



Tytherington
SCHOOL

YEAR 8
KNOWLEDGE
ORGANISERS

Spring Term 2025-2026



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Helping you to Master the Minimum!

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What are Knowledge Organisers?

A Knowledge Organiser specifies the essential knowledge that you need to memorise and retain for a unit of work. It is contained on a single A4 page and organised in a way to aid learning. The knowledge they contain are the building blocks of effective learning; it does not include everything you could and should know about a unit of work but the essential knowledge that you need to memorise.

This booklet contains all of the Knowledge Organisers for the units you will study in your subjects between Christmas and Easter.

Why are Knowledge Organisers important?

At secondary school you will study complex ideas and be asked to think in an analytical way; this is what makes learning an enjoyable process. To be able to think about difficult problems and question new ideas, you need know core factual detail to help you think critically. For example, if you have memorised your times tables your brain can focus on a complex Mathematics problem rather than working out 9×4 . Being confident in your knowledge of the basics frees up your brain to focus on the complex.

Once you have a secure knowledge of a unit of work, future learning is easier. Cognitive Scientists, who study how memory works, have shown us that we learn new information by linking it to knowledge we already have. The more knowledge we have, the easier it is to learn.

Knowledge Organisers are also useful as a reference point if you are struggling to remember information in a lesson or if you have been absent in a lesson. They will help you to be more effective learners.

How to use Knowledge Organisers effectively

Just having a Knowledge Organiser stuck into your exercise book or having this booklet in your bag will not help your learning.

You need to spend time, both in lessons and at home, memorising the content within them. Your teachers will help you do this by using them in lessons and setting homework tasks based upon them. Learning information can be uncomfortable and difficult but that is okay. That is how we improve.

Making sure we remember knowledge in the long term requires some hard work. You are probably confident with your Times Tables because your primary school teachers tested you on them regularly and you played online games to test yourself. The reason this works, is because you have been doing something called **retrieval practice**. Through the act of remembering, our memory is strengthened and forgetting is less likely. Every time you have to remember information it changes the original memory to make it stronger.

Retrieval Practice techniques you can use at home:

Look, Cover, Say, Write, Check

- Exactly as it sounds. Look at a section of the Knowledge Organiser, cover the information you are trying to remember, say it aloud or write it down and then check you are correct. Keep doing this until you consistently get the answers correct. This works particularly well when learning new vocabulary.

Quizzing

- Write your own quiz questions based on the information on your Knowledge Organiser. You could work with your peers or those you live with to quiz you until you have memorised the information.

Flash Cards

- Create your own set of flash cards. Write a question on one side and the answer on the other. You could even create these online using quizlet.com

Mind Dump

- Write down all of the key information you can remember on a topic or unit of work. Compare this to your Knowledge Organiser to see if there is anything you have missed.

Make sure that you carry out these memorising strategies regularly. Can you remember what you did last week, last month, last term? The more often you recall information from your memory, the stronger that memory becomes.

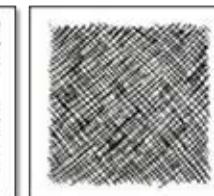
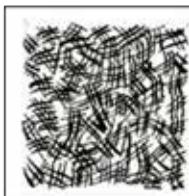
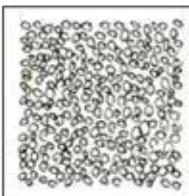
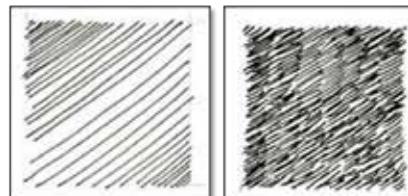
Physical Texture

Physical texture refers to an object's tactile surface. This is how an object feels if you touched it. For example, wood would look and feel rough and ridged.



Visual Texture

Visual texture refers to how an artist has used different techniques to create the illusion of texture on a flat surface. For example, using a range of mark making (see 5 examples below) with pen to create grain lines in a piece of wood.



Skills and Techniques

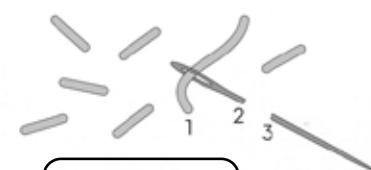
1. Drawing and Mark Making
2. Compositional skills
3. Surface manipulation techniques (printing, dyeing, collage)
4. Applique and layering
5. Hand embroidery techniques

Hand Embroidery

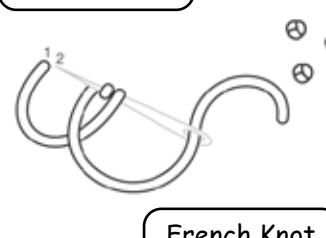
Back Stitch



Detached Chain



Seed Stitch



French Knot

The Rule of Thirds

A compositional technique that can be used in all aspects of design. Key elements of a design or image can be lined up with intersecting points of a grid.

The intersecting points are made by splitting the page in 3rds both horizontally and vertically.



Idea/Context

Jane Davies is a painter who creates abstract compositions that focus on shape, texture and quality of line.



Rachael Singleton is a mixed media artist who combines paper, fabric and fibre to create layered surfaces inspired by the natural world.



Key Words

1. Textiles
2. Texture
3. Tactile
4. Observation
5. Tone
6. Composition
7. Rule of Thirds
8. Layer
9. Abstract
10. Surface Manipulation
11. Experiment

Key Vocabulary



	STAGE 6		STAGE 7		STAGE 8		STAGE 9	
1	abest	is out	1	cenat	dines	1	agitat	chases, hunts
2	aberat	was out	2	conspicit	catches sight of	2	consumit	eats
3	cubiculum	bedroom	3	cum	with	3	ducit	leads
4	emit	buys	4	facit	makes/does	4	eum	him
5	ferociter	fiercely	5	heri	yesterday	5	facile	easily
6	festinat	hurries	6	ingens	huge	6	ferox	fierce
7	fortis	brave	7	intellegit	understands	7	gladius	sword
8	fur	thief	8	lacrimat	cries	8	hic	this
9	intente	carefully	9	mortuus	dead	9	ignavus	cowardly
10	libertus	freedman	10	narrat	tells, relates	10	nuntius	messenger
11	olim	once	11	necat	kills	11	pes	foot
12	parvus	small	12	nihil	nothing	12	porta	gate
13	per	through	13	omnis	all	13	postulat	demands
14	postquam	after	14	prope	near	14	puer	boy
15	pulsat	hits	15	rogat	asks	15	pugnat	fights
16	quod	because	16	tacite	quietly	16	saepe	often
17	res	thing	17	tamen	however	17	sanguis	blood
18	scribit	writes	18	terret	frightens	18	silva	wood
19	subito	suddenly	19	valde	very much	19	spectaculum	show
20	superat	overcomes				20	statim	at once
21	tum	then				21	totus	whole
22	tuus	your, yours				22	pulcher	beautiful
23	vendit	sells				21	revenit	returns, comes back
24	vituperat	curses				22	tradit	hands over

Nouns

		1	2	3
1	Nom Sing	-a	-us	-or/is/s/x/r
2	Acc Sing	-am	-um	-em
3	Dat Sing	-ae	-o	-i
4	Nom Plural	-ae	-i	-es
5	Acc Plural	-as	-os	-es
6	Dat Plural	-is	-is	-ibus
<ul style="list-style-type: none"> • Nominative = Subject • Accusative = Object • Dative = To or For 				

Verbs

		PRESENT	IMPERFECT	PERFECT
1	I	-o	-bam	-vi
2	You Sing	-s	-bas	-visti
3	He / She / It	-t	-bat	-vit
4	We	-mus	-bamus	-vimus
5	You Plural	-tis	-batis	-vistis
6	They	-nt	-bant	-verunt
was/were ...ing			ed
				5

Key Terms

1	Prompt	The text entered into an AI model.
2	AI	Artificial Intelligence - the ability of a computer to perform tasks commonly associated with humans.
3	Personal Data	Data that is identifiable to a person. E.g. name, email address etc. NEVER enter this into an AI model.
4	Label	The label is attached to images and videos in an AI database. It says what they are. E.g. a cat in a hat.
5	Pseudonym	A fake name. These can be used instead of personal details in AI.
6	LLM	Large Language Model. E.g. ChatGPT or BingChat.



Deep Fakes

1	A deep fake is when AI is used to make fake video /audio of a person.
2	 THIS IS NOT MORGAN FREEMAN.



Computer Science Python

Comparison Operators (If symbols)

1	==	Equal to
2	<	Smaller than
3	>	Bigger than
4	<=	Smaller than or equal to
5	>=	Bigger than or equal to
6	!=	Not equal to

Data Types

1	String	Text, a collection of characters. E.g. A username
2	Integer (Int)	Whole number, a number with no decimals. E.g. Number of students in a class.
3	Float	Decimal number, a number with decimals. E.g. An amount of money.
4	Char	Single character, a single character (anything on a keyboard). E.g. F
5	Boolean (Bool)	True or false, a true or false value, 1 or 0. E.g. Banned == True

Key Words

	Programming Key Words:		Example:
1	print	Displays something on the screen.	<code>print("Duck eggs")</code>
2	if	Used to choose between 2 options.	<code>if 1 < 5: print("1 is bigger than 5")</code>
3	while	Loops code while the condition is true	<code>while counter < 10: print("Hello")</code>
4	Variable	A container that stores information of a certain datatype.	<code>username = "MLGDavid"</code>

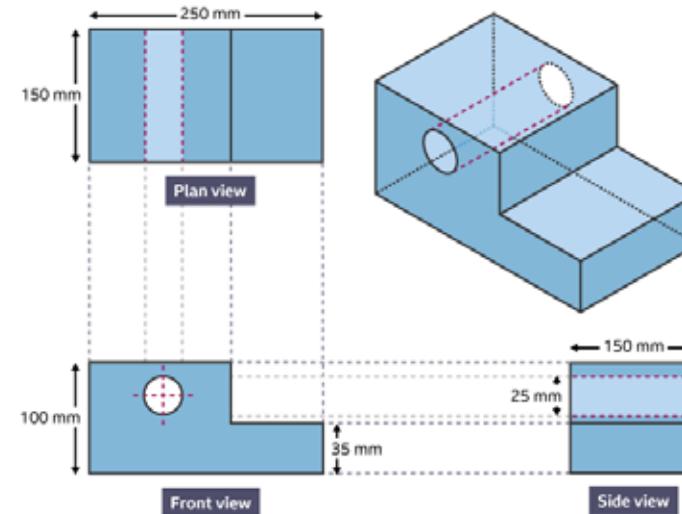


DT Project 2: Passive Speaker Term 2

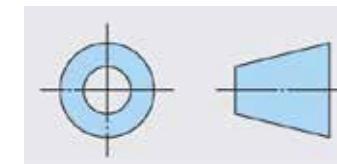


Key Vocabulary

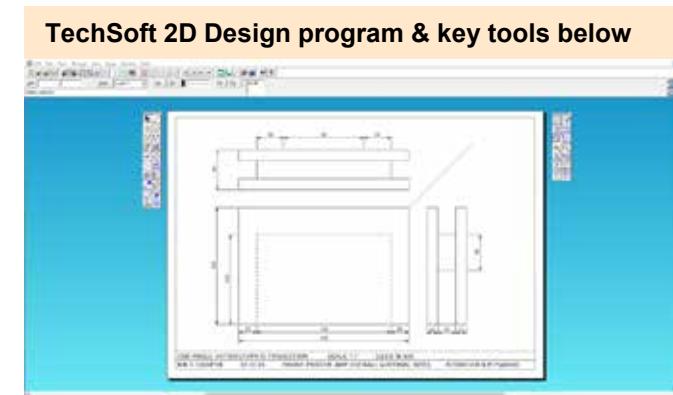
1	Aesthetics	How something appeals to the five senses (Look, sound, feel, smell, taste). Shape, colour and texture of a design.
2	3rd Angle orthographic projection	A way of showing a 3D object in 2D by drawing it from the front, plan (top) and side views as a minimum.
3	Computer-aided design (CAD)	Using computer software to draw, model and simulate the performance of products.
4	Constraint	Something that limits what can be done.
5	Design brief	A summary of the design opportunity. What you will design and make.
6	Evaluation	Reflecting on a design. Looking at what went well and identifying ways that a product could be improved.
7	Function	What a product does and how it works.
8	Passive speaker	Does not itself use any power but supports the working and output of increased sound.
9	Specification	List of all the design criteria that the finished product must meet.
10	TechSoft 2D Design	CAD software for 3 rd angle orthographic projection and isometric drawing.
11	Testing	This can be physical, visual and user testing to check a product will function as intended.



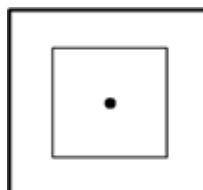
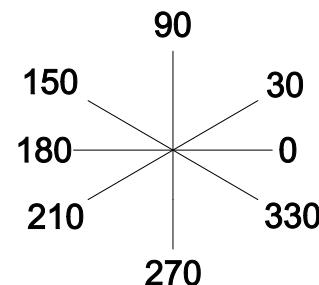
3rd Angle orthographic symbol



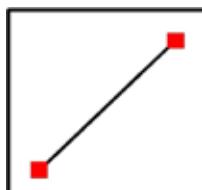
Left – Diagram shows a 3rd Angle Orthographic drawing of the 3D shape in the picture.



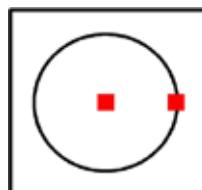
Angles for drawing in 2D Design. Input line length in MM's and then an angle for the direction you want the line to go.



Attach
(links to the end
of a line)



Line



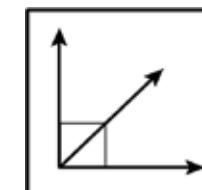
Circle



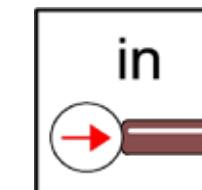
Delete any



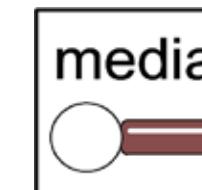
Delete part of a
line or object



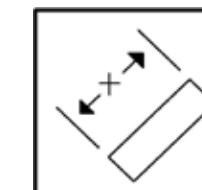
Radial lock



Zoom in



Zoom to media
(the whole page)



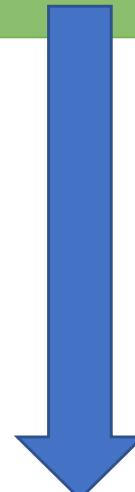
Dimension lines
(add sizes to
drawing)



Year 8 Drama : Melodrama



Melodrama : a sensational (amazing/shocking) dramatic piece with exaggerated characters and exciting events intended to appeal to the emotions.

Key Vocabulary			Design in Melodrama		
1	ASIDE	when the action freezes and a character speaks directly to the audience.	1	Costume	Costume design reinforces stereotypes. Colour might be used symbolically (red for danger, black for the villain, white for purity) and accessories might be added for dramatic effect e.g., a cloak to swish menacingly.
2	DRAMATIC IRONY	when the audience know something the other characters do not.	2	Set and Lighting	The set in a melodrama should create an atmosphere. There may be shadowy corners in which a villain could lurk. You may need several doorways for dramatic entrances and exits and thrilling chase sequences. Levels could also create shadowy corners or sudden flashes could add dramatic effect to surprise entrances. Colour again could be used symbolically.
3	CAPTIONS	short lines of dialogue visually presented for the audience to read.	3	Sound and Music	Sound effects can be used in melodrama to add atmosphere – a stormy night, driving rain, howling wind, an advancing steam train. Effects could be added to performer's voices, such as an echo for evil laughter. Fast music might increase the tension for a chase sequence; slow, creepy music might add tension to a dangerous situation.
4	LANGUAGE	the word choices made by the playwright/performer. Word choices can say a lot about a character, including social class, educational background, emotional state, relationships with others, nationality, and profession.	Narrative Structure		
5	EXPOSITIONAL	Statement that gives a lot of information or explanation.	Exposition Background Rising Action Climax Falling Action Resolution		
Stock Characters					
The Hero		The Villain's Assistant			
The Heroine		The Rogue			
The Villain		Aged Parents			



Year 8 Drama: Slapstick

Slapstick comedy refers to **physical theatre comedy** based on deliberately clumsy actions and humorously embarrassing events. This type of humour was popular in the early 1900's and is still popular today.

Characteristics of slapstick

- 1 **Improbable situations**
- 2 **Practical jokes**
- 3 **Chases**
- 4 **Unrealistic action**
- 5 **Extreme physicality**
- 6 **Comical trips or collisions**
- 7 **Pratfalls**
- 8 **Over exaggerated acting**
- 9 **You are reliant on your facial expressions and body language to communicate to the audience**



Famous slapstick performers

Charlie Chaplin



Buster Keaton



Tom and Jerry



The Three Stooges



Laurel and Hardy



Harold Lloyd



Modern slapstick performers

Lee Evans



The Chuckle Brothers



Mr Bean



Itchy and Scratchy



Key Vocabulary



1	Revolution (noun)	An overthrow of a system or government in favour of a new one.
2	Tyranny (noun)	Abuse of power, ruling by creating fear and using cruelty.
3	Rebellion (noun)	An act of armed resistance against a government or ruler.
4	Totalitarianism (noun)	A government, system or individual which restricts its people's rights and controls their lives in what is called a totalitarian state.
5	Oppression (noun)	Cruel or unjust (unfair) treatment.
6	Novella	A short novel.
7	Propaganda	Spreading ideas, information or rumours in order to influence people's opinions and manipulate their beliefs.
8	Cyclical structure	When a story ends in a similar or the same way as it began.
9	To exploit	To treat others unfairly and take advantage of them.
10	Rhetoric	The art of using language effectively to persuade or influence others.
11	Dictatorship	A ruler with total power, usually achieved through force.

Characters

Pigs:

1	Old Major	A prize-winning pig. He is the one who inspires all the animals to rebel against the humans. He is considered an allegory for (he represents) Karl Marx and also sometimes Vladimir Lenin.
2	Napoleon	A large boar (pig) who becomes the leader of Animal Farm. He is the main villain of the story. He secures his power through fear. He is an allegory for Joseph Stalin.
3	Snowball	He is the pig who challenges Napoleon for leadership. He is a good speaker and organiser. He easily wins the loyalty of most of the animals. He is an allegory for Leon Trotsky.
4	Squealer	He serves as Napoleon's public speaker. He twists and abuses language to excuse and justify Napoleon's actions. He is considered an allegory for propaganda.

Horses:

1	Boxer	A loyal and dedicated horse. He is an allegory for the working-class people of Russia.
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Key Information

1	Allegory	A story, picture or character that has a symbolic or hidden meaning. If something is an allegory it represents something else.
2	About the novella	Animal Farm was written in 1945 by George Orwell and is based on the cruel leaders of Europe.
3	What is Animal Farm an allegory for?	The events of the Russian Revolution.

Language methods often used to persuade and argue

1	A necdote	A short amusing or interesting story about a real incident or person.
2	F acts	Something that is true / can be proven.
3	O pinion	Something someone thinks.
4	R epetition	Words or phrases that are used more than once.
5	R hetorical Question	A question used to make a point and have an effect, no answer is expected.
6	E motive Language	Language used to create emotion in the audience e.g. 'he was depressed, bedraggled and lonely.'
7	S tatistics	Facts using numbers / percentages.
8	T riplet / List of Three	Three words or phrases used one after the other e.g. he was lonely, nervous and uncertain.
9	I nclusive pronoun	Pronouns used to create a sense of shared experience and link the writer to the audience e.g. "we" and "us".
10	H yperbole	Obvious exaggeration. e.g. 'I've been waiting forever'
11	D irect Address	Using someone's name or a pronoun such as 'you / your' to speak directly to a particular person or group. 'This is your responsibility'

French Super 7s

The little words you use a lot



THE SUPER 7

TIME PHRASES	Specify when something is happening - in the present, past or future or whether we would like something to happen in an ideal world (conditional).
VERBS	Describe an action, state or occurrence - i.e. a doing, being or happening word.

YEAR 8

1. Time Phrases	
1 normalement	normally
2 toujours	always
3 parfois	sometimes
4 souvent	often
5 tous les jours	every day
6 en général	in general
7 de temps en temps	from time to time
8 (ne VERB) jamais	never
9 la semaine dernière	last week
10 l'année dernière	last year
11 la semaine prochaine	next week
12 l'année prochaine	next year

2. Verbs	
1 avoir	to have
2 j' ai	I have
3 elle/ il a	s/he has
4 être	to be
5 je suis	I am
6 elle/il est	s/he is
7 c' est	it is
8 il y a	there is / are
9 j' étais	I was
10 elle/il était	s/he was
11 c' était	it was
12 il y avait	there was / were
13 je veux	I want to
14 je dois	I must
15 je peux	I can

4. Justifiers	
1 parce que (c'est)	because (it is)
2 car (ils/ elles sont)	because (they are)
3 parce que (c'était)	because (it was)
4 car (ce serait)	because (it would be)
5 comme	as

5. Qualifiers	
1 très	very
2 assez	fairly
3 beaucoup (de)	a lot of
4 un peu	a bit
5 trop	too (much/many)
6 plus...que	more... than
7 moins...que	less... than
8 aussi...que	as... as
9 vraiment	really
10 presque	nearly / almost
11 complètement	completely
12 généralement	generally

6. Adjectives	
1 intéressant	interesting
2 ennuyeux	boring
3 amusant	fun
4 bon / mauvais	good / bad
5 cool	cool
6 difficile	difficult
7 facile	easy
8 divertissant	entertaining
9 passionnant	exciting
10 relaxant	relaxing
11 spécial	special
12 incroyable	incredible

ADJECTIVES	CONNECTIVES
Words that describe nouns (people, places or things).	Words which join together two different, but related, parts of a sentence. They allow us to extend and develop our sentences.

Key Vocabulary



1	jouer au football/ basketball	to play football/ basketball
2	faire du vélo	to do cycling
3	faire de la natation	to do swimming
4	faire de l'équitation	to do horse-riding
5	faire mes devoirs	to do my homework
6	faire du shopping	to go shopping
7	écouter de la musique	to listen to music
8	regarder la télé	to watch TV
9	aller au cinéma	to go to the cinema
10	surfer sur Internet	to surf the internet
11	lire un livre/ roman	to read a book/ novel
12	tchatter sur mon portable	to chat on my phone
13	sortir avec mes amis	to go out with my friends

Core intent:

To be confident and competent in using a range of hobby verbs in the infinitive with opinions.

Common phrases

1	D' habitude j'aime jouer au foot	I usually like to play football.
2	J' aimerais faire du vélo car c'est vraiment délassant.	I would like to do / go cycling because it is really relaxing .
3	Demain je vais regarder la télé car à mon avis ça sera assez ludique .	Tomorrow I am going to watch TV because in my opinion it will be quite fun .

Present Tense

Subject	Present - aimer (to not like)		
Je (j') = I	n'	aime	pas
Tu = you	n'	aimes	pas
Il/elle/on = he/she/one	n'	aime	pas
Nous = we	n'	aimons	pas
Vous = you (all)	n'	aimez	pas
Ils/elles = they	n'	aiment	pas

Key Question

1	Qu'est-ce que tu aimes faire normalement pendant ton temps libre?	What do you normally like to do in your free time?
---	---	---

Adjectives

1	divertissant	entertaining
2	ludique	fun
3	exigent	demanding
4	gratuit	free
5	cher	expensive
6	facile/difficile	easy/difficult
7	délassant	relaxing

Opinions

1	J'adore	I love
2	Je déteste	I hate
3	Ça m'énerve	That annoys me
4	Ça m'ennuie	That bores me

Key Vocabulary



1	Je joue au foot/ basket	I play football/ basketball
2	Je joue du piano/ de la guitare	I play the piano / guitar
3	J'écoute de la musique	I listen to music
4	Je regarde la télé	I watch TV
5	Je surfe sur Internet	I surf the internet
6	Je tchatte sur mon portable	I chat on my mobile
7	Je lis un livre/ roman	I read a book/ novel
8	Je sors avec mes amis	I go out with my friends
9	Je vais au cinéma	I go to the cinema
10	Je fais du vélo	I do/go cycling
11	Je fais de la natation / de l'équitation	I do swimming/ horse-riding
12	Je fais mes devoirs	I do my homework
13	Je fais du shopping	I do/go shopping

Core intent:

To be confident and competent
in using a range of hobby verbs in
the present tense.

Key Question

1

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

What do you normally
do in your free time?

Common phrases

1	Je joue souvent au foot.	I often play football.
2	Je ne fais jamais du shopping car c'est très cher mais parfois je lis un livre.	I never do shopping because it's very expensive but sometimes I read a book.
3	Je sors toujours avec mes amis car à mon avis c'est vraiment divertissant.	I always go out with my friends because in my opinion it is really entertaining.

Present Tense

Subject	jouer (to play)	lire (to read)	sortir (to go out)	faire (to do)	aller (to go)
Je (j') = I	joue	lis	sors	fais	vais
Tu = you	joues	lis	sors	fais	vas
Il/elle/on = he/she/one	joue	lit	sort	fait	va
Nous = we	jouons	lisons	sortons	faisons	allons
Vous = you pl	jouez	lisez	sortez	faites	allez
Ils/elles = they	jouent	lisent	sortent	font	vont

Key Vocabulary



1	J'ai joué au foot/basket	I (have) played football/basketball
2	J'ai joué du piano/ de la guitare	I (have) played the piano/guitar
3	J'ai écouté de la musique	I (have) listened to music
4	J'ai regardé la télé	I (have) watched TV
5	J'ai surfé sur Internet	I (have) surfed the
6	J'ai tchatté sur mon portable	I (have) chatted on my phone
7	J'ai lu un livre/roman	I (have) read a book/novel
8	J'ai fait du vélo	I did (have done) cycling
9	J'ai fait de la natation/ de l'équitation	I did (have done) swimming/horse-riding
10	J'ai fait mes devoirs	I did (have done) my homework
11	J'ai fait du shopping	I did (have done)/went shopping
12	Je suis sorti(e) avec mes amis	I went out with my friends
13	Je suis allé(e) au cinéma	I went to the cinema

Core intent:

To be confident and competent in using a range of hobby verbs in the past tense.

Key Question

1

Qu'est-ce que tu as fait récemment pendant ton temps libre?

What have you done recently in your free time?

Common phrases

1

Récemment j'ai joué au foot.

Recently I played football.

2

Hier j'ai fait du vélo car c'est très ludique.

Yesterday I did biking because it is very fun.

3

Le weekend dernier je suis sorti(e) avec mes amis et à mon avis c'était vraiment divertissant.

Last weekend I went out with my friends and in my opinion it was really entertaining.

Past Tense

Subject	avoir	être	Past participle
Je (j') = I	ai	suis	Regular endings er = joué re = lu ir = sorti
Tu = you	as	es	
Il/elle/on = he/she/one	a	est	
Nous = we	avons	sommes	Verbs of movement take être + agree Je suis allé(e) Je suis sorti(e)
Vous = you (all)	avez	êtes	
Ils/elles = they	ont	sont	

GEOGRAPHY TOPIC 2: Coasts and Oceans

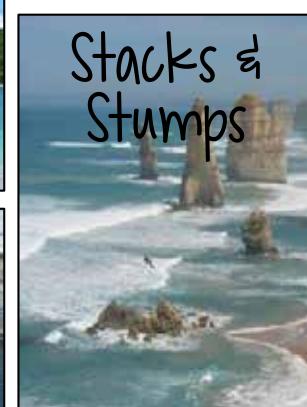
KEY VOCABULARY

1	Swash	The forward movement of water onto the beach.
2	Backwash	The backwards movement of water onto the beach.
3	Erosion	The wearing away of rock, stone or soil by wave action. This continuous action shapes the coastline.
4	Transportation	The movement of material from one place to another.
5	Deposition	The dropping of material onto the coast.
6	Ecosystem	Community of living organisms and their connections with the climate and the soil
7	Coral Reef	Underwater ecosystem made up of a ridge or mound of coral
8	Marine Pollution	The contamination of the sea by substances that are harmful to living organisms as a result of human activity.
9	Biodegrade	A process that enables a substance to break down into natural materials in the environment without causing harm.
10	Gyres	A circular pattern of ocean currents

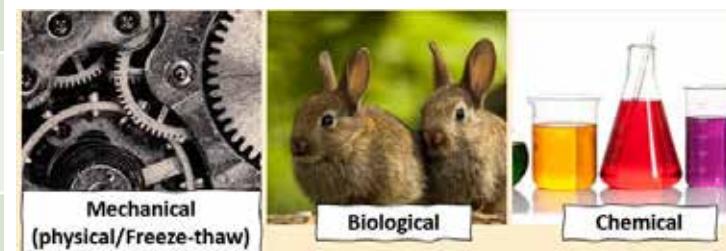
TYPES OF EROSION

Hydraulic Action	Abrasion	Attrition	Solution
Sea water forced into cracks causes the explosion of trapped air which breaks off pieces of rock	Small material carried in the sea rubs and scrapes against the coastline wearing it away	Large material carried in the sea collides and breaks up	Rocks such as limestone are dissolved by the salts and acid in the sea

COASTAL LANDFORMS



TYPES OF WEATHERING

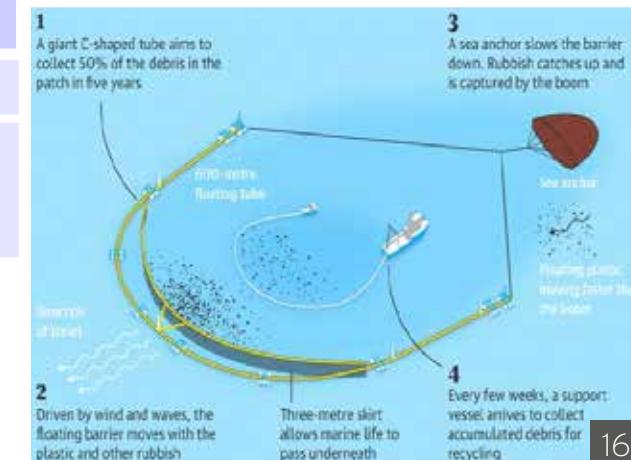


BEACHES

PEBBLE	SANDY
Cliffs are being eroded Destructive waves Concordant coastlines	Bays – water is shallow Constructive waves Discordant coastlines

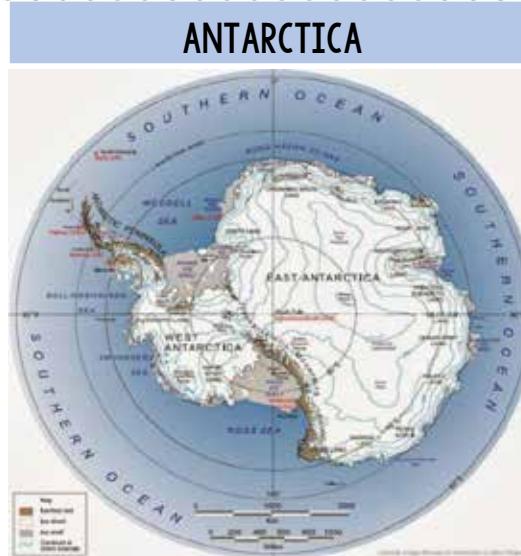


OCEAN BOOM



GEOGRAPHY TOPIC 3: FANTASTIC PLACES

KEY VOCABULARY		THE MIDDLE EAST	FACTORS THAT INFLUENCE DEVELOPMENT	
1	Opportunities	A time or set of circumstances that makes it possible to do something.		
2	Climate Change	The long term, global shift in the world's average weather patterns.		
3	Climate	The average weather conditions in a place, usually over 30 years. Only temperature and precipitation are measured).		
4	Human development Index	A composite measurement of human development based on three indicators (years in education, GNI/capita and life expectancy).	HUMAN	PHYSICAL
5	Conflict	A serious disagreement or argument, typically a protracted one- which can result in war.	<ul style="list-style-type: none"> • Rapid population growth • Conflict • Corruption 	<ul style="list-style-type: none"> • Weather and climate • Geographical location • Terrain eg mountainous
6	Global Common	An area that is accessible to all countries but owned by none. EG Antarctica	IMPACTS OF CONFLICT	
7	Development	Development refers to the standard of living and how the quality of life varies from place to place.	<ul style="list-style-type: none"> • FEMALE EDUCATION – In Afghanistan girls were banned from school under Taliban regime. • DEATH – many people are killed or injured during conflicts. • CIVILIAN DISPLACEMENT – Often people are forced to or want to move other areas. • HUNGER – Many people can not afford high food prices during a conflict. 	
8	Population density	The number of people living in an area. Usually measured in km ² .	HUMAN RIGHTS ISSUES IN QATAR	
9	Population distribution	How people are spread over an area. Eg evenly or unevenly.	<ul style="list-style-type: none"> • LAWS ON HOMOSEXUALITY – Lesbian, gay, bisexual and transgender people in Qatar can face serious legal challenges • WOMEN'S RIGHTS - Women in Qatar must gain permission from male guardians to engage in daily activities and can be prevented from leaving the house without a male. • FREEDOM OF EXPRESSION - Under Qatari law, any opinion which may appear 'biased' or different to the opinion of the law can be punishable by prison or fines. 	



German Super 7s

The little words you use a lot



THE SUPER 7

TIME PHRASES Specify when something is happening - in the present, past or future or whether we would like something to happen in an ideal world (conditional).

VERBS Describe an action, state or occurrence - i.e. a doing, being or happening word.

OPINIONS Explain what we think about the action or state of being - positive or negative.

JUSTIFIERS Allow us to answer the question 'why?' to give a reason for our opinions... usually using 'because'.

QUALIFIERS Words that make our describing words even more interesting.

ADJECTIVES Words that describe nouns (people, places or things).

CONNECTIVES Words which join together two parts of a sentence. They allow us to extend and develop our sentences.

YEAR 8

1. Time Phrases

1	normalerweise	normally	
2	immer	always	
3	manchmal	sometimes	
4	oft	often	
5	jeden Tag	every day	
6	ab und zu	from time to time	
7	nie	never	
8	letzte Woche	last week	
9	letztes Jahr	last year	
10	nächste Woche	next week	
11	nächstes Jahr	next year	

4. Justifiers

1	well / da	because (verb to end)	
2	denn	because	
3	weil / da es.... war	because (it was)	
5	wie	as	

7. Connectives

1	und	and	
2	aber	but	
3	auch	also	
4	mit	with	
5	jedoch	however	
6	oder	or	
7	allerdings	however	
8	ohne	without	
9	trotzdem	nevertheless	
10	einseiters	on the one hand	
11	andererseits	on the other	
12	obwohl	although	
13	sowohl... als auch	both... as well as...	

2. Verbs

1		haben	to have
2	ich	habe	I have
3	sie/er	hat	s/he has
4		sein	to be
5	ich	bin	I am
6	sie/er	ist	s/he is
7	es	ist	it is
8	es	gibt	there is / are
9	ich	war	I was
10	sie/er	war	s/he was
11	es	war	it was
12	es	gab	there was / were
13	ich	will	I want to
14	ich	muss	I must
15	ich	kann	I can

5. Qualifiers

1	(nicht) sehr	(not) very	
2	ziemlich/ganz	quite	
3	etwas	a bit	
4	zu	too (much/many)	
5	mehr... als	more... than	
6	weniger... als	less... than	
7	wirklich/echt	really	
8	fast	nearly / almost	
9	total	completely	
10	meistens	mostly	

6. Adjectives

1	interessant	interesting	
2	langweilig	boring	
3	lustig	fun	
4	gut / schlecht	good / bad	
5	toll	great	
6	leicht	easy	
7	schwierig	difficult	
8	unterhaltsam	entertaining	
9	spannend	exciting	
10	entspannend	relaxing	
11	ungläublich	incredible	
12	fantastisch	fantastic	

Key Vocabulary



1	Hobbies	hobbies
2	Fußball/Gitarre spielen	to play football/guitar
3	Musik hören	to listen to music
4	fernsehen	to watch TV
5	schwimmen/ einkaufen gehen	to go swimming / shopping
6	Gitarre/Klavier spielen	to play the guitar/piano
7	Skifahren	to go skiing
8	im Internet surfen	to surf the internet
9	in einem Chor singen	to sing in a choir
10	ein Buch lesen	to read a book
11	mir mit meinen Freunden treffen	to go out with my friends
12	ins Kino gehen	to go to the cinema
13	meine Hausaufgaben machen	to do my homework

Core intent:

To be confident and competent in using infinitive verbs to say what you like to do.

Common phrases

1	Ich mag (gern) Musik hören, denn es ist oft sehr unterhaltsam.	I like to listen to music because it is often very entertaining.
2	Ich hasse meine Hausaufgaben machen, weil es immer wirklich schwierig ist.	I hate to do my homework, because it is always really difficult.
3	Ich mag am liebsten ins Kino gehen, obwohl es meistens ziemlich teuer ist.	Most of all I like going to the cinema although most of the time it is quite expensive.

Present Tense

Subject	Present – mögen (to play)
Ich = I	mag
Du = you	magst
Er/sie/es/man = he/she/it	mag
Wir = we	mögen
Sie = you (pl)	mögen
Sie = they	mögen

Key Questions

1	Was machst du gern in deiner Freizeit?	What do you like doing in your free time?
---	---	---

Adjectives

1	unterhaltsam	entertaining
2	spannend	exciting
3	entspannend	relaxing
4	einfach	simple
5	schwierig	difficult
6	anstrengend	tiring
7	teuer	expensive
8	schrecklich	terrible

Opinions

1	Ich mag	I like
2	Ich mag nicht	I don't like
3	Ich hasse	I hate
4	Ich liebe	I love
5	Ich (mag) gern	I like
6	Ich (mag) lieber	I prefer
7	Ich (mag) am liebsten	I like the most

Key Vocabulary



Ich spiele... = I play...

1	Golf	golf
2	Tennis	tennis
3	Rugby	rugby
4	Basketball	basketball
5	Federball	badminton
6	Fußball	football
7	Klarinette	clarinet
8	Klavier	piano
9	Schlagzeug	drums
10	Gitarre	guitar

Ich mache...

1	Leichtathletik	athletics
2	Turnen	gymnastics
3	Karate	Karate

Ich gehe...

1	schwimmen	swimming
2	reiten	horseriding
3	segeln	sailing
4	windsurfen	windsurfing
5	wandern	hiking

Core intent:

To be confident and competent in using the verb to play and a number of other verbs in the present tense.

Common phrases

1	Normalerweise spiele ich jeden Sonntag Tennis, denn es ist immer wirklich entspannend.	I normally play tennis every Sunday because it is always really relaxing.
2	Meine Schwester fährt nie Ski, weil es sehr anstrengend ist.	My sister never goes skiing because it is very tiring.
3	Mein Bruder und ich machen seit drei Jahren Karate, weil es Spaß macht.	My brother and I do Karate for three years because it is fun.

Present Tense

Subject	Spielen (to play)	machen (to do)	Gehen (to go)	Fahren (to drive/travel)
Ich = I	spiele	mache	gehe	fahre
Du = you	spielst	machst	gehst	fährst
Er/sie/es/man = he/she/it	spielt	macht	geht	fährt
Wir = we	spielen	machen	gehen	fahren
Sie = you (pl)	spielt	macht	geht	fahrt
Sie = they	spielen	machen	gehen	fahren

Key Vocabulary



Ich fahre

1	Ski	skiing
2	rad	cycling
3	Skateboard	skateboarding
4	Kanu	canoeing

Key Questions

1	Machst du Sport?	Do you do sport?
2	Spielst du ein Instrument?	Do you play an instrument?

Time Phrases

Present tense time phrases

1	Normalerweise	Normally
2	Heute	today
3	Jetzt	now
4	Jeden Tag	every day
5	montags	Mondays
6	Seit zwei Wochen/Monaten/Jahren	for 2 weeks/months/years/

Key Vocabulary



1	Ich habe Musik gehört	I listened to music
2	Ich habe ferngesehen	I watched TV
3	Ich habe Fußball gespielt	I played football
4	Ich habe meine Hausaufgaben gemacht	I did my homework
5	Ich habe getanzt	I danced
6	Ich habe ein Buch gelesen	I read a book
7	Ich habe mich mit meinen Freunden getroffen	I met my friends
8	Ich bin ins Kino gegangen	I went to the cinema
9	Ich bin einkaufen gegangen	I went shopping
10	Ich bin reiten gegangen	I rode a horse
11	Ich bin radgefahren	I rode a bike

Core intent:

To be confident and competent in using a range of hobby verbs in the perfect tense.

Present Tense

Subject	haben	sein	Past Participle to the end
Ich = I	habe	bin	regular verbs: ge + stem + t (gespielt)
Du = you	hast	bist	
Er/sie/es/man = he/she/it/one	hat	ist	
Wir = we	haben	sind	
Ihr = you (pl)	habt	seid	Irregular verbs e.g. gehen = gegangen
sie/Sie = they/ you (formal)	haben	sind	

Key Questions

1	Was hast du letztes Wochenende gemacht?	What did you do last weekend?
---	--	-------------------------------

Time Phrases

Past tense time phrases		
1	Neulich	recently
2	Letztes Jahr/ Wochenende	Last year/ weekend
3	gestern	yesterday
4	Vor zwei Jahren	two years ago

Common phrases

1	Neulich habe ich Fußball gespielt	Recently I played football.
2	Gestern bin ich radgefahren denn es hat Spaß gemacht.	Yesterday I did biking because it was fun.
3	Letztes Wochenende habe ich mich mit meinen Freunden getroffen und meiner Meinung nach war es wirklich unterhaltsam.	Last weekend I met with my friends and in my opinion it was really entertaining.

Key Vocabulary



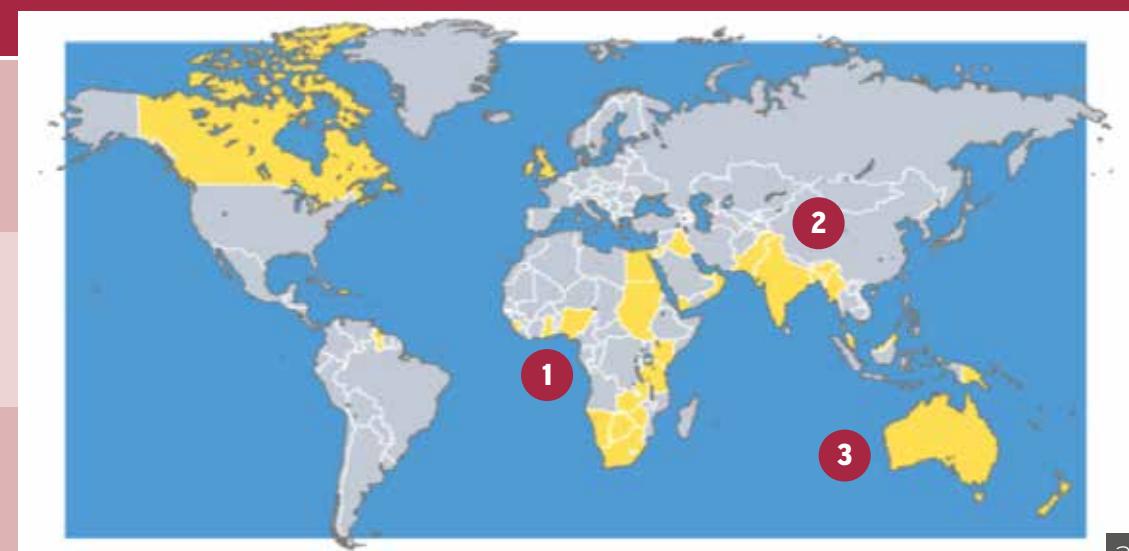
1	Empire	A group of countries ruled by a single person, government, or country.
2	Colonies	A country run by and under the control of another country (e.g., India became a colony of the British Empire).
3	Settlement	The process of moving to an area and establishing a permanent new community and society there.
4	Exploitation	The act of treating someone or somewhere unfairly, or to make use of their resources, in order to benefit from them.
5	The British Raj	The direct rule of India by the British government after 1858.
6	Indigenous peoples / First Nations peoples	The First Nations of people who lived in any region or country, and not the later invaders, settlers or immigrants; many continue to live in that region or country.

Why did countries want an Empire?

1	Economic	<ul style="list-style-type: none"> Access to resources . Guaranteed markets for trade. Workers. Income from tax.
2	Military	<ul style="list-style-type: none"> Strategic position in the world (e.g., for military bases). Increased size of an army.
3	Prestige	<ul style="list-style-type: none"> Power and status. Rivalry with other nations.
4	Ideology	<ul style="list-style-type: none"> Nationalism. Religion (e.g., spreading Christianity). Racism (e.g., 'civilising' and white supremacy).

The British Empire

1	South Africa	<ul style="list-style-type: none"> Exploitation – the importance of gold and diamond mining. The Natives Land Act 1913.
2	India	<ul style="list-style-type: none"> The 'Jewel in the Crown'. Exploitation through the railways and textile industries.
3	Australia	<ul style="list-style-type: none"> Settlement and dispossession of First Nations peoples. Frontier Wars, Free Settlers and Gold Rushes.



Key Vocabulary



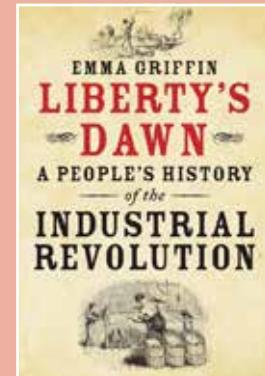
1	Revolution	A dramatic and wide-reaching change.
2	Domestic system	A system where workers make goods in their own homes; also known as a 'cottage industry'.
3	Factory	Where goods are manufactured in large numbers (often mass produced), generally using machinery.
4	Workhouse	A place where the poor received food and shelter in return for hard work; conditions were incredibly harsh.
5	Cholera	An infectious and often fatal disease, commonly spread through contaminated water.
6	Liberty	The state of being free; the power to act as you please.
7	Trade Union	An organisation for workers, formed to protect and further their rights and interests'
8	Economy	To do with jobs, trade, business and the generation of wealth.

Was it a 'liberty's dawn' for all?

1	Women		<ul style="list-style-type: none"> Unmarried, single women found work in factories and mills. Lower wages than men. Women remain tied to the home.
2	Children		<ul style="list-style-type: none"> Most children worked - most had a job by age 10. Long hours, low pay and dangerous jobs in mills, factories and mines.
3	Working-class men		<ul style="list-style-type: none"> New job opportunities for men. Better wages than before and full-time employment. Lack of workers' rights.
4	Factory		<ul style="list-style-type: none"> New factories emerged and new industries. Individuals became rich and had an increased say/power.

Liberty's Dawn

In **Liberty's Dawn** Emma Griffin argues that the Industrial Revolution was '*the advent not of a yet 'darker period', but of the dawn of liberty.*'



Timeline

1769 James Watt patents the steam engine	1819 The Peterloo Massacre	1833 First Factory Act passed to improve conditions	1834 The Tolpuddle Martyrs are sentenced to transportation	1884 The Third Reform Act; two thirds of men could now vote
1775 Arkwright patents the Water Frame and uses in his mill	1832 Great Reform Act; limited extension of the vote	1834 The Poor Law Amendment Act; workhouses established	1848 Major cholera epidemic	1888 The Match Girls' Strike

Mathematics “Talk like a Mathematician”

Topic 5 – Percentages			Topic 6 – Functions & Graphs			Topic 8 – Handling Data		
1	Percentage	Amount in each hundred.	1	Parallel	Lines which lie in the same direction and are always the same distance apart, therefore never touching.	1	Pictogram	A chart which uses pictures to represent data.
2	Equivalent	Equal in value.	2	Gradient	The steepness of a line.	2	Bar chart	A chart using rectangular bars to show how large each value is.
3	Increase	A rise in the size.	3	Linear sequence	A pattern of numbers that increase or decrease by the same amount each time.	3	Vertical Line Chart	A chart using vertical lines to show how large each value is.
4	Decrease	Becoming smaller.	4	Linear graph	A collection of co-ordinates which form a straight line.	4	Pie chart	A circular chart in which each sector shows the relative size of each value.
5	Original value	The first value.	5	Linear segment	The part of a line connecting two points.	5	Quantitative Data	Data that can be counted or measured.
Topic 7 – Angles								
1	Acute angle	An angle less than 90 degrees.	6	Qualitative Data	Information that describes something.	6	Qualitative Data	An average in which all values are added together and divided by how many values there are.
2	Obtuse angle	An angle greater than 90 degrees but less than 180 degrees.	7	Mean	An average in which all values are placed in ascending order and the middle value is chosen.	7	Mean	An average in which all values are placed in ascending order and the middle value is chosen.
3	Reflex angle	An angle greater than 180 degrees but less than 360 degrees.	8	Median	An average in which all values are placed in ascending order and the middle value is chosen.	8	Median	An average in which all values are placed in ascending order and the middle value is chosen.
4	Right angle	A 90-degree angle.	9	Mode	An average in which the value that appears most often is chosen.	9	Mode	An average in which the value that appears most often is chosen.
5	Quadrilateral	A 2D shape with four straight sides.	10	Range	The difference between the highest and lowest values.	10	Range	The difference between the highest and lowest values.
6	Polygon	A 2D shape made up of only straight sides.						
7	Regular polygon	A polygon in which all angles are equal, and all sides are equal.						
8	Perpendicular	Lines which lie at right angles to one another.						

Music Cajon

What is a Cajon?

- 1 A Cajon is a box shaped percussion instrument from Peru.
- 2 You play the instrument with your hands.
- 3 Traditionally, it is used for playing Afro-Peruvian and Latin music.
- 4 In more recent years, the instrument has been used to replace a drum kit, especially due to its small size in comparison.

Warm Ups – Rudiments

1	Single Strokes	R L R L R L R L
2	Double Strokes	R R L L R R L L
3	Paradiddle	R L R R L R L L
4	Reverse Paradiddle	R R L R L L L R L
5	Inward Paradiddle	R L L R L R R L
6	ParadiddleDiddle	R L R R L L
7	Single Stroke Four	R L R L

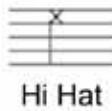


One Kiss – Calvin Harris

LL L L L L L L

R R R R

The 3 Main Notes on a Cajon



Crazy – Gnarls Barkley

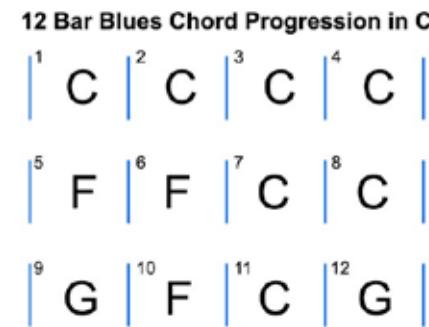
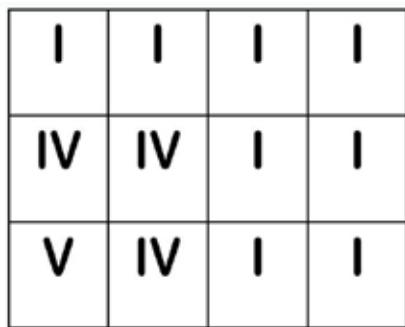
Bass sound Snare sound Hi Hat sound

Valerie – Amy Winehouse

Key Vocabulary



1	Call and Response	Leader makes a musical call and the group answers or copies.
2	Improvisation	Making up music as you go.
3	Field Holler	A song sung by slaves.
4	Walking Bassline	Bassline that moves up and down in pitch in a walking style.
5	Stop Chorus	Stabbed chords at the start of each bar.
6	Scat Singing	A type of vocal improvisation using short nonsense words.
7	Pentatonic Scale	A 5 note scale.
8	Fills	Short drum solos at the end of bars to fill in a gap.
9	12 Bar chord progression	Structure of blues song that has 12 bars with a common chord progression.



G major pentatonic scale



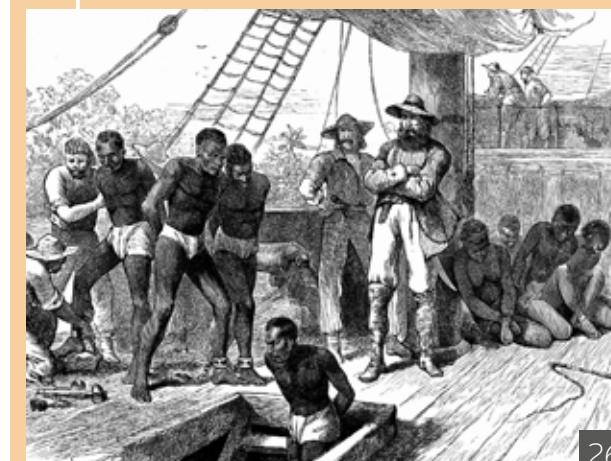
G A B D E

Instrumentation

1	Vocals
2	Acoustic Guitar
3	Electric Guitar
4	Bass
5	Piano
6	Trumpet
7	Saxophone
8	Harmonica

Slavery

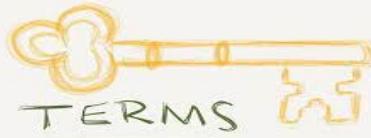
- 1 During the 18th and 19th centuries, thousands of people were taken as slaves from Africa to America.
- 2 For these Africans life became a nightmare. Many died on their long journey by sailing ship.
- 3 Those that survived were sold in auctions and put to work on farms in the Southern states of America.
- 4 The life of slavery was cruel and horrible.
- 5 To help share their troubles and problems, the slaves would sing songs using call and response. The songs became known as The Blues.





Personal Development- Year 8

Spring Term 2026 – Drugs, Alcohol and Smoking



<u>Key Term</u>	<u>Definition</u>
Nicotine	A highly addictive substance that is found in cigarettes and other tobacco products .
Alcohol	A psychoactive drug that is the active ingredient in drinks such as beer, wine and spirits .
Legal drug	Drugs that can be bought over the counter (e.g., paracetamol) or are prescribed by a health professional (e.g., antibiotics). Must be used for the purpose that they were prescribed/sold.
Illegal drug	Highly addictive substances that are <u>against the law</u> to make, sell, share, possess and use. For example, heroin, ecstasy, cocaine.
Dependency	When a person feels that they ' need ' to continue to do/take something in order to function normally.
County Lines	Where illegal drugs are transported from one area to another: usually by young people/vulnerable adults . The ' county line ' is the dedicated mobile phone line that is used to take to order of drugs. It is a form of criminal exploitation and is against the law .

The Law



Smoking	<ul style="list-style-type: none"> You cannot legally buy cigarettes if you are under 18 It is illegal for an adult to buy you cigarettes, e-cigarettes or e-liquids, or for a retailer to sell you them if you are under 18 Smoking is banned in public vehicles that carry someone under 18. Smoking is banned in enclosed public spaces and places of work.
Vaping	<p>It is against the law the purchase vaping products under the age of 18. Vaping is banned on all public transport (e.g., buses, trains, planes etc) and not permitted in most indoor public places like pubs, restaurants and workplaces.</p>
Alcohol	<p>If you are under 18 it is against the law:</p> <ul style="list-style-type: none"> To buy/try to buy alcohol For someone to sell you alcohol For an adult to buy alcohol for you To drink alcohol in a licensed premises (pubs/restaurants). <p>It is against the law to drive if you are over the legal alcohol limit.</p>
Illegal drugs	<p>You could receive an unlimited fine and/or a prison sentence for making, taking, possessing or supplying (or intending to supply) illegal drugs. Some examples of the legal penalties are show below.</p>

Possession or intent to supply any of the substances below can result in an unlimited fine and/or a prison sentence. Maximum sentences are listed below.

	Possession	Intent to supply/Supply
Class A	Seven years	Life sentence
Class B	Five years	Life sentence
Class C	Two years (not including anabolic steroids)	Fourteen years
Psychoactive substance		Seven years

The Impact = smoking, excessive drinking and drug use can have far reaching consequences. All can impact on **physical health, mental health, relationships, school/work, and finances**. As well as the **legal consequences**.

Physical Education Invasion Games

Key Vocabulary



1	Weight of pass	Considering the amount of force required to make the pass perfectly playable for your team mate.
2	Opposition	(Opposition) The team you are playing against.
3	Decision making	Deciding which skill to use in a given situation.
4	Formations	This allows a team to set up in a planned way with clear positions and roles within the team. This allows the team to function as a cohesive unit.
5	Player to player marking	A style of defence used to ensure every opposing player is being marked.
6	Zonal defence	A style of defence which protects a particular area on the pitch court e.g. box in football, semi circle in netball, hockey, handball.
7	Using width	Playing the ball/frisbee down the channels either side of the pitch/court allows a quicker attack due to there being more space available.
8	Shooting	(not rugby or ultimate frisbee) Using techniques which will increase the likelihood of the ball going in the goal/net and scoring.
9	Change of pace	Increasing the speed of movement when in space in order to stay ahead of defenders when attacking.
10	Passing to control	Playing the ball/frisbee to a team mate in a more favourable position e.g. playing the ball ahead for your team mate to run on to.

(Hockey, Football, Rugby, Basketball, Handball, Netball, Lacrosse, Ultimate Frisbee).
An invasion game is where the objective is to attack the opposition's territory and score a goal or points. Fundamental skills and tactics across invasion games are often the same.



Cross Curricular Vocabulary

These are words which you are/will become familiar with when studying different sports:

1	Resilience	The ability to recover quickly from difficulties.
2	Feedback	Information received to help you improve in future.
3	Diligence	Careful and persistent work.
4	Communication	Sharing information with others
5	Teamwork	Working cooperatively with others.
6	Tactics	A plan to gain advantage or success.
7	Cardiovascular fitness	The ability to exercise without tiring too quickly.

Key Knowledge

1

Key information for success

- Invasion games are played on a pitch or court and teams need to establish attacking and defending positions in order to ensure they effectively cover the space. Different attacking and defending formations can be used according to the strengths of your opponents. When passing the ball/frisbee it is beneficial to play it 'ahead' of the moving player called passing to control and to consider controlling the weight of the pass to ensure its accuracy and to enable your team mate to control it easily.

- When you are in possession of the ball frisbee it is important that you make good decisions and select the skill appropriate to the situation. In order to remain ahead of the opposition and maintain attacking advantage, use a change of pace to move the ball in to space or to enable you to receive the ball/frisbee in a space. Using the width of the pitch/court enables you to find space which makes it easier to keep possession and to attack.

- Invasion games all require you to mark players and this can be done using player-to-player marking or using a system of zonal defence which involves players defending a danger area. Selecting the style of defensive play can depend on your opposition.



Key Vocabulary



1	Khanda		The symbol of the Sikh faith.
2	Guru Granth Sahib		The holy scripture for Sikhs and is regarded as the living Guru.
3	Gurdwara		The Sikh place of worship.
4	Khalsa		A Community of initiated Sikhs who commit to be pure, clear and free from sin. It formulates an initiation ceremony and rules of conduct for Khalsa warriors. Upon initiation, male Khalsa Sikhs are given the title Singh and females Kaur.

Sikhi

1	Sikhi is a monotheistic religion (belief in one god) that originated in India.
2	Fifth largest religion in the world; over 600 years old.

Guru

1	The term Guru comes from the Sanskrit guru, meaning teaching, guide or mentor.
2	The traditions and philosophy of Sikhi were established by ten Gurus from 1469 to 1708.
3	Each Guru added to and reinforced the message taught by the previous, resulting in the creation of the Sikh religion.
4	Guru Nanak was the first Guru and appointed a disciple as a successor.
5	Guru Gobind Singh was the final Guru in human form. Before his death, he decreed that the Guru Granth Sahib would be the final and perpetual Guru of the Sikhs.

The Five Ks

The Five Ks are five items that Guru Gobind Singh commanded Khalsa Sikhs to wear at all times. These aren't just symbols but are articles of faith.

1	Kesh		• Uncut hair and beard. • Sign of respect to God's creation.
2	Kangha		• Wooden comb to comb the hair.
3	Kara		• Iron bracelet, shows oneness of God.
4	Kachera		• Undergarment worn originally as part of a military uniform.
5	Kirpan		• Dagger or sword only symbolic. • Used to protect those in danger.

Science Electromagnets 1: Current, Voltage & Resistance

Key Vocabulary



1	Ammeter	Used to measure the current in a circuit.
2	Amperes (Amps)	The units for current.
3	Conductor	A material that allows charge (current) to flow through it easily.
4	Current	The rate of flow of charge around a circuit.
5	Electrons	Subatomic particles with a negative charge.
6	Fuse	A thin piece of wire that breaks if the current is too high in a circuit.
7	Insulator	A material that does not allow charge (current) to flow through it easily.
8	Neutron	Subatomic particles with no charge.
9	Ohms	The units for resistance.
10	Parallel	A circuit that contains two or more loops or branches.
11	Proton	Subatomic particles with a positive charge.
12	Resistance	A measure of how hard it is for electricity to pass through a component.
13	Static electricity	The build up of electrical charge on an object.
14	Series	A circuit with all components connected in one loop.
15	Sub-atomic particles	Particles that make up an atom (protons, neutrons and electrons).
16	Volts (V)	The units for voltage.
17	Voltage (Potential difference)	A measure of the difference in energy between two parts of a circuit.
18	Voltmeter	Used to measure the voltage (potential difference) in a circuit.

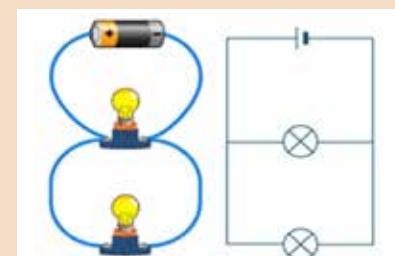
Series & parallel circuits

Series circuit:



- A circuit with all components connected in one loop.
- The current is the same at every point in a series circuit.
- The voltage is shared between components in a series circuit.

Parallel circuit:

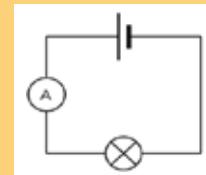


- A circuit that contains two or more loops or branches.
- The current is split between the branches in a parallel circuit.
- The voltage across each branch of the circuit is the same as the voltage produced by the cell / battery.

Key Idea

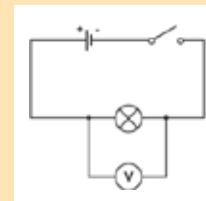
1 Current

- Measured in Amps (A).
- Measured using an ammeter.
- An ammeter is connected in series.



2 Voltage (Potential difference)

- Measured in Volts (V).
- Measured using a voltmeter.
- A voltmeter is connected in parallel.

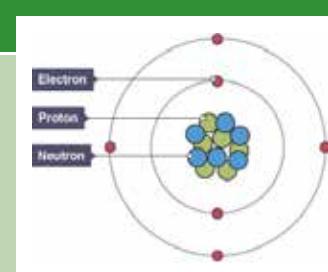


3 Resistance

- Measured in Ohms (Ω).
- Can be calculated using the equation $\text{resistance} = \text{voltage} / \text{current}$.

Atomic structure

Atoms are made of three types of sub-atomic particle.



- Protons which have a positive charge.
- Neutrons which have no charge.
- Electrons which have a negative charge.

Static electricity

When an object becomes charged, electrons are transferred from one object to another.

If an object gains electrons, it becomes negatively charged.

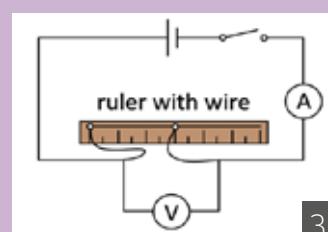
If an object loses electrons, it becomes positively charged.



Resistance of a wire

How does the length of the wire affect resistance?

As the length of the wire increases, the resistance becomes higher.



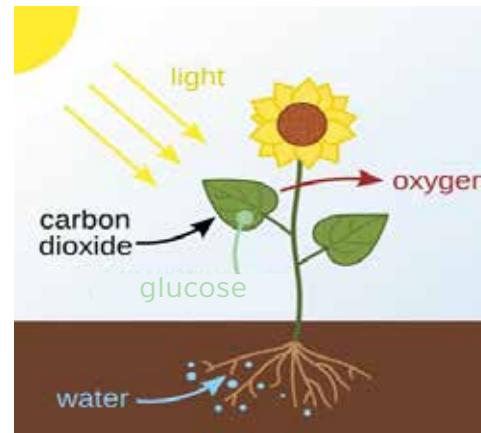
Science Ecosystems 3: Photosynthesis & Respiration

Key Vocabulary



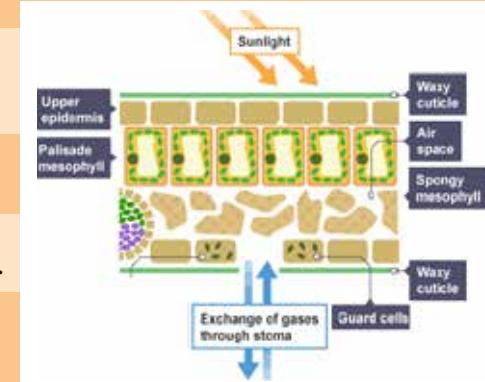
1	Aerobic	Takes place in the presence of oxygen.
2	Anaerobic	Takes place in the absence of oxygen.
3	Chloroplast	Part of plant cell that absorbs light for photosynthesis.
4	Chlorophyll	Green chemical found inside chloroplasts.
5	Fermentation	Another term for anaerobic respiration in plant cells and yeast.
6	Glucose	Sugar used in respiration.
7	Iodine	Chemical which turns blue-black in the presence of starch.
8	Lactic acid	A product of anaerobic respiration that causes muscle cramp.
9	Mitochondria	Part of a cell where aerobic respiration occurs.
10	Oxygen debt	When extra oxygen is needed to break down lactic acid.
11	Palisade cells	Cells in the upper surface of the leaf with many chloroplasts.
12	Photosynthesis	Reaction where plants absorb light to produce glucose.
13	Respiration	Reaction which breaks down glucose to release energy.
14	Spongy mesophyll cells	Cells in a leaf surrounded by air spaces to allow gas exchange.
15	Stomata	Holes on the bottom of the leaf to allow gas exchange.
16	Yeast	A microorganism used in the production of bread and alcoholic drinks.

Process of Photosynthesis



How is a leaf adapted for photosynthesis?

- 1 The palisade layer contains many chloroplasts to absorb light energy for photosynthesis.
- 2 The spongy mesophyll layer have air spaces around them to allow the diffusion of gases.
- 3 The stomata allow gases to enter and leave the leaf.
- 4 The guard cells control the opening and closing of stomata.
- 5 The leaf is also wide and flat to absorb more light for photosynthesis.



Equations

1	Photosynthesis	$\text{Carbon Dioxide} + \text{Water} \rightarrow \text{Glucose} + \text{Oxygen}$
2	Aerobic respiration	$\text{Glucose} + \text{Oxygen} \rightarrow \text{Carbon Dioxide} + \text{Water}$
3	Anaerobic respiration in animals	$\text{Glucose} \rightarrow \text{Lactic Acid}$
4	Anaerobic respiration in yeast (Fermentation).	$\text{Glucose} \rightarrow \text{Carbon dioxide} + \text{Ethanol}$

Fermentation

- 1 Yeast are microorganisms that respire anaerobically to produce carbon dioxide and ethanol. This is also called fermentation.
- 2 Yeast is added to bread dough and produces bubbles of carbon dioxide which makes bread rise.
- 3 Yeast is used when brewing beer. The yeast produces ethanol which is a type of alcohol.

Comparing aerobic vs. anaerobic respiration

	Aerobic respiration	Anaerobic respiration (in animals)
Reactants	Glucose and oxygen	Glucose
Products	Carbon dioxide and water	Lactic acid
Energy released	More	Less

Evidence for Photosynthesis – Testing for starch

We can prove that a plant produces glucose in photosynthesis by testing to see if a leaf contains starch.

The chemical iodine turns blue/black in the presence of starch. The glucose the plant makes is stored as starch.



Science Matter 4: Elements and the Periodic Table

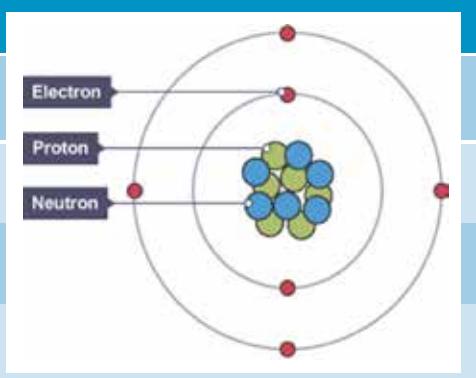
Key Vocabulary



1	Atom	The smallest part of a substance.
2	Atomic Mass	The number of protons + neutrons an element has.
3	Atomic Number	The number of protons/electrons an element has.
4	Chemical Property	The way an element or compound reacts with other chemical substances.
5	Compound	Two or more elements chemically joined together.
6	Element	A substance made of one type of atom only.
7	Formula	Symbols that tell us how many elements and atoms of each element are in a compound.
8	Group	The columns on the periodic table.
9	Molecule	Two or more atoms joined together.
10	Period	The rows on the periodic table.
11	Periodic table	A list of all known elements.
12	Physical Property	A property of an element or compound which can be easily seen or measured.

Atomic Structure

Atoms are made of three types of sub-atomic particle.



1 **Protons** which have a positive charge and a mass of 1.

2 **Neutrons** which have no charge and a mass of 1.

3 **Electrons** which have a negative charge and a mass of 0.

The Periodic Table

Groups		Periods															
1	2	3	4	5	6	7	0										
Li	Be							He									
Na	Mg																
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og

Mendeleev and the Modern Periodic Table

Mendeleev arranged the elements in order of increasing relative atomic mass.

He then arranged the elements by putting those with similar properties into groups.

To make his system work, Mendeleev left gaps for undiscovered elements.



Properties of Chemical Groups

Group	Name	Properties
1	Alkali Metals	Soft, float on water (less dense than water), react violently with water
2	Alkali Earth Metals	Less reactive, more dense and less soft than group 1
7	Halogens	Reactive and Toxic
0	Noble gases	Unreactive

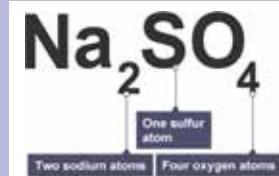
Chemical Symbols

1	Atomic Mass = Number of protons + neutrons
2	Atomic Number = Number of protons (which is equal to the number of electrons).
3	The first letter of a symbol is always written as a capital letter. Any other letters are written in lowercase.

atomic mass → 23
element symbol → Na
element name → Sodium
atomic number → 11

Chemical Formulae

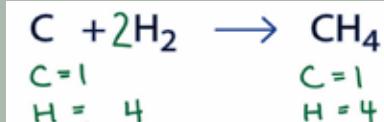
Chemical formulae tell us the number of atoms of each element.



Balancing equations

Chemical equations need to have the same number of atoms in the reactants and the products. This means there is the same number of atoms of each element on both sides of the arrow.

A big number at the front of a compound multiplies all of the atoms in the compound after the number.





The little words you use a lot

THE SUPER 7

TIME PHRASES

Specify **when** something is **happening** – in the **present, past or future** or whether we would like something to happen in an ideal world (**conditional**).

VERBS

Describe an **action**, state or occurrence – i.e. a doing, being or happening word.

OPINIONS

Explain **what we think** about the action or state of being – **positive or negative**.

JUSTIFIERS

Allow us to answer the question 'why?' to **give a reason** for our opinions... usually using '**because**'.

QUALIFIERS

Words that make our describing words even **more interesting**.

ADJECTIVES

Words that **describe** nouns (people, places or things).

CONNECTIVES

Words which **join together** two different, but related, parts of a sentence. They allow us to **extend** and develop our sentences.

1. Time Phrases

1	en general	in general
2	de vez en cuando	from time to time
3	nunca	never
4	la semana pasada	last week
5	el año pasado	last year

2. Verbs

1	fui	I was / I went
2	fue	it was / s/he went
3	había	there was /were
4	quiero	I want to
5	debo	I must / should
6	puedo	I can

4. Justifiers

1	ya que (fue)	because (it was)
2	dado que (sería)	because (it would be)
3	como	as

5. Qualifiers

1	realmente	really
2	casi	nearly / almost
3	completamente	completely
4	generalmente	generally
5	tan...como	as...as

6. Adjectives

1	difícil	difficult
2	fácil	easy
3	entretenido	entertaining
4	emocionante	exciting
5	relajante	relaxing
6	especial	special
7	increíble	incredible

3. Opinions

1	pienso que	I think that
2	creo que	I believe that
3	me parece(n) que	it seems to me that
4	me gustó	I liked

7. Connectives

1	o	or
2	u	or (before o)
3	además	moreover
4	sin	without
5	no obstante	nevertheless
6	por un lado	on the one hand
7	por otro lado	on the other

Key Vocabulary



1	para...	for...
2	el desayuno	breakfast
3	la comida / el almuerzo	lunch
4	la merienda	afternoon snack
5	la cena	dinner
6	como	I eat
7	bebo	I drink
8	los cereales	cereal
9	la fruta	fruit
10	las verduras	vegetables
11	la carne	meat
12	la pizza/pasta	pizza/pasta
13	las patatas fritas	chips
14	un bocadillo	a sandwich
15	el pescado	fish
16	el pan	bread
17	el café/el té	coffee/tea
18	la leche	milk
19	los caramelos	sweets

Core intent:

To be confident and competent in talking about what you eat and drink in past and present tense and giving your opinions.

Common phrases

1	Normalmente como cereales y fruta para el desayuno y es delicioso.	Normally I eat cereal and fruit for breakfast and it is delicious.
2	Me gusta la pizza porque es muy sabrosa.	I like pizza because it is very tasty.
3	Ayer comí pollo con patatas fritas para la cena pero no me gustó porque fue bastante malsano.	Yesterday I ate chicken and chips for dinner but I didn't like it because it was quite unhealthy.

Past (Perfect) Tense

Subject	Present - comer (to eat)	Past - comer (ate)	Present - beber (to drink)	Past - beber (drank)
I	como	comí	bebo	bebí
you	comes	comiste	bebes	bebiste
he/she/it	come	comió	bebe	bebió
we	comemos	comimos	bebemos	bebimos
you pl	coméis	comisteis	bebéis	bebisteis
they	comen	comieron	beben	bebieron

Key Questions

1	¿Qué comes / bebes normalmente ?	What do you normally eat/drink?
2	¿Qué comiste / bebiste ayer ?	What did you eat/drink yesterday?

Time Phrases

1	Por la mañana / tarde / noche	in the morning/ afternoon/ evening
2	Normalmente/ generalmente	normally/ generally

Adjectives

1	sano	healthy
2	delicioso	delicious
3	sabroso	tasty
4	asqueroso	disgusting
5	malsano	unhealthy

Key Vocabulary



1	el aceite	oil
2	las grasas	fats
3	los lácteos	dairy
4	las proteínas (la carne/el pescado)	proteins
5	los carbohidratos	carbohydrates
6	las frutas	fruits
7	las verduras	vegetables
8	los caramelos	sweets
9	los pasteles	cakes
10	el azúcar	sugar
11	la sal	salt

Grammar

Quantities		
1	demasiado	too much
2	mucho	a lot of
3	bastante	enough
4	más	more
5	menos	less

Core intent:

To be confident and competent in talking about eating and drinking healthily.

Common phrases

1	Para mejorar mi dieta debo comer muchas verduras.	In order to be healthy I must eat lots of vegetables.
2	Creo que los caramelos son más deliciosos que las frutas.	I think that sweets are more delicious than fruit.
3	Para mejorar mi dieta se debería incluir bastante grasas porque el aceite es menos malsano que los carbohidratos.	In order to be in shape it is necessary to include enough fats because oil is less unhealthy than carbohydrates.

In order to

Para + infinitive verb = in order to - e.g.

1	Para comer sana...	To eat healthily...
2	Para mejorar mi dieta...	To improve my diet...

Modal verbs

3	No debo	I must not
4	No se debe	You must not
5	No se debería	You must not
6	No puedo	I cannot
7	No se puede	You cannot

Key Questions

1	¿Tienes una dieta sana?	Do you have a health diet?
2	¿Qué haces para mejorar la dieta?	What do you do to improve your diet?
3	¿Qué se puede hacer para mejorar la dieta?	What can you do to improve your diet?

Key verbs

1	comer	to eat
2	beber	to drink
3	evitar	to avoid
4	incluir	to include

Comparatives

1	Creo que las verduras son más sanos que los caramelos.	I think veg are more healthy than sweets.
2	Las frutas son menos sabrosas que los pasteles.	Fruit is less tasty than cakes.
3	El azúcar es tan malsano que la sal.	Sugar is as unhealthy as salt.

Key Question

1 **¿Qué se puede hacer para llevar una vida sana?**

What can you do to lead a healthy lifestyle?

Key Vocabulary



1	hacer deporte frecuentemente	do sport regularly
2	dormir ocho horas al día	sleep 8 hours a day
3	comer...	eat...
4	más fruta y verduras	more fruit and vegetables
5	menos caramelos	less sweets
6	comida basura	junk food
7	fumar cigarrillos	smoke cigarettes
8	tomar drogas	take drugs
9	beber...	drink...
10	alcohol	alcohol
11	muchos refrescos	lots of fizzy drinks
12	agua	water

Core intent:

To be confident and competent in talking about how to lead a healthy lifestyle.

Common phrases

1	Para llevar una vida sana se debe hacer deporte frecuentemente.	In order to live healthily you must do sport regularly.
2	Pienso que es importante comer menos comida basura porque es tan malsana.	I think it is important to eat less junk food because it is so unhealthy.
3	En el futuro voy a beber mucho agua pero no voy a tomar drogas porque son muy peligrosas.	In the future I am going to drink a lot of water but I am not going to take drugs because they are very dangerous.

In order to

Para + infinitive verb = in order to - e.g.

1	Para llevar una vida sana	In order to live healthily
2	Para mantenerme en forma	In order to keep myself in shape

Future tense

voy a + infinitive verb = I am going to e.g.

1	En el futuro voy a comer menos comida basura	In the future I am going to eat less fast food
---	---	--

Modal verbs

1	(no) se debe	you must (not)
2	(no) se debería	you should (not)
3	(no) se puede	you can (not)
4	puedo	I can
5	debo	I must
6	debería	I should
+ infinitive verb - e.g:		
7	Se debe dormir ocho horas al día	You must sleep 8 hours a day