

Buckler's Mead Academy

Knowledge Organiser

Year 8

Term 3—Spring 2023

"In a time of turbulence and change, it is more true than ever that knowledge is power"

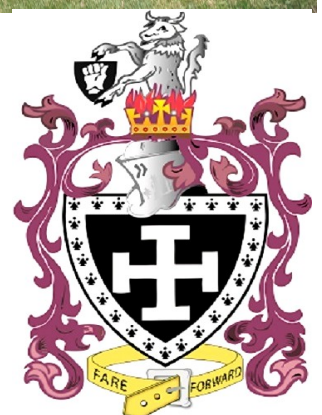
John F Kennedy

Inspiring Education for All

Name:

Tutor:

Ready, Responsible, Respect



Your Knowledge Organiser

Contents

How To Use your Knowledge Organiser	p.3
Look Cover, Write, Check, Correct	p.4
Art	p.5
Computing.....	p.6
Food & Nutrition	p.7
Design & Technology	p.8
Drama	p.9
English	p.1
Geography	p.11
History	p.13
Maths	p.14
MFL French	p.15
MFL German	p.16
Music	p.17
P.E.	p.18
Science	p.19

How to Use Your Knowledge Organiser

Self –Quizzing

Your Knowledge Organiser contains all of the key information you need to know for each subject area.

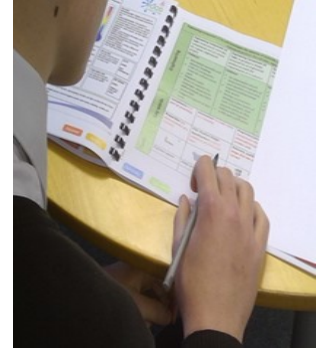
Your Knowledge Organiser will allow you to revise this key information and make sure it is stored in your long-term memory

The best way to use this resource is by self-quizzing.

“look, cover, write and check”

Look, Cover, Write, Check, Correct

First, look through and read the information on a section of your knowledge organiser



Then, cover the section so you can no longer see the information

Next, Try and **write out** the key definitions or facts that you need to know



Now, uncover the section of your Knowledge Organiser and check how correct you were

Finally, correct anything that you wrote down that was incorrect in **purple**

Portraits

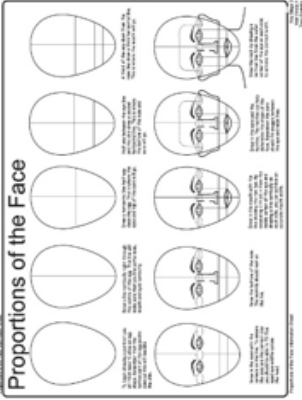
Portraits	Portraits are artistic representations of people. They can be created in any media, from traditional oil paintings, to photographs, sculpture and even mixed media
Proportion	Proportion refers to the relationship in size and placement between one object and another. When creating realistic portraits, it is important to get the facial proportions correct
Highlight	The highlights are the areas on an object where light is hitting the object.
Realistic	Representing things in a way that is accurate and true to life
Abstract	Abstract art is art that does not attempt to represent an accurate depiction of a visual reality but instead use shapes, colours, forms and gestural marks to achieve its effect
Asymmetrical	Having two sides or halves that are not the same
Form	The shape and structure of something

Artists

Pablo Picasso	Pablo Picasso was a Spanish painter, sculptor, printmaker, ceramicist and theatre designer who spent most of his adult life in France. His most famous portraits are abstract images in the Cubist style
Julian Opie	Julian Opie, a British artist, is a sculptor and digital artist associated with the New British Sculpture movement, and best known for portraits that reduce subjects to essential lines and colour planes.

Techniques

Pencil Grades	Pencil grades tell you how light/hard and dark/soft a graphite pencil is
Skin tone paint	Start with a little red, yellow, blue, and white on your paint palette. You can mix equal amounts of each of your primary colours (yellow, red, and blue) to create a dark brown tone. This brown can be the basis of any skin colour you desire
Grid	The grid method of drawing allows you to produce an accurate line drawing by reducing your subject to a series of small squares
Tone - Smudge	Smudged tone created by pressing down on graphite pencil tone and smudging it with your finger



Computing

Python -> English	
<code>print('hello!')</code>	Prints a value on screen (in this case, hello!)
<code>input('')</code>	Inputs a value into the computer.
<code>x=input('')</code>	Inputs a value and stores it into the variable x.
<code>x=int(input(''))</code>	Inputs a value into x, whilst also making it into an integer.
<code>print(str(x))</code>	Prints the variable x, but converts it into a string first.
<code>if name == "Fred":</code>	Decides whether the variable 'name' has a value which is equal to 'Fred'.
<code>else:</code>	The other option if the conditions for an if statement are not met (eg. name = 'Bob' when it should be Fred)
<code>elif name == "Tim"</code>	elif (short for else if) is for when the first if condition is not met, but you want to specify another option.
<code>#</code>	# is used to make comments in code – any line which starts with a # will be ignored when the program runs.

Comparative Operators	
<code>==</code>	Equal to
<code>!=</code>	Not equal to
<code>></code>	Greater than
<code><</code>	Less than
<code>>=</code>	Greater than or equal to
<code><=</code>	Less than or equal to

Key vocabulary	
Python	A high level programming language.
Programming	The process of writing computer programs.
Code	The instructions that a program uses.
Sequence	Parts of the code that run in order and the pathway of the program reads and runs very line in order.
Selection	Selects a pathway through the code based on whether a condition is true
Iteration	Code is repeated (looped), either <i>while</i> something is true or <i>for</i> a number of times
Algorithm	A set of rules/instructions to be followed by a computer system
Variable	A value that will change whilst the program is executed. (eg. temperature, speed)
Comparative Operator	When comparing data, an operator is used to solve the equality such as <>, != or ==
Syntax	The punctuation/way that code has to be written so that the computer can understand it. Each programming language has its own syntax.
Data Type	This indicates how the data will be stored. The most common data types are integer, string, and float/real.
String	A collection of letters, numbers or characters. (eg, Hello, WR10 1XA)
Integer	A whole number. (eg. 1, 189)
Float/Real	A decimal number, not a whole number. (eg. 3.14, -26.9)
Boolean	1 of 2 values. (eg. True, False, Yes, No)

DT - Food & Nutrition

<p>Raising agents are added to most baked products during the making process using gas, steam or air which, when heated, expands causing the food to swell and rise up.</p>	<p>These can be:</p> <ul style="list-style-type: none"> • mechanical, e.g. beating, creaming, rolling and folding, sieving, whisking; • chemical, e.g. baking powder, baking powder, self-raising flour; • biological, e.g. yeast. <p>Different foods may use one or more of these to achieve a desirable end result.</p>
<p>Functional characteristics of ingredients</p> <p>Ingredients provide a variety of functions in recipes, such as:</p> <p>dextrinisation</p> <p>aeration</p> <p>coagulation</p> <p>gelatinisation</p>	<ul style="list-style-type: none"> • browning, e.g. flour in a bread roll • raising, e.g. yeast in bread • setting, e.g. scrambled eggs • thickening, e.g. flour in a roux sauce

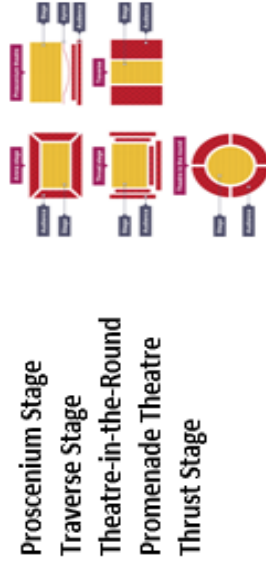
Design & Technology

Keyword	Definition
Continuous improvement	The identification of improvements and subsequent evolution of products.
Functionality	How well a product carries out its purpose.
Iterative design	Design methodology based on a cyclical process of analysing, prototyping and testing to refine a product. Each iteration and result starts the process again.
Physical properties	Properties that refer to the actual matter that forms the material (e.g. insulation, conductivity, fusibility).
Prototype	An early model or sample of a product used to test a concept.
User centered design	Design development with the user at the centre of the focus. The designer tries to envisage how the product will actually be used, as opposed to focusing on other areas such as cost.
Biological raising agent	Using yeast to produce CO ₂ gas.
Chemical raising agent	Uses baking powder or bicarbonate of soda to produce CO ₂ gas.
Mechanical raising agent	Whisking, beating, sieving, creaming, rubbing in or folding to trap air into the mixture.

Drama

Drama Strategies:	
Voice-Over:	Narration heard over what is seen on stage.
Tableaux:	Participants make still images with their bodies to represent a scene. A tableau can be used to quickly establish a scene that involves many characters. At this point, thought tracking can be used to find out more about each of the characters.
Soundscape:	Using voices or body percussion to create (like a landscape, only in sound) a particular theme or mood. e.g., the city at night
Soliloquy:	Act of speaking one's thoughts aloud when by oneself or regardless of any hearers.
Flashback/Flash Forwards:	Improvised scenes which take place seconds, minutes, days, or years before or after.
Choral Speech:	Speaking or chanting at the same time
Thought-Tracking:	Speaking aloud the thoughts or feelings of a character in a freeze-frame.
Still Image/freeze frame:	It is like pressing the pause button on a remote control, taking a photo, or making a statue.
Conscience Alley:	One person walks down an alleyway made by the group and listens to thoughts or advice
Cross-Cutting:	Two or more scenes are performed on stage at the same time. This makes it possible to juxtapose scenes or snippets of scenes that happen at different times or in different places, using separate areas of the performance space. The technique is used to highlight or contrast a particular theme or aspect of the story. Using different groupings, both scenes could happen at the same time, or one could be frozen while the other comes alive. This can have a similar effect to spotlighting areas of the stage.
Narration and Narrating:	A technique whereby one or more performers speak directly to the audience to tell a story, give information.
Multiple Roles:	Having more than one character in an improvised drama
Marking the Moment:	A technique used to highlight a key moment in a scene or improvisation. This can be done in several different ways: for example, through slow-motion, a freeze-frame, narration, thought tracking or music. It has a similar effect to using a spotlight to focus attention on one area of the stage at a particular moment during a performance.
Forum Theatre:	Audience stopping the performance and improving the action through feedback or by taking on the role of one character

Key Words and Phrases	
Style and Form:	The methods used to tell a story i.e. mime or physical theatre.
Non-Naturalistic:	Where no-one is pretending that what is happening on stage is realistic. Non- naturalistic techniques include slow motion & Soundscape.
Physical Theatre:	Theatre which emphasizes the use of physical movement, as in dance and mime, for expression.
Symbolism:	Symbolism in terms of theatre can be done with colour, movement, characters, props, and costumes. (The symbol can bring about greater meaning than any literal suggestion and can usually be used to represent something different than what you will see at face value.)
Naturalism:	Theatre that attempts to create an illusion of reality through a range of dramatic and theatrical strategies
Protagonist:	Main character in a play.
Antagonist:	Opponent or foil of the main character.
Choreography:	The art or practice of designing choreographic/movement sequences.
Fourth wall:	A performance convention in which an invisible, imagined wall separates actors from the audience.
Proximity:	How close or far you are from your co-performers can be a source of very powerful impact. For example, the threatening gangster who speaks to his victim from perhaps a couple of inches.



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'Oliver Twist' Knowledge Organiser

Key Vocabulary and Definitions

Etymology (OE- Old English, F-French, L- Latin, G- Germanic, AG – Ancient Greek, N - Norse)

Anti-Semitic (adjective)	hostile to or prejudiced against Jewish people	(G) antisemitisch
Champion (noun and verb)	(noun) winner (verb) vigorously support or defend the cause of.	(L) campionen: gladiator, fighter
Conclude (verb)	Come to an end Arrive at an opinion by reasoning	(L) concludere: to shut up, enclose
Discordant (adjective)	Disagreeing (of sounds) harsh and jarring because of a lack of harmony	(L) discordare: to differ, quarrel
Emerge (verb)	move out of or away from something and become visible	(L) emergere: bring forth, bring to light
Fervent (adjective)	having or displaying a passionate intensity	(L) ferventum: boiling hot, glowing
Hierarchy (verb)	a system in which members of a society are ranked according to relative status or authority.	(G) hierarkhia: rule of a high priest
Honourable (adjective)	principled, moral, just, fair, honest, virtuous, trustworthy	(L) honorabilis: of high rank
Loathsome (adjective)	causing hatred or disgust; repulsive	(OE) loath: disgust
Obscure (verb and adjective)	(verb) keep from being seen; conceal. (adjective) not discovered or known about; uncertain.	(L) obscurus: dark
Obtain (verb)	get, acquire, or secure (something)	(L) obtinere: gain
Resolve (verb)	Find a solution Decide firmly on a course of action	(L) resolvere: loosen, dissolve
Stealthily (adverb)	In a cautious and surreptitious manner, so as not to be seen or heard	(OE) stelan: steal
Tumult (noun)	a loud, confused noise, especially one caused by a large mass of people	(F) tumulte: uproar
Vulnerable (adjective)	exposed to the possibility of being attacked or harmed, either physically or emotionally.	(L) vulnus: wound

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English

Geography

Key Terms	
Disposable income	the amount of money left to spend on what you want, once bills have been paid
Colonies	areas controlled by another country
Subsistence farmers	farmers who grow only enough food to feed themselves and their families, leaving little to sell
Informal work	jobs that pay cash-in-hand. Workers don't pay tax but also don't receive benefits such as sick pay
Sparsely populated	few people live there
Terrain	the physical characteristics of land, such as rocky or mountainous
Traditional societies	groups of people who have lived in a place for a very long time, passing down knowledge and customs through many generations
Nomads	people who move from place to place, travelling with their animals to find grazing
Semi-nomadic	nomadic people who move from place to place, but may also stay in one area for a while to grow crops
Desertification	where the land is being turned into desert, often through overuse
Over-grazing	when animals eat too many plants so the vegetation cannot recover properly
Hydro-electric power	electricity made by water flowing through turbines in a dam
Corrupt	not honest

Year 8 Topic 2 Focus on Africa	
✓	Africa is a continent, with 54 countries; these are very diverse, with many geographical, social and cultural contrasts.
✓	Africa has many different types of landscapes, from deserts to rainforests and mountains.
✓	Africa has many natural resources, such as oil, diamonds, gold
✓	Africa has been the home to many different groups and civilisations throughout history.
✓	More and more people in Africa are moving to towns and cities. In rural areas most people are subsistence farmers, and in cities many people do informal work.
✓	Africa has more young people than anywhere else in the world – this brings benefits and challenges for the future.
✓	Few people live in the Sahara because it is very dry and very hot. It is difficult to find water, and there is little vegetation.
✓	Desertification is caused by drought, lower rainfall due to climate change, population growth, and human activity such as overgrazing.
✓	The Great Green Wall is a scheme to create a wide boundary of trees and vegetation along the southern edge of the Sahara, to help reduce desertification.
✓	Nigeria has a variety of different landscapes, and has four different biomes: desert, rainforest, tropical savannah and semi-arid savannah.
✓	Nigeria has the largest population of any African country and a high proportion of young people especially in Lagos. Around half the population live in towns and cities.
✓	Nigeria has experienced rapid economic development in recent decades. New industries have developed, bringing jobs and increased wealth.
	Nigeria's growth has improved the quality of life for many people, with better health, education and job opportunities but also brought economic, social and environmental challenges for many people.

How did Europeans impact America?

Key Figures

Harriet Tubman – An ex-slave who became a leading figure in the Underground Railroad, helped hundreds of slaves escape.

Nat Turner – A slave who led a violent rebellion against their owners. The rebellion resulted in many deaths.

Pocahontas – A Native American girl who married an English soldier and visited Queen Elizabeth
George Washington – The First President of the USA, he was a leader in making the USA an independent country.

Thomas Jefferson – A 'founding father' of the USA, he was the leading author of the Declaration of Independence

Abraham Lincoln – President of the USA, led the North during the Civil War and ended slavery

Key Points

Declaration of Independence – A document signed by the 'founding fathers' that said the USA was no longer controlled by Britain

The Underground Railroad – A secret organisation that helped slaves escape and move north
Manifest Destiny – A belief that it was Americans' right to move west and take land in the name of Christianity

Emancipation Proclamation – A law passed by Lincoln that made Slavery illegal in the United States

The US Civil War – A war between the Northern states and the Southern States, the North was against slavery, the South supported slavery

Battle of Little Bighorn – The most famous battle with Native Americans, it was a total failure for the US army

Key Words

Democracy – A way of running a country. People vote for who they want to be in charge.

Pilgrim – People who move to a different country for religious reasons.

Indigenous people – people who are originally from an area (e.g. Native Americans)

Independence – Not being controlled by another country

Resistance – Refusing to accept something and showing it, it can be violent or non-violent

Colony – A country that is controlled by another country. e.g. America was a colony of Britain

Migration – people moving from one part of a country to another part

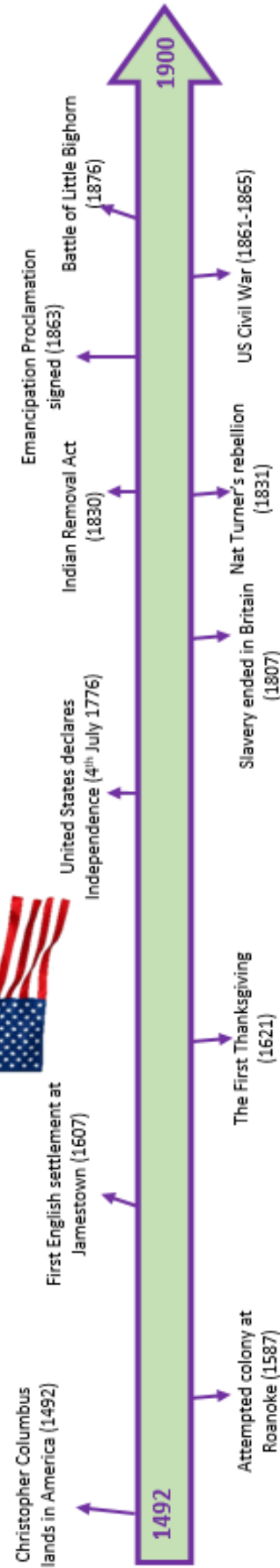
Civil War – A war between two groups from the same country

Key Questions

Why did Slavery end? There were many reasons – Slaves had long resisted and rebelled against their masters, finally, Abraham Lincoln ended Slavery during the Civil War with the Emancipation Proclamation

What is a State in the USA? A state is a division of the USA, states can control some laws by themselves. Originally there were 13 states, now there are 50.

Did Christopher Columbus really discover America? No, people had been living in America for thousands of years, Europeans found out about it with Christopher Columbus.



Maths

Mathematics - Year 8



In Maths you will receive a separate knowledge organiser.

Your knowledge organiser will help you to:

Know which **MET*** skills you should be learning

Track when you have learnt, revisited and revised a skill

Identify any gaps where you have missed lessons

Guide your revision when it comes to assessments

*The **MET (Mathematics Expertise Tower)** shows you all the skills you will master during your lessons and how each skill builds upon the last.

It is arranged into **4 topic areas**:

Number & Ratio	Algebra & Graphs	Geometry & Measure	Probability & Statistics
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You can see the full **MET** in the Maths Corridor!

Maths Equipment you must have every lesson:

Pen, pencil, rubber, ruler, protractor, compasses, scientific calculator

USEFUL WEBSITES:



My Login:

Password:



My Login:

Password:



My Login:

Password:

www.bbc.co.uk/bitesize

www.khanacademy.org

<https://corbettmaths.com>

Year 8				Programme of study and assessment calendar			
Term 1	Term 2	Term 3	Term 4	Term 5	Term 6		
September	November	January	March	May	June	July	
Expressions, Equations and Pythagoras	Indices and Transformations	Ratio and Graphs	Unit 8 Test	Unit 9 Test	Statistics and Probability	Unit 10 Test	
Unit 6 Test	Unit 7 Test		Fractions	Accurate Drawing	End of Year Test (2 Papers)		

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MFL - French

Clothes

Qu'est-ce que tu portes?	What do you wear?
je porte	<i>I wear</i>
j'aime porter	<i>I like to wear</i>
des baskets	<i>trainers</i>
un blouson	<i>bomber jacket</i>
un bonnet	<i>woolly hat</i>
des bottes	<i>boots</i>
une casquette	<i>cap</i>
des chaussures	<i>shoes</i>
une chemise	<i>shirt</i>
en cuir	<i>(made of) leather</i>
une écharpe	<i>scarf</i>
des gants	<i>gloves</i>
un imper(méable)	<i>raincoat</i>
un jean	<i>pair of jeans</i>
une jupe	<i>skirt</i>
des lunettes (de soleil)	<i>(sun) glasses</i>
un maillot de bain	<i>bathing costume</i>
un pantalon	<i>pair of trousers</i>
un parapluie	<i>umbrella</i>
une robe	<i>dress</i>
un short	<i>pair of shorts</i>
un sweat	<i>sweatshirt</i>
un survêtement	<i>tracksuit</i>
un T-shirt	<i>T-shirt</i>
à talons	<i>high-heel</i>
une veste	<i>jacket</i>
des vêtements de marque	<i>designer clothes</i>

Opinions about clothes

à la mode	<i>fashionable</i>
classe	<i>classy</i>
incroyable	<i>unbelievable</i>
indispensable	<i>essential</i>
pratique	<i>practical</i>
top	<i>brilliant</i>

Weather

Quel temps fait-il?	What is the weather like?
il fait chaud	<i>it is hot</i>
il fait froid	<i>it is cold</i>
il fait du vent	<i>it is windy</i>
il gèle	<i>it is freezing</i>
il neige	<i>it is snowing</i>
il pleut	<i>it is raining</i>
il y a de l'orage	<i>there is a (thunder) storm</i>
il y a du soleil	<i>it is sunny</i>

Time expressions

Tu en fais souvent?	Do you do it often?
souvent	<i>often</i>
quelquefois	<i>sometimes</i>
une fois par jour	<i>once a day</i>
deux fois	<i>twice</i>
toujours	<i>always</i>
tous les jours	<i>every day</i>
tous les soirs	<i>every evening</i>
le week-end	<i>at the weekend</i>

le dimanche après-midi	<i>on Sunday afternoons</i>
le jeudi	<i>on Thursdays</i>
dimanche	<i>on Sunday</i>
pendant	<i>during/for</i>

Telling the time and weekend activities

Quelle heure est-il?	What time is it?
Il est ...	<i>It is ...</i>
quand	<i>when</i>
midi	<i>midday</i>
minuit	<i>midnight</i>
une heure	<i>one o'clock</i>
une heure dix	<i>ten past one</i>
une heure et quart	<i>a quarter past one</i>
une heure et demie	<i>half past one</i>
une heure moins le quart	<i>a quarter to one</i>
une heure moins dix	<i>ten to one</i>
J'écoute de la musique.	<i>I listen to music.</i>
Je joue sur ma console	<i>I play on my games de jeux vidéo.</i>
Je reste à la maison.	<i>I stay at home.</i>
Je surfe sur Internet.	<i>I surf the net.</i>
Je télécharge de la musique.	<i>I download music.</i>
Je vais en ville.	<i>I go to town.</i>
bloquer	<i>to blog</i>
envoyer	<i>to send</i>
partager	<i>to share</i>
passer	<i>to spend</i>
se coucher	<i>to go to bed</i>
s'entraîner	<i>to train, practise</i>
se lever	<i>to get up</i>
surfer	<i>to surf</i>
tchater	<i>to chat</i>

Die Jeans ist cool!

Die Jeans ist cool!	Jeans are cool!
die Ballerinas	pumps/ballerina shoes
die Bluse	blouse
das Hemd	shirt
die Hose	trousers
die Jeans	jeans
der Kapuzenpullover	hoodie
das Kleid	dress
die Lederjacke	leather jacket
der Mantel	coat
der Pullover	jumper
der Rock	skirt
die Shorts	shorts
die Sportschuhe	trainers
die Stiefel	boots
das T-Shirt	T-shirt
alt	old
altmodisch	old-fashioned
bequem	comfortable
billig	cheap
bunt	multicoloured
gestreift	striped
hässlich	ugly
kariert	checked
kurz	short
lässig	casual
modisch	fashionable
neu	new
schick	chic/smart
schön	beautiful
teuer	expensive
unbequem	uncomfortable
wichtig	important
sehr	very
total	totally

Cool e Outfits

Cool e Outfits	Cool outfits
Ich trage ...	I wear ...
Er/sie trägt ...	He/she wears ...
... einen gelben Rock	... a yellow skirt
... ein teures Kleid	... an expensive dress
... eine schwarze Jacke	... a black jacket
... lässige Shorts	... casual shorts
normalerweise	normally/usually
Ich möchte ... tragen.	I'd like to wear ...
Ich möchte ... kaufen.	I'd like to buy ...
Ich möchte einkaufen gehen.	I'd like to go shopping.
Ich möchte schick aussehen.	I'd like to look smart.

Die Hose ist zu klein!

Die Hose ist zu klein!	The trousers are too small!
Mein Outfit ist zu alt.	My outfit is too old.
Ich werde einkaufen gehen.	I'll go shopping.
Ich werde ... kaufen.	I'll buy ...
Ich werde (ihn) umtauschen.	I'll exchange it.
Ich werde ... tragen.	I'll wear ...
ein Größer kleiner	a size smaller
ein Größer größer	a size bigger
besser (als)	better (than)

Wir gehen einkaufen!



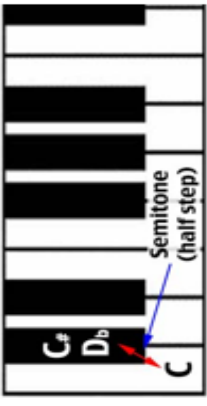
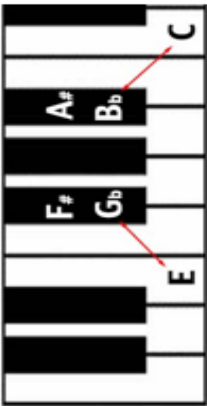
Wir gehen einkaufen!	We're going shopping!
Wie findest du ...?	What do you think of ...?
Ich finde ihn/sie/es ...	I find it ...
Ich finde sie (p) ...	I find them ...
zu groß/klein	too big/small
zu teuer	too expensive
Es steht dir gut.	It suits you.
Es steht dir nicht.	It doesn't suit you.
Wie kann ich dir helfen?	How can I help you?
Ich möchte (ihn) anprobieren.	I'd like to try it.
Ich möchte (sie) kaufen.	I'd like to buy it/them.
Ich möchte (es) nicht kaufen.	I wouldn't like to buy it.

Das trage ich!

Das trage ich!	That's what I wear!
Was trägst du gern?	What do you like wearing?
Ich trage (am liebsten) ...	My favourite clothes are ...
Wo kaufst du ein?	Where do you go shopping?
Ich kaufe meine Kleidung bei ...	I buy my clothes at ...
Was trägst du in der Schule?	What do you wear at school?
In der Schule trage ich ...	At school I wear ...
die Schuluniform	school uniform
die Designerkleidung	designer clothing
die Krawatte	tie
hellblau	light blue

MFL - German

Music

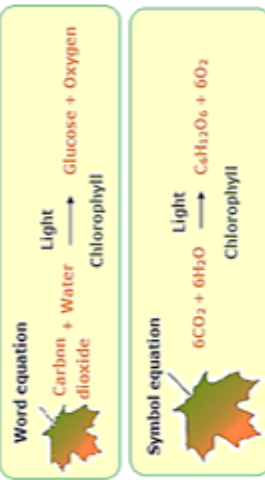
Keyword	Definition / Example
1. Treble clef	 <p>Generally, notes from 'middle C' and above.</p>
2. Bass clef	 <p>Generally, notes from 'middle C' and below.</p>
3. Semitone	 <p>The closest step between 2 notes</p>
4. Tone	 <p>Two semitones</p>

KS3 PHYSICAL EDUCATION – KNOWLEDGE ORGANISER AUTUMN TERM	
All students will participate in at least 4 of the following activities this term. They are Rugby, Hockey, Basketball, Netball and Trampolining	
INVASION GAMES: Rugby, Hockey, Netball and Basketball	GYMNASTICS: Trampolining
<u>Invasion games:</u> Team games in which the purpose is to 'invade' the opposition's territory to score points whilst trying to make sure the other team does not score.	<u>Spotters:</u> stand around the trampoline and ensure that the person on the trampoline is safe at all times. A spotter will prevent the trampolinist from falling off the trampoline if they get too close to the sides or the ends.
<u>Receiving the ball:</u> when you catch a ball or receive the ball with a stick	<u>Basic Jumps:</u> tuck, pike and straddle
<u>Passing the ball:</u> throwing a ball to your teammate or passing it with your stick to a teammate.	<u>Basic landing positions:</u> Seat landing, Front landing and Back landing
<u>Spatial awareness:</u> when you recognise your position in relation to your opponent and the ball/object you are playing with.	<u>Combinations:</u> Seat to front, front to seat, seat $\frac{1}{2}$ twist to feet, $\frac{1}{2}$ twist to seat, front $\frac{1}{2}$ twist to feet, $\frac{1}{2}$ twist to front
<u>Defending strategies:</u> defending a space or area to stop your opponents from scoring. Defending the goal or try line.	<u>Twists:</u> Swivel hips, Back $\frac{1}{2}$ twist to feet, $\frac{1}{2}$ twist into back
<u>Attacking strategies:</u> Creating space for yourself and your teammates. Moving into space to receive a pass.	<u>Advanced twists:</u> Roller, Cradle, Cat twist, Half turntable, Full turntable
<u>Tackling:</u> forcing your opponent to lose possession of the ball in order for you or your teammates to gain possession.	<u>Basic Somersaults:</u> Hands and knees turnover to feet, back pullover to feet, Back pullover to front, Back to front landing, $\frac{3}{4}$ front to back landing, Front somersault, Back somersault

Plants & Photosynthesis

Plants and algae are called producers. Plants use glucose as an energy source and to build new tissue. Some glucose is stored to use later.

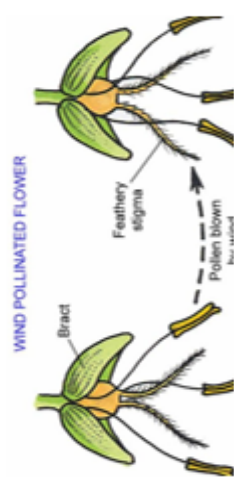
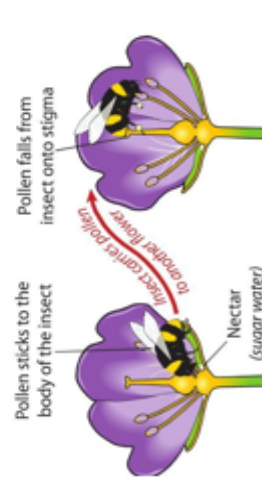
PHOTOSYNTHESIS: A chemical reaction in which plants take in carbon dioxide (from the air) and water (from the soil) and change them into glucose (food) and oxygen (waste product).



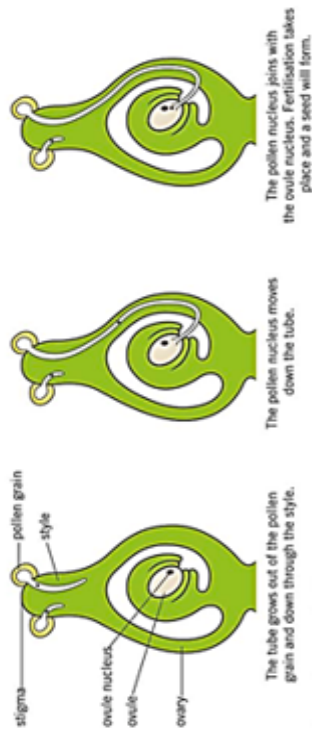
POLLINATION

- Can occur between two different plants (cross-pollination) or between male and female parts of the same plant (self-pollination).
- Pollen can be transferred by wind, insects, or other animals.

Insect pollination



How are new plants made? Plants reproduce sexually to produce seeds. These seeds form after pollen grains and ovules join. After fertilisation, the fruit and seed are formed.



SEEDS have three important structures:

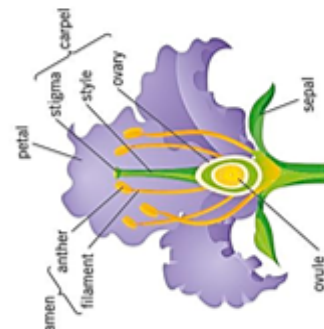
- Seed coat → tough outer layer
- Embryo → young root and shoot
- Food store → store of food (starch) the young plant uses until it can photosynthesise.

To germinate a seed needs:

- Water → seed swells and embryo can grow.
- Oxygen → respiration (energy)
- Warmth → speeds up reactions

KEYWORD

KEYWORD	DEFINITION
Algae	Green uni-cellular or multi-cellular organisms that perform photosynthesis and live underwater. They do not have leaves, stems or roots.
Chlorophyll	Green pigment in plants and algae which absorbs light energy.
Deficiency	A lack of minerals that causes poor growth.
Fertilisers	Chemicals containing minerals that plants need to build new tissue.
Iodine	Indicator used to test for the presence of starch. It will turn blue/black.
Magnesium	Mineral needed by plants for making chlorophyll.
Nitrates	Mineral containing nitrogen (N) for healthy growth.
Phosphates	Mineral containing phosphorus (P) for healthy roots.
Photosynthesis	Process plants use to make their own food.
Potassium	Mineral needed by plants for healthy leaves and flowers.
Producer	Organism that makes its own food using photosynthesis.
Stomata	Pores at the bottom of a leaf which open and close to let gases in and out.

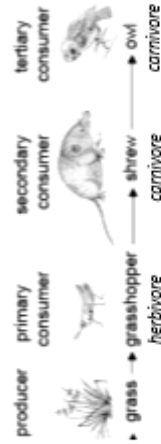


KEYWORD	DEFINITION
Anther	The male part of the flower that produces pollen.
Carpel	The female part of the flower, made up of the stigma where the pollen lands, style and ovary.
Fertilisation	Joining of a nucleus from a male and female sex cell.
Filament	The part of a flower that holds up the anther.
Fruit	Structure that the ovary becomes after fertilisation, which contains seeds.
Germination	The period of time when a seed starts to grow.
Ovary	The part of a flower that contains ovules.
Ovules	Female sex cells in plants found in the ovary.
Petals	A brightly coloured part of a flower that attracts insects.
Pollen	Contains the plant male sex cells found on the stamens.
Pollination	Transfer of pollen from the male part of the flower to the female part of the flower on the same or another plant.
Seed	Structure that contains the embryo of a new plant.
Seed dispersal	The movement of seeds away from the parent plant.
Sepal	The special leaves found under the flower, which protect unopened buds.
Stamen	The male reproductive parts of the flower.
Stigma	The female part of a flower that is sticky to catch grains of pollen.
Style	The female part of a flower that holds up the stigma.

Ecosystems

FOOD CHAINS

- The arrows show the transfer of energy (stored in food) from one organism to the next.
- Some energy is transferred to the surroundings by heating and as waste; this means that at each level less energy is being transferred to the next organism.
- The top predator is always the last link in the food chain.



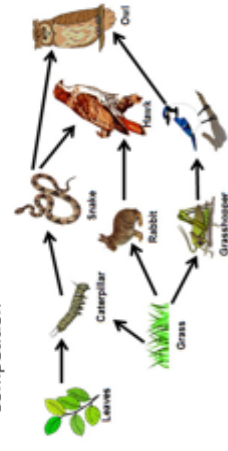
FOOD WEBS AND INTERDEPENDENCE

A food web is a set of linked food chains. Organisms in a food chain depend on each other for survival (interdependent).

Populations of organisms are constantly changing.

The size of a population is affected by:

- Number of predators and prey
- Disease
- Pollution
- Competition



Some organisms, like the rabbit, have just one predator (hawk). If the number of rabbits decrease, due to a disease, the number of hawks would also decrease as they would have less to eat.

Decomposers (bacteria and fungi) are also found in food webs.

BIOACCUMULATION

Chemicals (e.g. insecticides) can also be passed along a food chain!

- As these chemicals are washed into rivers and end up in the sea, they are absorbed by fish in small amounts.
- Seals eat the fish and the chemicals pass into their body.
- The levels of the chemical build-up (accumulate) in seals as they eat lots of fish.
- Polar bears eat seals, as one polar bear eats lots of seals, the chemical accumulates to a dangerous level. This makes the polar bear ill and can cause death.

MARINE ECOSYSTEM

Habitat → ocean
Community → water plants, micro-organisms, insects, fish, fish-eating birds, sea mammals, crustaceans.

The plants and animals co-exist. They live in the same place at the same time.

PREDATOR-PREY RELATIONSHIPS

Changes in population of one animal can directly affect the population of another.

- When the prey population increases, the predators have more to eat. The number of predators increases, as they survive longer and reproduce more.
- The growing predator population eats more prey. Their number of prey fall.
- There is not enough food for all the predators so their numbers decrease.
- As there are fewer predators feeding on prey, the prey population will increase.
- The cycle starts again.

COMPETITION

Animals compete for:

- Food
- Water
- Space (hunt/shelter)
- Mates (to reproduce)

The best competitors will be fast, strong and quick to spot their prey.

Plants compete for:

- Light
- Water
- Space
- Minerals

Dolphins and crabs live in the ocean but do not compete for food. They have **similar** but **slightly different niches**.

KEYWORD	DEFINITION
Bioaccumulation	The build-up of toxic chemicals inside organisms in a food chain.
Carnivore	A consumer (animal) that eats other animals.
Community	The collection of the different types of organisms present in an ecosystem.
Competition	Competing with other organisms for resources.
Consumer	Animal that eats other animals or plants.
Decomposer	Organism that breaks down dead plants and animal material so nutrients can be recycled back to the soil or water.
Ecosystem	The living things (plants and animals) in a given area and their non-living environment.
Environment	The surrounding air, water and soil where an organism lives.
Food chain	Part of a food web, starting with producer and ending with top predator. This diagram shows the transfer of energy between organisms.
Food web	A diagram that shows how food chains in an ecosystem are linked.
Habitat	The area in which an organism lives.
Herbivore	A consumer (animal) that eats plants.
Interdependence	The way in which living organisms depend on each other to survive, grow and reproduce.
Niche	A particular place or role that an organism has in an ecosystem.
Omnivore	A consumer (animal) that eats plants and animals.
Population	Group of the same species living in an area.
Predator	An animal that eats other animals.
Prey	An animal that is eaten by another animal.
Producer	Green plant or algae that makes its own food using sunlight by the process of photosynthesis.