feel at the following points in their diaries: -Signs of Change (before the war breaks out or escalates) -During the conflict -After the conflict (the aftermath) - You will have considered how diaries written for publication (Kurkov) are different from those written for personal reasons (Anne and Zlata) <u>Skills:</u> - You will understand the main conventions of the diary format (e.g. direct address, use of personal perspective, conversational tone etc) - You will have become fluent at using elements of the IRC to annotate the diary extracts - You will have developed your ability to write confidently and analytically about writer's perspectives (viewpoints) in non fiction texts - You will have developed your ability to compare the effects of war on the diarists - You will have developed your understanding of how readers can empathise with the diarists and their families and how the reader might be affected.		In this unit we explore how three different writers have used a diary format to communicate their innermost thoughts and feelings about the wars (conflicts) that they unfortunately found themselves in. - Our first writer is Anne Frank, a Jewish teenager who was in hiding from persecution by the Nazis for two and a half years during WW2 - Anne documents what life was like for her family under the persecution from the Nazis - She used her diary as a friend (called Kitty) to confide in, which helped her make sense of her feelings and experiences. She ranges from optimistic to fearful in her emotions. She feels very isolated during her time in hiding. - Anne was found by the Nazis and sent to a concentration camp (part of the Holocaust), where she died in 1945. Her father, Otto Frank, made sure that her diary was published. It sold more than 30 million copies. - Our second writer is eleven year old Zlata Filipovic who was stuck in Sarajevo from the start of 1992 until the end of 1993, while the Yugoslav war raged around her. - She kept a diary (who she called Mimmy) of her experiences, which ranges from anger to acceptance in tone. She also feels isolated. - Her diary also became a bestseller and has helped us to better understand the effect of conflict on young people. Zlata suffered with survivor's guilt after she was rescued and went to live in Paris, while her friends were stuck in the conflict. - Our third writer is Andrey Kurkov, a Ukrainian novelist who has written and published a <i>Diary of an Invasion</i> about the first year of the current war in the Ukraine, which began in February 2022. He gives us his perspective on the war so far. - Kurkov always knew his diary would be published, which makes it different from Anne Frank and Zlata Filipovic's diaries.	
Key Writer's Methods in the Voices of War SOW: Learn them!			
Method	Definition	Example	Purpose
Diary Format	A diary is a chronological personal record of thoughts, feelings and events.	All three of our authors use the diary format to articulate their experiences of conflict.	Although Anne Frank and Zlata Filipovic kept their diaries for personal reasons, Andrey Kurkov always intended his for publication.
Direct Address	Language used to speak directly to someone (often involving the pronoun 'you').	'Hey Diary! You know what I think? Since Anne Frank called her diary Kitty, maybe I could give you a name too.' Zlata Filipovic	The use of direct address makes it seem like the diary writer is confessing things directly to the reader.
Emotive Language	The deliberate choice of words to influence emotion in the reader/ audience.	Anne Frank : 'When I went to bed at nine, my legs were still shaking' (after an air raid)	All three of our authors use emotive language to convey and try to make sense of the horror of war.
Personification	The attribution of human feelings and emotions to an inanimate object.	Anne Frank talking to her diary Kitty: 'I hope I will be able to confide everything to you , as I have never been able to confide in anyone'	Personifying the diary shows how Anne uses it as a confidante and therefore the truthfulness of feeling as she sees it.
Rhetorical questions	A question asked in order to create a dramatic effect or to make a point rather than to get an answer.	'Why did this war have to ruin everything for her?' Zlata Filipovic	It shows how confused and unsure Anne is about her situation. It is also used to show her frustration over certain people's actions.

Word	Definition	Example of the word in use
Confide	To trust someone with a secret or private matter.	All three writers confide in their diaries.
Conflict	An extended struggle, fight or battle. Often used as a synonym for war.	Serious conflicts or wars nearly always result in suffering and death on a large scale. All three of our diarists are writing their diaries as a response to the conflict or war that they find themselves in
Empathy	The ability to understand and share the feelings of another.	The use of emotive language helps the reader empathise with the situations the writers are in.
Fear	a feeling of anxiety concerning the outcome of something or the safety of someone.	Zlata Filipovic and Andrey Kurkov fear that they will be bombed in an air raid or captured or killed by invading forces.
Imperative Verb	A verb that tells someone to do something. This means the sentence becomes an order or a command.	The imperative verbs show that there is no choice, they have to go into hiding.
Isolation	Being alone or apart from others. This creates a sense of loneliness and sadness.	Anne Frank expresses feelings of isolation throughout the diary, but this is very clearly seen when her family first move into the annex
Persecution	Hostility and ill-treatment, especially because of race or political or religious beliefs; oppression.	Anne Frank's accounts of life in the annex from the diary are testimony to the persecution that Jewish people faced at the hands of the Nazis during WW2.
Perspective	A particular attitude towards something; a point of view.	All three diaries offer a first person perspective on conflict.
Pronouns	A word that replaces a noun (name) in a sentence.	Anne refers to her diary using the pronoun 'you'.
Survival	The continuation of life or existence, especially after a dangerous event, such as a war.	Anne Frank does not survive as she dies of starvation in a concentration camp in 1945. But Zlata does survive the Yugoslav war.
Survivor's Guilt	A form of guilt that can develop after surviving a life threatening situation that others perished in	Zlata Filipovic struggles with survivor's guilt at the end of her diary as she is taken to safety in Paris.
The Holocaust	A genocide during World War II in which Nazi Germany murdered six million European Jews.	Anne Frank wrote her diary during the Holocaust .
Tone	the general character or attitude of a place, piece of writing, situation, etc.	Zlata Filipovic often uses a tone of disbelief in her diary as she struggles to comprehend what is happening.
Ukrainian War	An ongoing conflict between Russia and Ukraine, which began in 2014 and escalated in February 2022 with the Russian invasion of the Ukraine.	The Russo-Ukrainian war is a tragedy that has shocked the world.
Yugoslav Wars	A series of wars that took place in the former Yugoslavia from 1991-2001, mostly between the current states of Bosnia, Croatia and Serbia, following the collapse of the Soviet Union.	The Yugoslav Wars were the first major European War since WW2. They shocked many with their ferocity.

Tectonics

Background:	
1.	The Earth's structure is made up of layers. (A)
2.	The characteristics of these layers fuels tectonic plate theory and the resulting hazards which occur along plate boundaries. (B)
3.	There are four different plate boundaries, each with their own characterises and resulting hazards. (C)
4.	Volcanoes can be found along divergent and convergent boundaries, although the volcanoes found at these boundaries are different. (D)
5.	Earthquakes take place along all of the boundaries, but are often most significant at conservative boundaries. Earthquakes have key features and are measured using the Richter scale. (E)
6.	People continue to live in tectonic areas for a number of reasons. (F)
7.	Some of these reasons relate to how we monitor, protect and plan for such hazards. (G)
8.	However, the impacts of these hazards can still be significant; although they can vary based upon a countries level of development. (H, F)

The layers of the Earth (3)	
Lithosphere (Crust)	The thin outer layer of the earth
Asthenosphere (Mantle)	Middle layer of the earth, between the crust and the core, approx. 2900km thick.
Core	The centre and hottest layer of the earth, broken into the inner (solid) and outer core (liquid)

Theory (4)	
Plate boundaries	The place where plates meet.
Convection currents	Currents in the Earth's mantle which rise from the Earth's core and are strong enough to move tectonic plates.
Oceanic crust	The part of the Earth's crust under the oceans, usually 6-8km thick
Continental crust	The part of the Earth's crust which contains land and is 30-50km thick.

C.	Different plate boundaries (4)	
Divergent	Where tectonic plates move apart and new land is created.	
Convergent	Where two plates come together, and the oceanic plate is subducted, leading to violent volcanic eruptions.	
Conservative	Where tectonic plates move alongside, or past each other.	
Collision	Where continental plates move towards each other, forming mountains.	

D.		Volcanoes (3)
Shield volcano		A gently sloping volcano formed by runny lava, usually at a divergent boundary.
Composite volcano		A steep volcano formed by alternating layers of lava and ash, on convergent boundaries.
Pyroclastic flow		Torrent of hot ash, rock, gas and steam from a volcano.

G.		Volcanoes
Monitoring (2)		1. The shape may change. 2. Increase in gases given off e.g. sulphur dioxide.
		Lava diversion channels.
Protect		1. Evacuation. 2. Emergency services trained.
Planning (2)		

H.		Effects of tectonic hazards (2)
Primary effects		Direct impacts of an event e.g. people killed, injured, or buildings collapse.
Secondary effects		The indirect impacts of an event, usually occurring in the weeks, hours, months after the event e.g. the outbreak of disease from contaminated water.

I.	Examples	
Developing Haiti Port Au Prince (Jan 2010)	1. 318,000 dead. 2. 1.5 million homeless. 3. Cholera outbreak killed 8,000.	
	Developed New Zealand Christchurch (Feb 2011)	
	1. 181 dead. 2. 80% of the city without electricity. 3. The Rugby World Cup was cancelled. 4. Schools closed for 2 weeks.	

E.	Earthquakes (4)	
Epicentre		The point on the Earth's surface directly above the focus of an earthquake.
Focus		The source of an earthquake beneath the Earth's surface.
Seismic waves		Fast waves of energy generated from the focus of an earthquake.
Richter scale		A scale used to measure the strength of an earthquake.

F.		Living in the tectonic danger zone
Volcanoes (4)		1. Jobs in tourism. 2. Geothermal energy created. 3. Ash makes the ground fertile, which is good for farming. 4. Diamonds and gold from previous eruptions can be mined.
		1. Friends and family live in the area. 2. It has not happened in such a long time, so people take the risk. 3. Employment in the area.
Earthquakes (3)		

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Information About The Line

Target audiences are the person or group of people that a product will be aimed at (see stations below!)

Station Information

DEMOGRAPHICS	Data about the particular groups within a population
DEMOGRAPHIC PROFILE GROUP	Media producers define and categorise their audience through these
ETHNICITY	White; Mixed / Multiple ethnic groups; Black / African / Caribbean / Black British; Other ethnic group
AGE	Young children; Teenagers; Young adults; Millennials; Middle-aged people; Elderly people; Specific age groups
GENDER	Male/female are examples
INCOME	When you consider the disposable income, someone has left after all bills are paid
LOCATION	Rural; Semi-rural; Town; City; Region; County; Country
SEXUALITY	Heterosexual / Straight; Gay / Lesbian; Bisexual; Other
ACCESSIBILITY	You should make products available to as many people as possible

Points of Interest

It is very important to consider the target audience when you create digital products. You should consider the content and typography. For example:



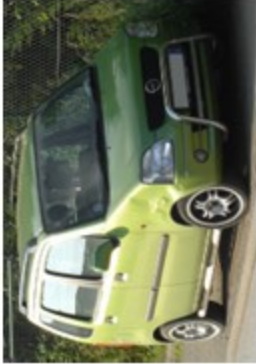
The font and the language on the left is not formal enough!

The media industry groups people through demographic profiles. Occupations have the categories A, B, C1, C2, D and E.



For example A represents Upper Middle Class and includes doctors and lawyers.

Need a way to remember the types of audiences? This was a Opel Agila (Vauxhall in the UK). Imagine there's more than one. And they are electric. They will become and E-AGILAS!



Ethnicity Age Gender Income Location Accessibility Sexuality

Getting the best out of this line

Read the client requirements very carefully – work out the audience and think of how you can meet their needs.

Frequently Asked Questions

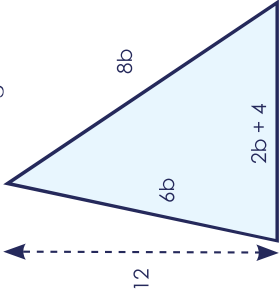
KNOWLEDGE	What are the six types of audience you need to consider for Creative iMedia?
COMPREHENSION	How to media producers use demographics to classify people by their jobs?
APPLICATION	What approach would you use to work out the target audience?
ANALYSIS	Can you identify the different aspects you need to consider to ensure accessibility?
SYNTHESIS	If you were producing and advert for a new theme park ride, what would happen if you did not target the correct audience?
EVALUATION	Do you think that audience profiling is useful when creating media products?

How well do you know this line?

1. Research the demographic profiles used by the media industry in more depth and make notes.
2. Create a mind map with the central idea of "Audience Characteristics". Add sub-nodes with anything you might consider if you had to design a digital product. You may have to generalise in order to come up with ideas!

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KPI 8.06 Linear Equations			
1) Inverse operations	Addition and Subtraction are inverse operations. Multiplication and Division are inverse operations. Squaring and taking the square root are inverse operations.	2) Variable	A letter used to represent any number.
3) Coefficient	The number to the left of the variable. This is the value that we multiply the variable by. $4x \rightarrow$ The coefficient of x is 4. $x \rightarrow$ The coefficient of x is 1.	4) Term	A single number, variable or numbers and variables multiplied together.
5) Collecting like terms	Combining the like terms in an expression. $7x + 3y - 2x$ is simplified to $5x + 3y$.	6) Expression	A mathematical statement which contains one or more terms combined with addition and/or subtraction signs e.g. $4x + 3y$.
7) Linear equation	Contains an equals sign (=) and has one unknown. E.g. $5x - 2 = 2x + 7$.		
Use inverse operations to find the solution of an equation.			
8) Solve	E.g. 1. (One step)	E.g. 2. (Two step)	E.g. 3. (Unknown on both sides)
	$\begin{array}{l} \frac{x}{4} = 12 \\ \times 4 \qquad \times 4 \\ x = 48 \end{array}$	$\begin{array}{l} 3p - 7 = 8 \\ +7 \qquad +7 \\ 3p = 15 \\ \div 3 \qquad \div 3 \\ p = 5 \end{array}$	$\begin{array}{l} 2x + 10 = 19 - 9x \\ +9x \qquad +9x \\ 11x + 10 = 19 \\ -10 \qquad -10 \\ 11x = 9 \\ \div 11 \qquad \div 11 \\ x = \frac{9}{11} \end{array}$

KPI 8.07 Forming and Solving Linear Equations	
E.g. 1 Jake is y years old. Lilly is 15. Kobe is 3 years younger than Jake. They have a total age of 36. Work out their individual ages. $\begin{array}{l} y + 15 + y - 3 = 36 \\ 2y + 12 = 36 \\ 2y = 24 \\ y = 12 \end{array}$ Jake: 12, Lilly: 15, Kobe: 9	E.g. 2 The area of the triangle is 120 cm^2. Find the value of b.  $\frac{12(2b + 4)}{2} = 120$ $\frac{24b + 48}{2} = 120$ $12b + 24 = 120$ $12b = 96$ $b = 8\text{cm}$
1) Form and solve a linear equation	

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Knowledge Organiser



Knowledge Organiser Key Stage 3

Subject : MUSIC

Year: 8

Topic Title: BAND SKILLS 2

Lesson 1 – Major/Minor Chords (Horse With No Name – America)

Key Facts from this lesson

A **chord** is two or more notes played at the same time. The most common type of chord is a **triad**. This is a three note chord using the 1st, 3rd and 5th pitches in a scale. **Chords** can be **major** or **minor**.

Major = bright and happy. **Minor** = dark and sad

Chords and Pitches

Em = E, G, B **D** = D, F#, A

Key words and definitions from this lesson:

- ★ **Chord** – Two or more pitches played at the same time
- ★ **Chord Diagram** – A way of presenting how to play a chord on an instrument
- ★ **Major** – A tonality with a bright, happy feel
- ★ **Minor** – A tonality with a dark, sad feel
- ★ **Triad** – A three note chord

Diagrams/ Maps/ illustration to help with learning

Guitar Chord Diagrams

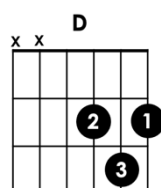
X = Do not play string
O = Play string open

Vertical line = strings
Circle = finger placement
Number = which finger to use
Horizontal line = frets

Piano Chord Diagrams

Potential misconceptions to avoid / errors students often make

'X' means DO NOT PLAY THAT STRING.



In this chord you will only be strumming **4 STRINGS**



A Horse With No Name - America

[Intro]

Em D x2

[Verse 1]

Em D
On the first part of the journey
Em D
I was looking at all the life
Em D
There were plants and birds and rocks and things
Em D
There were sand and hills and rings
Em D
The first thing I met was a fly with a buzz
Em D
And the sky with no clouds
Em D
The heat was hot and the ground was dry
Em D
But the air was full of sound

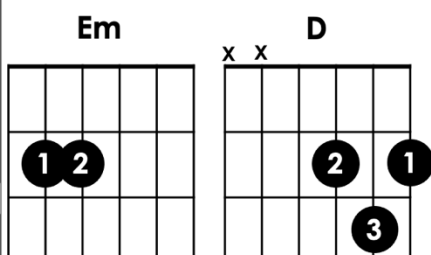
[Chorus]

Em D
I've been through the desert on a horse with no name
Em D
It felt good to be out of the rain
Em D
In the desert you can remember your name
Em D
'Cause there ain't no one for to give you no pain
Em D
La, la, la lala la la la, la, la
Em D
La, la, la lala la la la, la, la

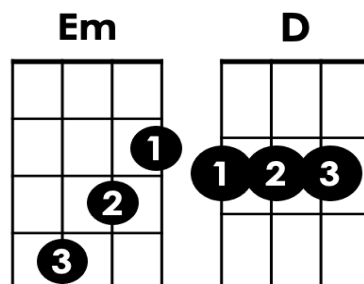
Drum Notation



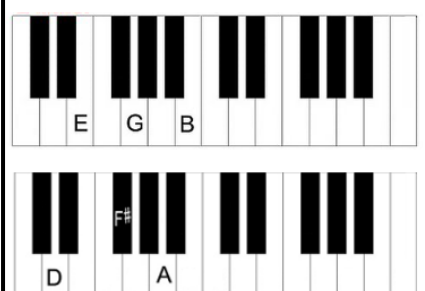
Guitar Chord Diagrams



Ukulele Chord Diagrams



Piano Chord Diagrams



Year 8 PE - Task 2 & 4

Fit 4 Life Knowledge Organiser

Calculating Training Zones



Aerobic and anaerobic training zones

60 – 85%

Aerobic Training Zone

85 – 100%

Anaerobic Training Zone

Aerobic means "with oxygen," and anaerobic means "without oxygen." Anaerobic exercise is the type where you get out of breath in just a few moments, like when you lift weights for improving strength or when you sprint.

What is the difference?

Robert is 55 years old.
Work out his aerobic training zone.

$$\begin{aligned} 220 - 55 &= 165 \\ 0.60 \times 165 &= 99 \\ 0.85 \times 165 &= 140 \\ \text{Aerobic Zone} &= 99-140 \text{ bpm} \end{aligned}$$

Rachel is 30 years old.
Work out her anaerobic training zone.

$$\begin{aligned} 220 - 30 &= 190 \\ 0.85 \times 190 &= 162 \\ \text{Anaerobic Zone} &= 162-190 \text{ bpm} \end{aligned}$$

The Borg (1970) Rating of Perceived Exertion (RPE) Scale

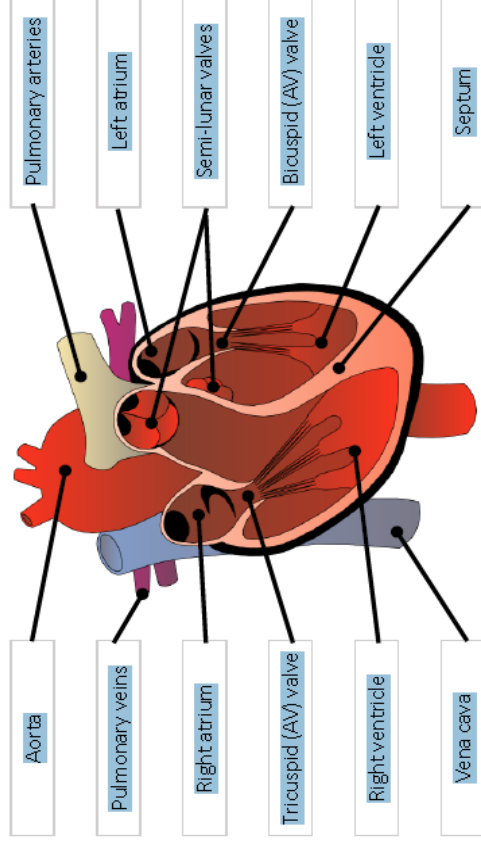
- Developed by Professor Gunnar Borg in 1970
- Can be used to determine exercise intensity
- Practice is needed to learn how to use the scale

$$\text{RPE} \times 10 = \text{HR (bpm)}$$

For example, if an individual gives a rating of '17' – 'Very hard' – this means that their HR will be approximately 170 bpm.

Rate of Perceived Exertion	Intensity
6	No exertion at all
7	Extremely light
8	
9	Very light
10	
11	
12	
13	Somewhat hard
14	
15	Hard (heavy)
16	
17	Very hard
18	
19	Extremely hard
20	Maximal exertion

STRUCTURE OF THE HEART



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Knowledge Organiser Key Stage 3

Subject: Science

Year: 8

Topic Title: Particles

Key Facts

1. Atoms are tiny particles that everything is made up of. They are made up of smaller particles called, protons, neutrons, and electrons
2. There are over a hundred different elements which are arranged on the periodic table. They are made up of the same type of atoms. The atoms of some elements do not join together, but instead they stay as separate atoms, e.g. Helium. The atoms of other elements join together to make molecules, e.g. Oxygen and Hydrogen.
3. A Russian scientist, **Mendeleev** produced the first periodic table in the 19th century
4. The modern periodic table is based closely on the ideas he used where elements are arranged in order of increasing atomic number (number of protons).
5. The horizontal rows in the periodic table are called **periods** and vertical columns are called **groups**.
6. The **periodic table** is also split between Metals and Non-metals
Metals have properties such as being shiny, good conductors of heat and electricity and being malleable (they can be bent and shaped without breaking)
7. **Chemical formulae**
We use chemical symbols to stand for the elements. For example, C stands for Carbon, O stands for Oxygen, S stands for Sulfur and Na stands for Sodium.
For molecules we use the chemical symbols of the atoms it contains to write down its formula. For example, the formula for **carbon monoxide** is **CO**.
8. **Conservation of mass** is when atoms are rearranged in a chemical reaction, they are not destroyed or created.
9. We summarise **chemical reactions** using equations: reactants $\longrightarrow$ products.
10. **Reactants** are shown on the left of the arrow and **products** are shown on the right of the arrow.
For example, Copper + Oxygen $\longrightarrow$ Copper oxide
This shows us that **Copper** and **Oxygen** are the **reactants** and **Copper oxide** is the **product**.

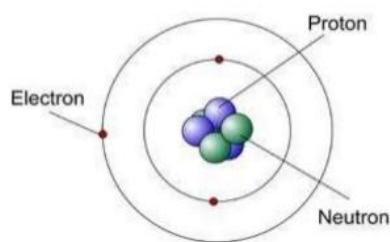
Key words

1. **Atom:** Tiny particle that everything is made up of
2. **Element:** Substances made of only one type of atom
3. **Compound:** Contains atoms of two or more different elements and are chemically joined together
4. **Molecule:** Atoms of elements joined together.
5. **Groups:** Vertical columns in the periodic table
6. **Periods:** Horizontal columns in the periodic table
7. **Reactants:** The substances that react together
8. **Products:** The substances that are formed in the reaction
9. **Word equation:** Shows the names of each substance involved in the reaction

Diagrams

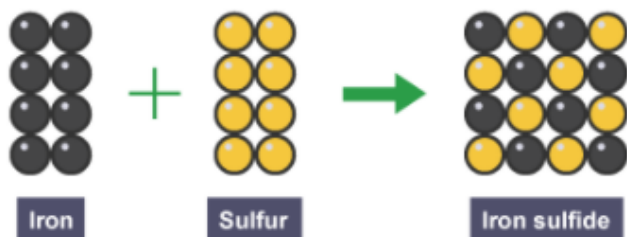
Draw Dalton's atomic model

Dalton's atomic model



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Chemical reactions:



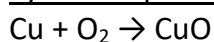
Symbol equations

A balanced **symbol** equation includes the **symbols** and **formulae** of the substances involved. For example:

Word equation:

Copper + Oxygen → Copper Oxide

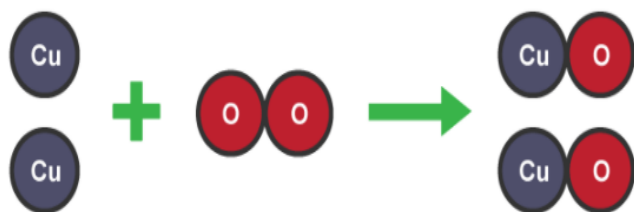
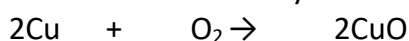
Symbol equation (unbalanced):



There is one copper atom on each side of the arrow, but two oxygen atoms on the left and only one on the right. This is an **unbalanced equation**.

A **balanced equation** has the **same number of each type of atom on each side of the arrow**.

Here is the balanced symbol equation:



Some examples of balanced symbol equations

- $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$
- $\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
- $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$
- $\text{CuCO}_3 \rightarrow \text{CuO} + \text{CO}_2$
- $\text{Mg} + 2\text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$

We can use the periodic table to predict the properties of elements in the same group.

Group 7	Melting point	Density	Reactivity
Fluorine	Increases down the group	Increases down the group	Decreases down the group
Chlorine			
Bromine			
Iodine			

Group 1	Melting point	Density	Reactivity
Lithium	Decreases down the group	Increases down the group	Increases down the group
Sodium			
Potassium			
Rubidium			

Numbers in formulae

We use numbers to show when a molecule contains more than one atom of an element.

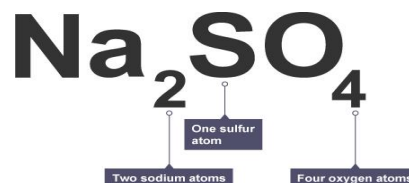
The numbers are written **below** the element symbol. For example, CO_2 is the formula for carbon dioxide.

It tells you that each molecule has **one carbon atom** and **two oxygen atoms**.

The **small numbers go at the bottom**. For example:

- CO_2 is correct;
- CO^2 and CO_2 are wrong.

Some formulae are more complicated. For example, the formula for sodium sulfate is Na_2SO_4 . It tells you that sodium sulfate contains two sodium atoms ($\text{Na} \times 2$), one sulfur atom (S) and four oxygen atoms ($\text{O} \times 4$).



Potential misconceptions to avoid / errors students often make

1. Atomic model

Only protons and neutrons are found in the nucleus of the atom and electrons are found on the shells.

2. Elements and Compounds

Atoms of some elements **do not join** together e.g Helium(H) and atoms of other elements **do join together** to make molecules e.g Oxygen O₂ and Hydrogen H₂

Compounds contain atoms of **two** or **more** different elements and these **are chemically bonded** e.g Water (H₂O) Two hydrogen atoms chemically bonded with one atom of oxygen.

3. Chemical formulae

Be careful with the use of capital letters when writing chemical formulae. For example CO means a molecule of carbon monoxide but Co is the symbol for Cobalt and **NOT** carbon monoxide.

Every chemical symbol starts with a capital letter, with the second letter written in lower case if there are two letters in the element name.

4. Numbers in formulae

The numbers are written **below** the element symbol. For example for carbon dioxide CO₂.

This tells us that each molecule has one carbon atom and two oxygen atoms. These are incorrect formulae of carbon dioxide, CO₂ and CO² as the number isn't written below the element.

5. Word equations/Symbol equations

Word equations show the names of each substance involved in a reaction, and must not include any chemical symbols or formulae

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Knowledge Organiser Key Stage 3

Subject : Science

Year: 8

Topic Title: Digestion

Key Facts

1. Key nutrients, their uses in the body and where to find them:

Nutrient	Use in the body	Good sources
Carbohydrate	To provide energy	Cereals, bread, pasta, rice and potatoes
Protein	For growth and repair	Fish, meat, eggs, beans, pulses and dairy products
Lipids (fats and oils)	To provide energy. Also to store energy in the body and insulate it against the cold.	Butter, oil and nuts
Minerals	Needed in small amounts to maintain health	Salt, milk (for calcium) and liver (for iron)
Vitamins	Needed in small amounts to maintain health	Fruit, vegetables, dairy foods
Dietary fibre	To provide roughage to help to keep the food moving through the gut	Vegetables, bran
Water	Needed for cells and body fluids	Water, fruit juice, milk

2. A **balanced diet** contains the correct amounts of necessary nutrients.
3. An **imbalanced diet** can contain too much or too little of a particular nutrient.
4. Too little of a particular nutrient is called a **deficiency**. e.g:
 - iron deficiency causes anaemia, where there are too few red blood cells;
 - iodine deficiency can cause a swelling in the neck called goitre
 - vitamin A deficiency can cause blindness;
 - vitamin C deficiency causes scurvy, which makes the gums bleed;
 - vitamin D deficiency causes rickets, which makes the legs bow outwards in growing children.
5. If the amount of energy you get from your food is different from the amount of energy you need, your diet will be imbalanced (not enough energy from food can lead to starvation; too much energy from food can lead too obesity as energy not burned off is stored as fat)
6. Obesity causes health problems such as heart disease
7. Different people need different amounts of energy from their food depending on their sex, age and how active they are
8. Energy in food can be measured in joules (J), kilojoules (kJ) or calories (kcal)
9. Our digestive system contains helpful bacteria which improve our digestion, stop harmful bacteria from multiplying and produce vitamins
10. Food is **digested** in the mouth, stomach and small intestine;
11. Digested food is **absorbed** into the bloodstream in the small intestine;
12. Excess water is absorbed back into the body in the large intestine;
13. Undigested food passes out of the anus as faeces;
14. The liver produces **bile**, which helps the digestion of lipids (fats and oil).

15. The pancreas produces biological **catalysts** called digestive **enzymes** which speed up the digestive reactions
16. Our small intestine is lined with **villi** which give it a larger surface area, speeding up absorption of nutrients;
17. The walls of the villi are one cell thick, to make absorption of nutrient easier (gives them a shorter path to travel across)
18. Villi contain lots of blood vessels so nutrients can quickly be absorbed into the blood
19. Enzymes are responsible for digesting large food molecules into small nutrients

Key words

Malnutrition – a diseases caused by a lack of a particular nutrient

Probiotics – foods containing good bacteria

Prebiotics – foods containing nutrients FOR our good bacteria

Ingestion - eating

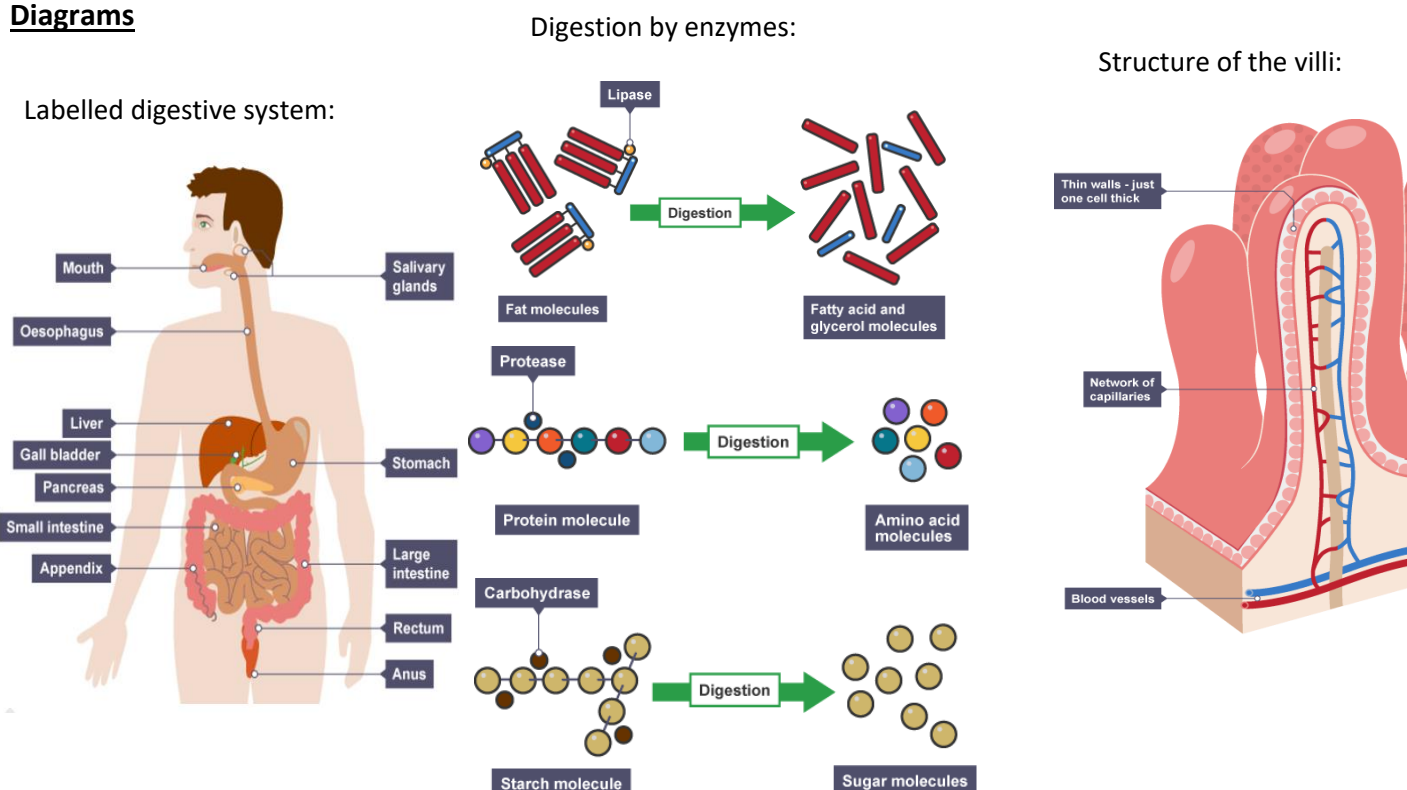
Digestion – breaking down large insoluble food molecules into small, soluble nutrient

Absorption – small, soluble nutrients moving into our blood

Enzyme – a molecule that speeds up the digestion of large food molecules

Active site – part of the enzyme with a specific shape, where the food molecule fits into it

Diagrams



Potential misconceptions to avoid / errors students often make

Students often lose marks because they forget to use the term 'active site' when explaining what enzymes do and why they work better at certain temperatures/pHs – if a question about enzymes is worth 2 marks or more, chances are you NEED to refer to the enzyme's ACTIVE SITE for one of those marks

A lot of questions about digestion require you to analyse graphs. Some advice for this:

- Work out what 1 small square is worth on your graph
- Plot and read points ACCURATELY off the graph (don't assume a point is exactly on a line!)

You might be required to convert units from kJ to J or J to kJ when looking at the energy stored in food:
There are 1000J in a kJ so:

- To convert from kJ to J you $\times 1000$
- To convert from J to kJ you $\div 1000$

YR 8 Spanish: Term 2 Knowledge Organiser

- ¿Qué haces durante tu tiempo libre? – What do you do in your free time?
- ¿Qué hiciste la semana pasada? – What did you do last week?
- ¿Qué vas a hacer el fin de semana que viene? – What are you going to do next weekend?



Todos los días (Every day) Cada día (Every day) Siempre (Always) A menudo (Often) A veces (sometimes) De vez en cuando (from time to time) Una vez a la semana (once a week)	navego por Internet (I surf the net) paseo el perro (I walk the dog) escucho música (I listen to music) juego a la videoconsola (I play on the game console) practico deportes (I play sports) salgo con mis amigos (I go out with my friends) bailo salsa (I dance the salsa) chateo en mi móvil (I chat on my phone) veo la televisión (I watch TV) leo libros (I read books)	porque (because) dado que (because) ya que (because) pero (but) sin embargo (however)	es (it is) no es (it isn't)	muy (very) un poco (a bit) bastante (quite) demasiado (too)	aburrido (boring) agotador (tiring) duro (tough) malsano (unhealthy) peligroso (dangerous) una pérdida de tiempo (a waste of time) apasionante (thrilling) divertido (fun) emocionante (exciting) energético (energetic) sano (healthy) fantástico (fantastic) relajante (relaxing)
Ayer (yesterday) La semana pasada (last week) Anoche (last night) El fin de semana pasado (last weekend)	navegué por Internet (I surfed the net) Paseé el perro (I walked the dog) escuché música (I listened to music) jugué a la videoconsola (I played on the game console) practiqué deportes (I played sports) salí con mis amigos (I went out with my friends) bailé salsa (I danced the salsa) chateé en mi móvil (I chatted on my phone) Ví la televisión (I watched TV) leí libros (I read books)		fue (it was) No fue (it wasn't)		

La próxima semana voy a (next week I am going to) El fin de semana próximo vamos a (next weekend we are going to) Mañana voy a (tomorrow I am going to)	navegar por Internet (surf the net) descansar en casa (relax at home) escuchar música (listen to music) jugar a la videoconsola (play on the game console) practicar deportes (play sports) salir con mis amigos (go out with my friends) bailar salsa (dance the salsa) chatear en mi móvil (chat on my phone) ver la televisión (watch TV) leer libros (read books)	porque (because) dado que (because) ya que (because) pero (but) sin embargo (however)	Va a ser (it is going to be) No va a ser (it is not going to be)	muy (very) un poco (a bit) bastante (quite) demasiado (too)	aburrido (boring) agotador (tiring) duro (tough) malsano (unhealthy) peligroso (dangerous) una pérdida de tiempo (a waste of time)
					apasionante (thrilling) divertido (fun) emocionante (exciting) energético (energetic) sano (healthy) fantástico (fantastic) relajante (relaxing)

Me gustan (I like) Me molan (I really like) Prefiero (I prefer)	Me encantan (I love) Me apasionan (I am passionate about) Me gusta ver (I like to watch)	No soporto (I can't stand) me aburren (they bore me)
los realities (reality TV) los programas de deportes (sports programmes) los programas de humor (a comedy programme) los concursos (a game show) los documentales (documentaries) las noticias (the news) las telenovelas (soaps) las series americanas (american) (series)	las películas de ciencia ficción (science fiction films) las películas de fantasía (fantasy films) las películas de acción (action films) las comedias (comedies) las películas de horror (horror films) las películas históricas (historic films)	
	porque (because) / dado que (because) / ya que (because) / pero (but) / sin embargo (however)	
	son (they are) no son (they are not)	
	muy (very) / un poco (a bit) / bastante (quite) / demasiado (too)	
predecibles (predictable) decepcionantes (disappointing) escalofriantes (chilling / hair-raising) fatales (awful)	divertidos/as (fun) educativos/as (educational) cautivadores (captivating)	entretenidos/as (entertaining) impactantes (striking) Sangrientos/as (gory)

Me gustan (I like) Me molan (I really like) Me encantan (I love)	Escucho (I listen)	No soporto (I can't stand) No me interesa (I am not interested in)
el rap el rock el heavy metal el pop la música electrónica la música clásica	rap rock heavy metal pop música electrónica música clásica	el rap el rock el heavy metal el pop la música electrónica la música clásica
porque (because) / dado que (because) / ya que (because)		
la letra (the lyrics) el ritmo (the rhythm) la melodía (the melody)	la letra es (the lyrics are) el ritmo es (the rhythm is) la melodía es (the melody is)	la letra no es (the lyrics are not) el ritmo no es (the rhythm is not) la melodía no es (the melody is not)
está de moda (fashionable/trendy) Relajante (relaxing) Original (original) Pegadizo/a (catchy) Lento/a (slow) Rápido/a (fast)		

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