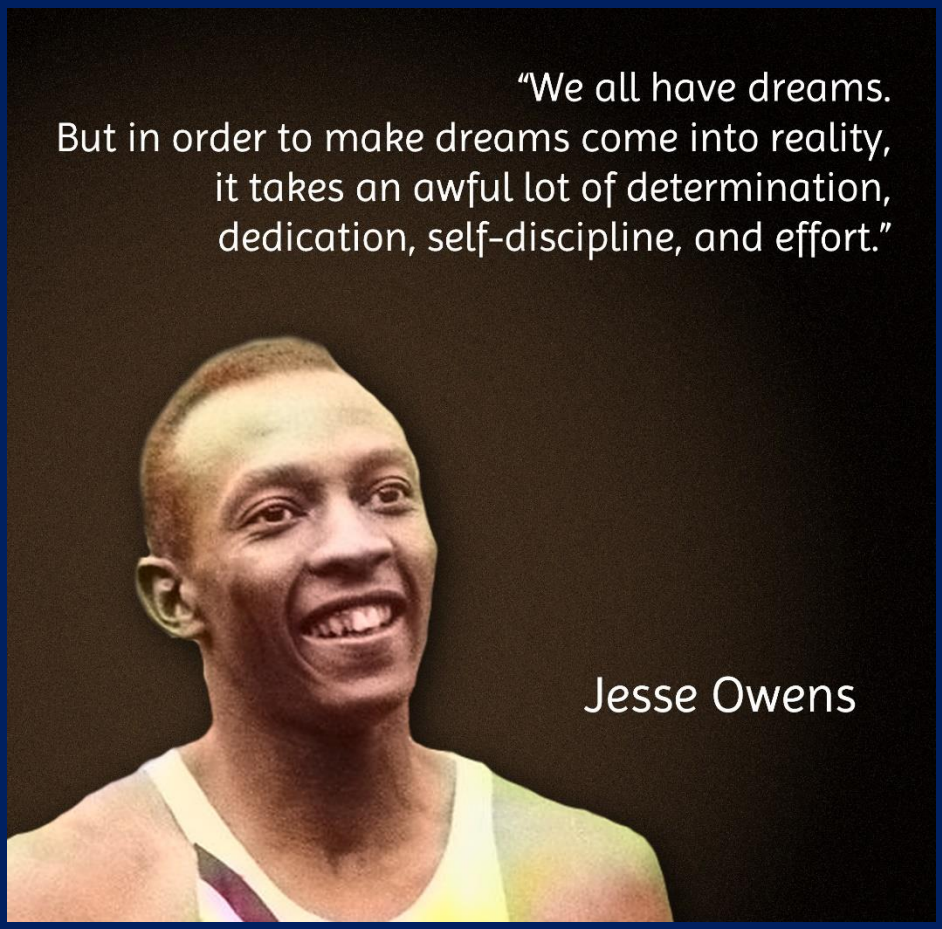
BOLDER Academy



Student Name _____

Form _____

Knowledge Organisers
Cycle B – Year 9

A **Bolder** future awaits...

How to Use your Knowledge Organiser

Each week for prep, you will be asked to complete:

- **Part A:** A vocabulary activity or writing task to explore and apply new key words from your knowledge organiser.
- **Part B:** Your teacher will give you an additional task connected to your subject – for example a challenge task or dig deep task from your knowledge organiser.

Both prep tasks are **compulsory**, you must complete them both.

You should use your knowledge organiser (KO) to help you with your prep tasks and you should always have them in lessons on your desk.

You will be given a minimum of one week to complete your prep tasks for each subject. **You are expected to spend at least 30 minutes on the tasks set each week for each subject.**

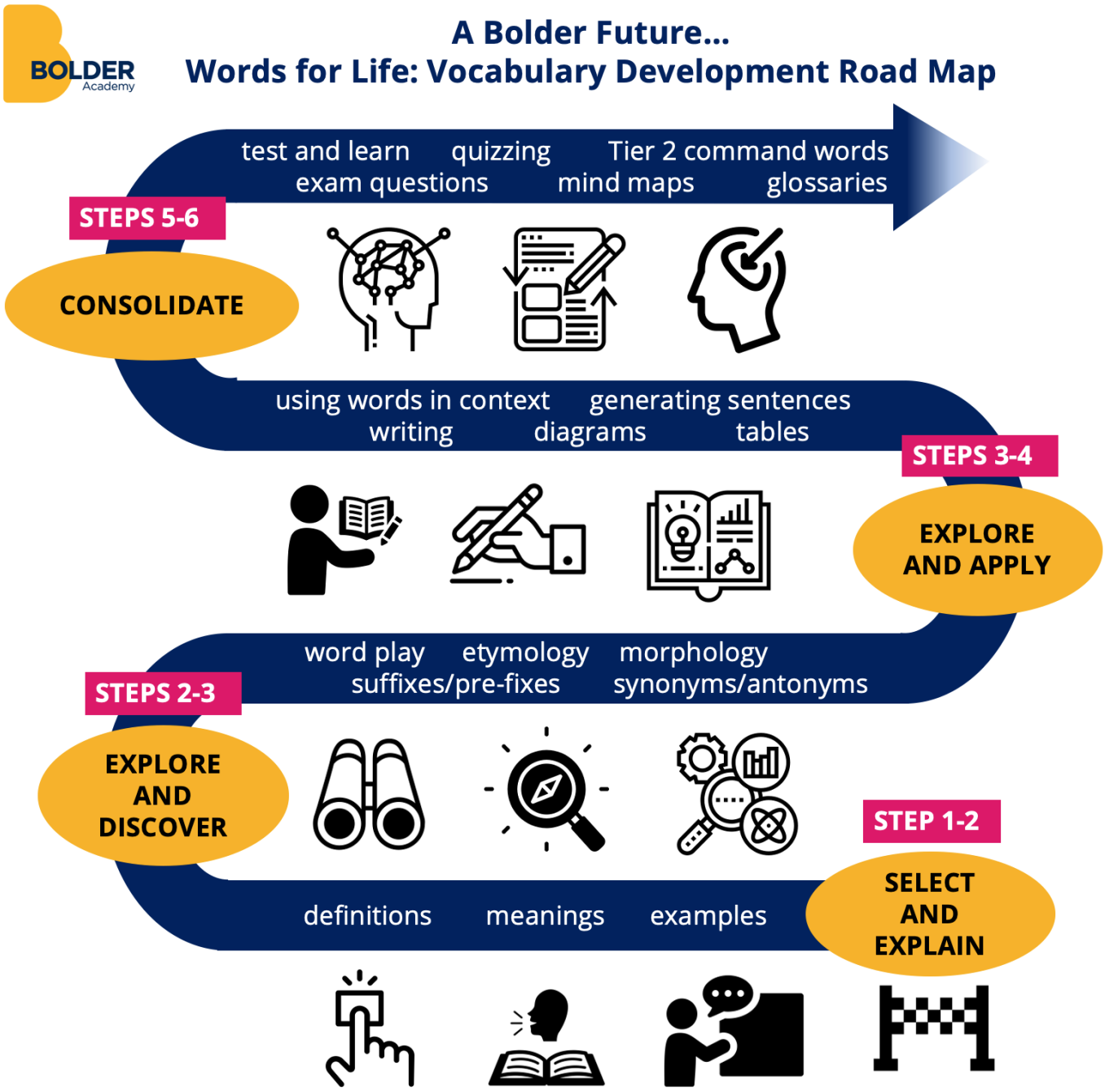
Finally, a reminder that prep completion is your responsibility.
If at any point you are finding your prep difficult, you must tell your Subject teacher in advance of the lesson so that we can offer the help you need. This can be done via:

- An email
- A note in your planner
- A 1:1 conversation with your teacher.

Words for Life at Bolder: Vocabulary Activities

Each week your teacher will set you vocabulary tasks using vocabulary from your knowledge organiser. You need to check carefully which activity your teacher has set you.

The road map shows you how you will develop your vocabulary and explains the process you go through when you learn new words. Your teacher will set you a variety of strategies leading up to the end of each cycle.



Vocabulary Websites

Try using these vocabulary websites to help you with your PREP and also to boost your vocabulary skills. These websites will help with a lot of the activities.

Describing Words - This website is great for descriptive vocabulary: put in a noun and you get countless descriptive words that you can use in your writing.

Vocabulary.com- This bumper website has lots of uses, from a dictionary and countless vocabulary questions.

Visuwords.com - This website creates interesting graphic visuals for your word choices – this is really useful for making word webs and word diagrams.

Online Etymology Dictionary - With a quick search, you can gain accessible word histories (alongside some very interesting articles) – this will help with your Greek and Latin root tasks.

Freerice - This unique website is for vocabulary quizzes! The premise of 'free rice' sees correct quiz answers activity the World Food Programme donate grains of rice to help end hunger.

Word Sift - This website is another very helpful tool that can visualise words in different ways.

Vocabulary is split into three categories. On your knowledge organiser you will see Tier 2 and Tier 3 vocabulary that you need to practice and learn:

Tier 1 Words (basic vocabulary)
Words we use all of the time: *dog, cat, house, green, party*
These are words that you will already know!

***Tier 2 Words* (Academic Vocabulary)**
Sophisticated words that fit into lots of subjects.

***The better knowledge you have of these words the more success you will have in all subjects! Examples: fundamental, affect, context, evaluate* - They help with your writing, reading and speaking. These are the words that make you stronger!**

These are the words that you need to practice the most.

Tier 3 Subject Specific Terminology
Words that you need to learn specifically for your subjects:
These more technical words are usually needed within a specific topic and are really important for classwork/homework and exams!
Examples in Science: catalyst, exothermic, dissection
Examples in English: dramatic irony, metaphor, tragedy

Word Histories: Etymology

Etymology is the study of the origin of words and the way in which their meanings have changed throughout history.

Did you know that the majority of complex vocabulary has Latin and Greek origins? For some of your vocabulary tasks you might be asked to look at where words come from and how words are created. Use these tables to help you.

Common Greek Roots

Greek Root	Definition	Example
anthropo	man; human; humanity	anthropologist, philanthropy
auto	self	autobiography, automobile
bio	life	biology, biography
chron	time	chronological, chronic
dyna	power	dynamic, dynamite
dys	bad; hard; unlucky	dysfunctional, dyslexic
gram	thing written	epigram, telegram
graph	writing	graphic, phonograph
hetero	different	heteronym, heterogeneous
homo	same	homonym, homogenous
hydr	water	hydration, dehydrate
hyper	over; above; beyond	hyperactive, hyperbole
hypo	below; beneath	hypothermia, hypothetical
logy	study of	biology, psychology
meter/metr	measure	thermometer, perimeter
micro	small	microbe, microscope
mis/miso	hate	misanthrope, misogyny
mono	one	monologue, monotonous
morph	form; shape	morphology, morphing
nym	name	antonym, synonym
phil	love	philanthropist, philosophy
phobia	fear	claustrophobia, phobic
photo/phos	light	photograph, phosphorous
pseudo	false	pseudonym, pseudoscience
psycho	soul; spirit	psychology, psychic
scope	viewing instrument	microscope, telescope
techno	art; science; skill	technique, technological
tele	far off	television, telephone
therm	heat	thermal, thermometer

Common Latin Roots

Latin Root	Definition	Example
ambi	both	ambiguous, ambidextrous
aqua	water	aquarium, aquamarine
aud	to hear	audience, audition
bene	good	benefactor, benevolent
cent	one hundred	century, percent
circum	around	circumference, circumstance
contra/counter	against	contradict, encounter
dict	to say	dictation, dictator
duc/duct	to lead	conduct, induce
fac	to do; to make	factory, manufacture
form	shape	conform, reform
fort	strength	fortitude, fortress
fract	break	fracture, fraction
ject	throw	projection, rejection
jud	judge	judicial, prejudice
mal	bad	malevolent, malefactor
mater	mother	maternal, maternity
mit	to send	transmit, admit
mort	death	mortal, mortician
multi	many	multimedia, multiple
pater	father	paternal, paternity
port	to carry	portable, transportation
rupt	to break	bankrupt, disruption
scrib/script	to write	inscription, prescribe
sect/sec	to cut	bisect, section
sent	to feel; to send	consent, resent
spect	to look	inspection, spectator
struct	to build	destruction, restructure
vid/vis	to see	televise, video
voc	voice; to call	vocalize, advocate

PREP Timetables

9A

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	Geography	French	Culture and Society	History	Computer Science
Subject 2	Science	Maths	English	Physical Education	Creative Arts

9B

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	Physical Education	Computer Science	French	Geography	Culture and Society
Subject 2	Science	Maths	English	History	Creative Arts

9C

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	Culture and Society	Spanish	Physical Education	History	Computer Science
Subject 2	Science	Maths	English	Geography	Creative Arts

9D

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	History	Geography	Spanish	Culture and Society	Computer Science
Subject 2	Science	Maths	English	Physical Education	Creative Arts

9E

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	Physical Education	Computer Science	History	Culture and Society	Geography
Subject 2	Science	Maths	English	Spanish	Creative Arts

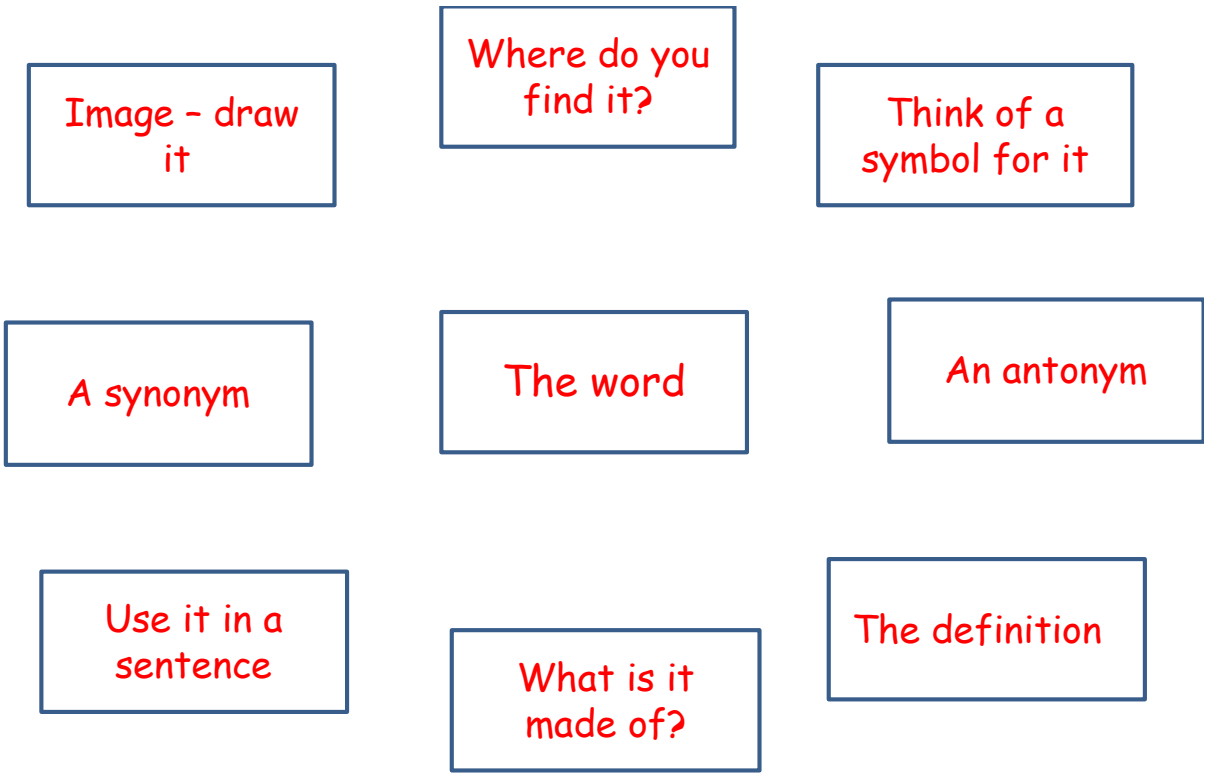
SELECT AND EXPLAIN – KWL

Your teacher will give you a new word or topic that you are going to be learning. You need to research the word and fill in the boxes.

What I **K**now	What I **W**ant to Know	What I Want to **L**earn

SELECT AND EXPLAIN – Word mapping

Your teacher will give you some new words to learn – create word maps like this to help you learn them.



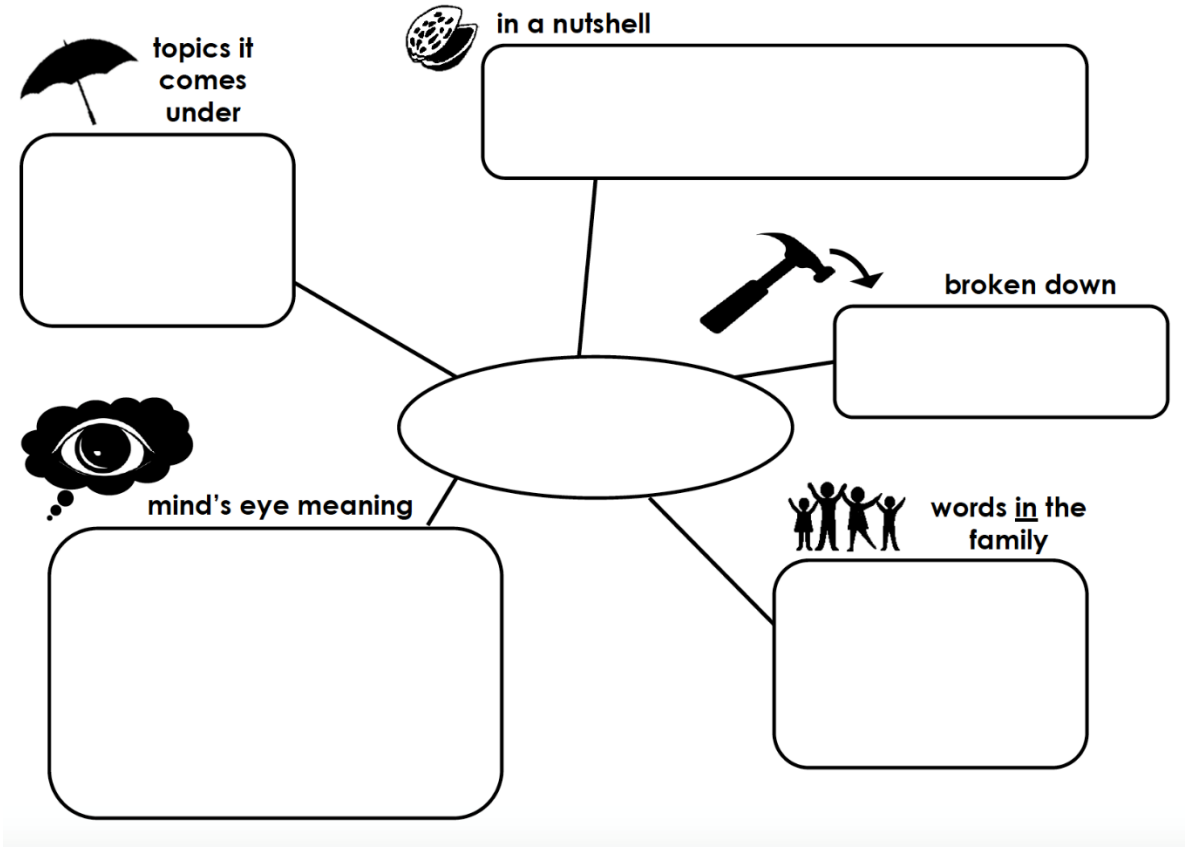
SELECT AND EXPLAIN – Key words in a text

Your teacher will give you something to read at home, fill in the table to show your understanding of the key words that you find in the text:

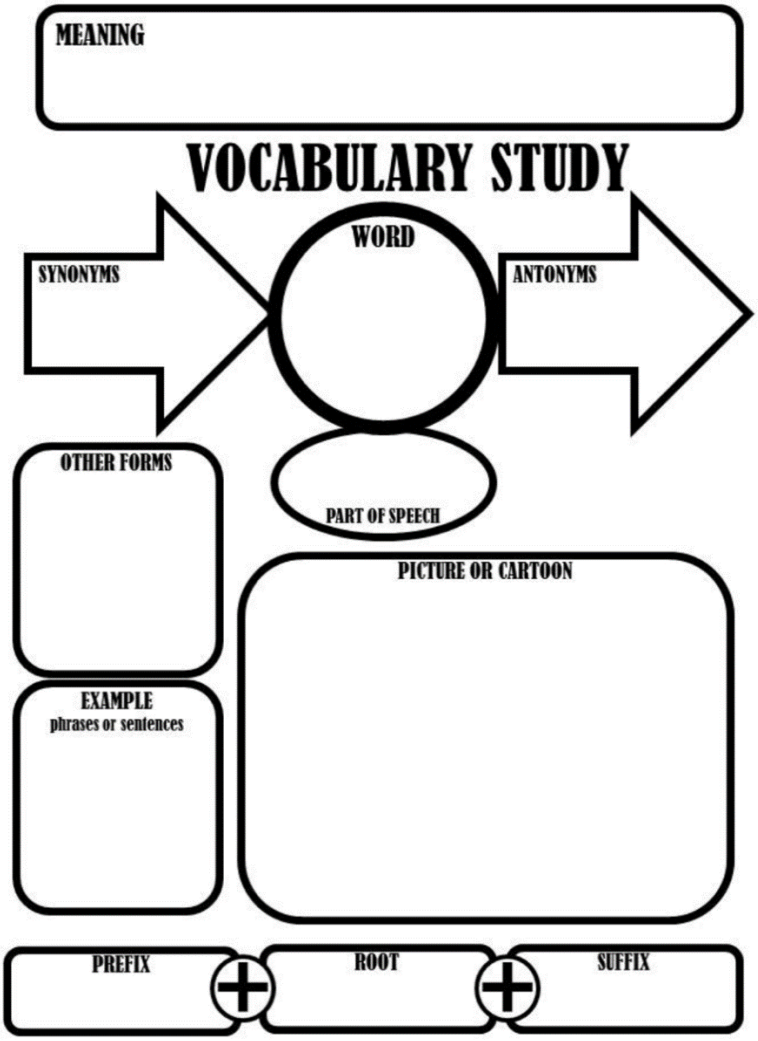
Important words in the text	Tick if this is an unknown word	Tick if you already know this word	Meaning of the word	Use the word in a new sentence

SELECT AND EXPLAIN – 'In a nutshell'

Your teacher will give you new words to learn – make maps like this to try to explain it.



EXPLORE AND DISCOVER – Vocabulary study



EXPLORE AND DISCOVER – Alliterative sentence generator

Your teacher will give you some words – put them in the correct part of the table and create alliterative sentences to play with the word. Each word must start with the same letter. This is really good for helping you remember new words!

	ADJECTIVE	NOUN	ADVERB	VERB	ADJECTIVE	NOUN
b	big	boys	brutally	bash	bald	bullies

EXPLORE AND DISCOVER – Research it, transform it, use it!

WORD:		
Etymology (Research the word origins)	**Transform it!** Transform the word into an image to help you remember it.	**Use it!** Use the word in three different sentences that you can use in your own work: 1. 2. 3.
Link It! Can you link the word to any vocabulary you already know?	**Take It Further!** How does this word link to your current topic?	

EXPLORE AND DISCOVER – 3 Truths and A Lie: Etymology

Your teacher will give you a word from your knowledge organiser with three truths and lie about the origins and etymology of that word.

English Example:

Pathos

Pathos makes you feel sadness or pity.
Pathos is a famous character in Greek mythology.
Pathos originally comes from the word suffering.
Pathos is a noun.

ANSWER: I think the lie is that pathos is a character from Greek mythology. This is a lie because pathos is not a character it is usually the part of the play where an audience feels sadness. It does however originate from Greek tragedy but it is not a character.

Ubiquitous

Ubiquitous is kind of like the plague. Even if you don't like it, you can't get rid of it.
Ubiquitous is an adverb.
Ubiquitous is similar to the words "pervasive" and "universal."
If cockroaches were ubiquitous, I'd move to Mars.

ANSWER: I think the lie is that ubiquitous is an adverb because it is actually an adjective which describes something appearing everywhere.

EXPLORE AND APPLY – First, Second, Last

Your teacher will give you a key word. You need to put it into three different sentences: 1st where the word goes at the beginning of the sentence, 2nd where the word is the second word of the sentence, 3rd where the word is the last word in the sentence.

Example for PE:

(First):
Endurance music is often used during our workout sessions in the gym.
(Second):
The **endurance** of Rafael Nadal was unending in the U.S open final as against his archrival Novak Djokovic.
(Last):
Patience is an attribute of **endurance**.

EXPLORE AND APPLY – Slow Writing

Your teacher will give you 6 of these slow writing prompts and some key words from your knowledge organiser. You must use them to write a paragraph on a topic you are given – using the 6 sentences.

Examples of sentences your teacher might give you:

Your sentence will start with the word 'when'	Your sentence will include a quote
Your sentence will start with an adverb (ends in ly)	Your sentence will include a metaphor
Your sentence will include a simile	Your sentence must be 17 words long!
Your sentence will start with the word 'despite'	Your sentence will have at least two commas in it
Your sentence will include an 'expert' opinion	Your sentence will have three words in it
Your sentence will include a fact or statistic	Your sentence must have three adjectives in it
Your sentence will include a clause that starts with the word 'however'	Your sentence will have a colour in it

WRITING FRAMES – Your teacher will set you a writing task that you need to plan – make sure you use the correct writing frame dependent on the task.

EXPLORE AND APPLY – Writing to explain

Writing to explain: Writing frame for explanation writing:

Your teacher might set this to help you revise for a topic and to check your understanding. Your teacher will provide you with the key words you need to use or the key word you are explaining.

Examples your teacher could give you:

- A maths equation or problem
- A scientific problem or experiment
- A moment from a book or something you read in class

Title/key vocabulary I need to use:
Describe what you are explaining (try and use the words how and why):
Explain what it is (use subheadings if necessary):
What happens (remember it is important to explain events in time order)?
Why does it happen?
How does it happen?
Explain the result (use time based connective, e.g. next…)
Conclusion:

EXPLORE AND APPLY – Writing to recount

Writing to recount:

Your teacher will give you a factual or fictional event that you need to recount. For example this could be:

- An experiment in Science
- An event in history
- A moment from a book

Title/key vocabulary I need to use:
What happened? Remember to describe events in sequential order, use verbs in the past tense and write in either the first or third person.
Where did it happen? Use time-based connectives
Who or what did it involve?
What was said or shared?
How did it end?
Conclusion. An important paragraph that should highlight the importance of these incidents.

EXPLORE AND APPLY – Writing to advise

Your teacher will give you a new topic, scenario or topic you need to revise:
For example you might be given:

- A topic to advise people on – something you may have learned in culture and society or Geography.
- You might need to give advice to a fictional character.
- You might be asked to give advice to someone on how best to learn something or complete something.
- You might be given a problem scenario and you need to give advice on how best to solve it.

Title/key vocabulary I need to use:
Explain what you are advising:
Explain why you are advising this: (Do X first…then you might want to consider)
Be encouraging-give evidence that this is best for them. (Don't worry…be positive…alternatively….)
Give a choice of alternatives.
Explain the outcome if they do as you have advised.
Conclusion. End by encouraging your reader to carry out the advice you have suggested.

EXPLORE AND APPLY – Creative writing plan

Your teacher might ask you to plan a piece of creative writing on a topic. Plan your ideas carefully

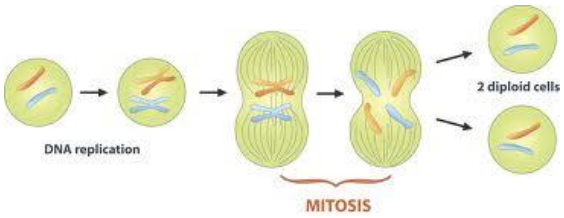
using this table.

Title:
Who are the characters? Why will we want to read about them?
Where does the action happen?
Plot?
Twist?
Ending?
Key vocabulary I will use:

CONSOLIDATE – Vocabulary concept cards

Create vocabulary concept cards to help you revise for your topic. You could include key information, diagrams, quotations, word parts – anything that will help you remember the words.

Divides the chromosomes in a cell nucleus



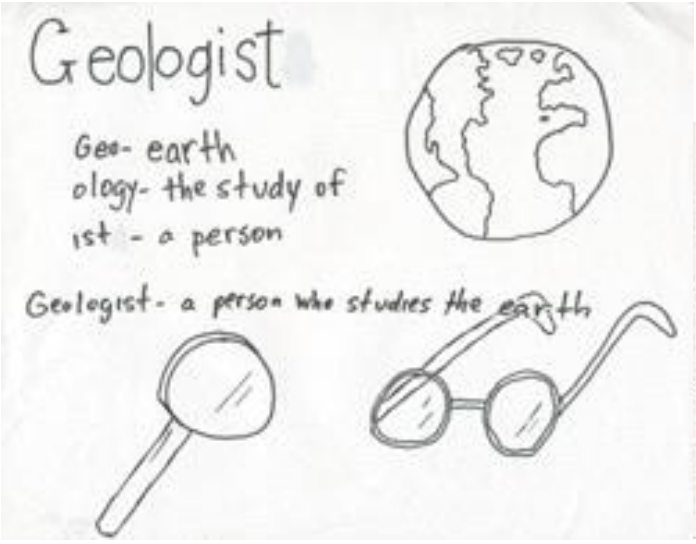
Mitosis

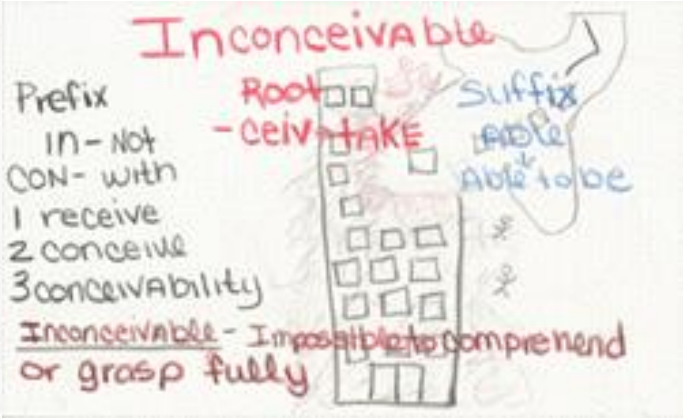
process by which a cell, which has previously replicated each of its chromosomes, separates the chromosomes in its cell nucleus into two identical sets of chromosomes, each set in its own new nucleus

Cellular division

Meiosis

Mitosis

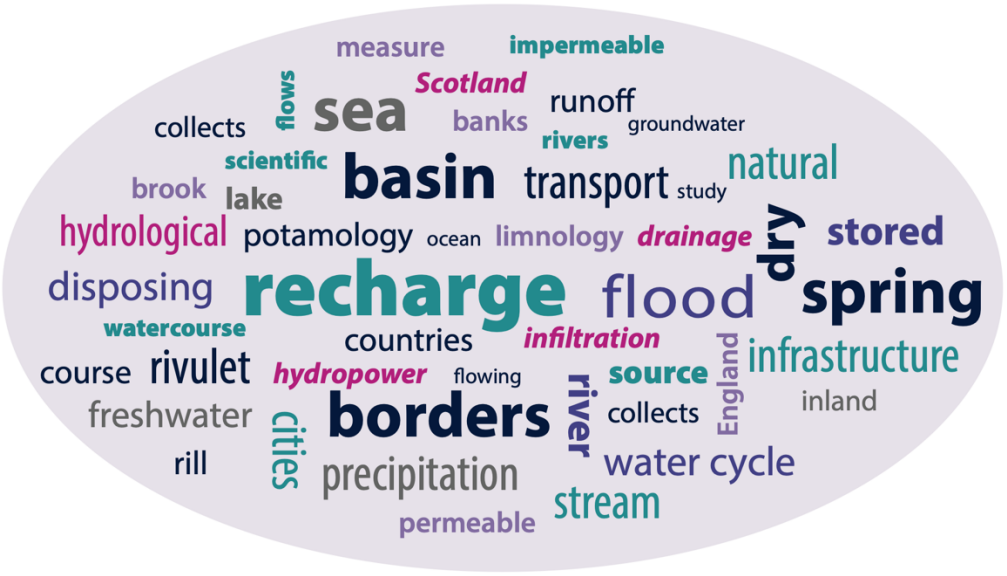




CONSOLIDATE – Word Clouds

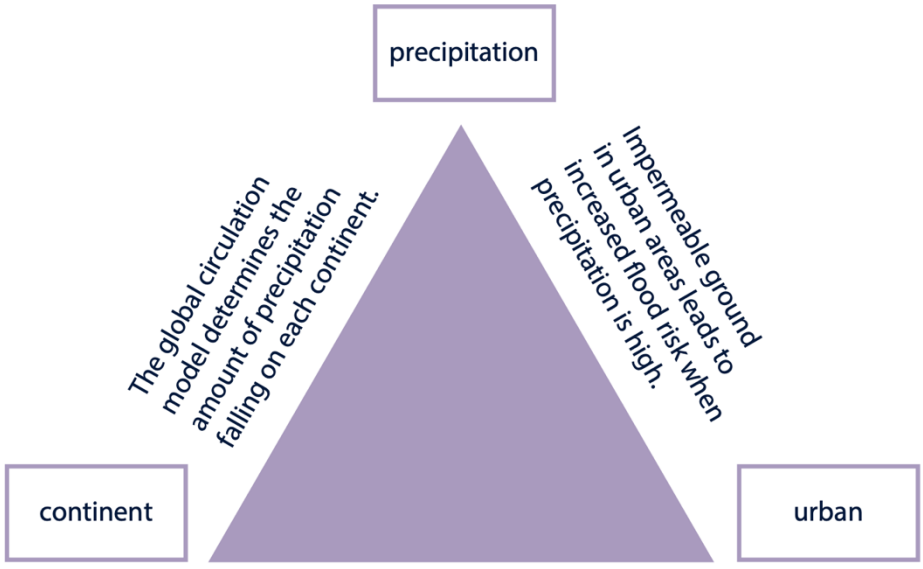
Revise a topic by creating a word cloud. The most important words that you need to remember should be the biggest. Use the website:
https://www.wordclouds.com for inspiration.

Geography Example:



CONSOLIDATE – Triangle Links

Your teacher will give you three key words. You need to put them into a triangle with the most important word at the top. Write a linking sentence along each of the sides of the triangle.



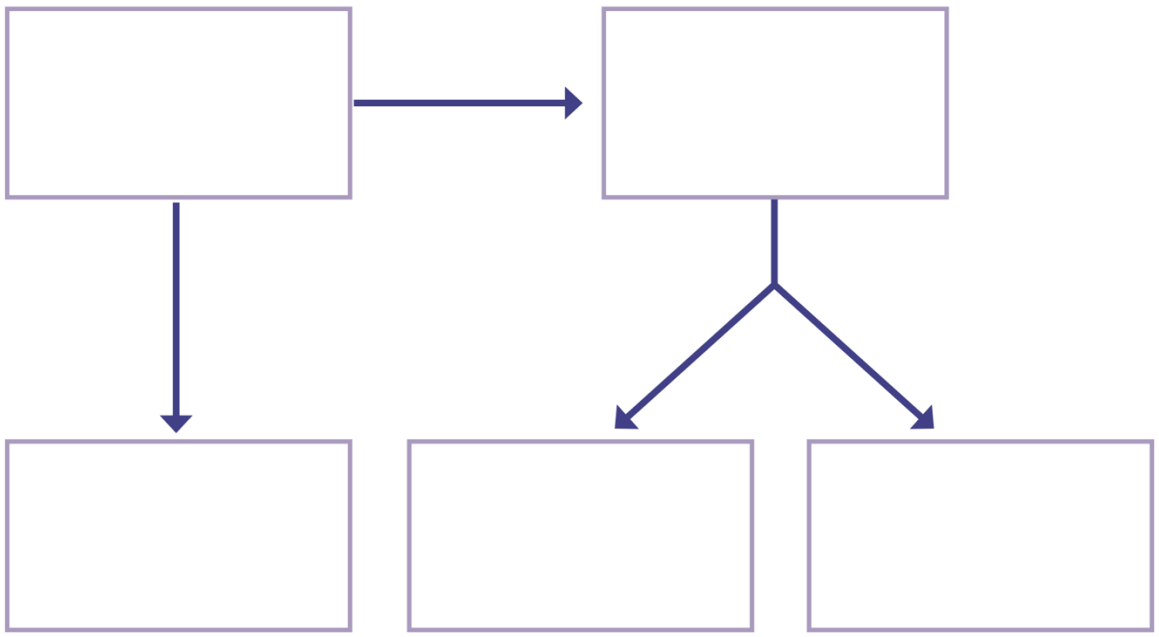
Rural–urban migration and the process of urbanisation is happening at a faster rate in LIDC cities (mostly in Africa, Asia, and South America).

CONSOLIDATE – Concept mapping

Your teacher will give you a set of terms from your knowledge organiser. Your task is to arrange them onto a page and demonstrate the links between the words. Explain the links between them by writing along the arrows. Challenge yourself to put the words in an order using the template.

Science Example:

speed	velocity	resultant force
friction	air resistance	weight
gravity	distance	terminal velocity



Bolder Talk Roles for discussions in lessons

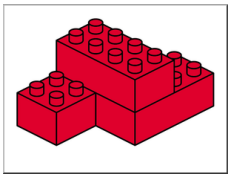
Instigator

The person who starts the discussion.

Will say:
"I would like to start by saying…"
"I think the first thing we should consider is…"
"To begin with let's talk about…"

Builder

Develops, adds to or runs with an idea.



Will say:
"I agree and I'd like to add…"
"Linking to your point…"
"Building on that idea…"

Challenger

Disagrees with or presents an alternative argument.

Will say:
"That's true, but have you considered…"
"You mentioned X but what about…"
"I hear what you're saying, but…"

Clarifier

Makes things clearer and simplifies ideas by asking questions.

Will say:
"What do you mean when you say…"
"Could you tell me more about…"
"Does that mean that…"

Prober/Questioner

Digs deeper into the argument, asks for evidence or justification of ideas.

Will say:
"What evidence do you have to support that?"
"How does that support your argument?"
"How did you come to that conclusion?

Summariser

Presents reflections on the discussion. May offer a conclusion or balanced assessment of the main points.

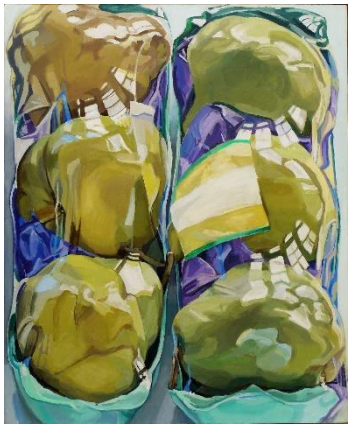
Will say:
"Overall, the main points covered were…"
"In summary…"
"From today's discussion, it's clear that…"

Tier 2 Vocabulary			Tier 3 Vocabulary		
1	**Arrangement**	This describes the organisation of objects placed together	**1**	**Still Life**	A work of art depicting inanimate subject matter- objects that do not move.
2	**Overlapping**	Layering objects on top of one another	**2**	**Composition**	This describes the positioning of different elements in an artwork
3	**Perspective**	Creating an impression of height, width and depth when drawing on a 2D surface	**3**	**Tonal Value**	This is how light or dark something is compared to other things around it
4	**Proportion**	This describes the size of different parts of a picture in relation to each other	**4**	**Negative Space**	This is the empty or open space around and between objects that helps to define their shape.
5	**Contrast**	The striking difference between two things near or next to each other	**5**	**Gradual Blending**	Using your medium skilfully to smoothly change from one tone/colour to another.
6	**Distance**	The length of the space between two points or objects	**6**	**Form**	This is a 3 dimensional shape created using tone
7	**Foreground**	The part of a picture that is nearest to the observer	**7**	**Dimensions**	Measurements of an object in a particular direction- height, width and depth
8	**Background**	The part of a picture that appears furthest from the observer	**8**	**Aesthetic**	A term to describe the beauty of art- aesthetically pleasing is art that you feel looks appealing
9	**Birdseye View**	A view from a high angle looking down	**9**	**Mark making**	This describes the range of ways you can make a mark
10	**Consumerism**	This is the idea that it is good and desirable to buy and use a lot of goods	**10**	**Typography**	The design and style of letterforms as a type of Graphic Art
Challenge Questions			**11**	**Pop Art**	An Art movement in which everyday objects were used as subject matter due to a rise in consumerism
1. **Why is the artist Caravaggio famous for his use of chiaroscuro?** 2. **Why was the advent of Pop Art considered as a revolution in the art world? How did consumerism affect this?** 3. **Is there any point to Photorealism? Why not just take a photo? What does the artist and the observer gain from this type of art?**			**12**	**Chiaroscuro**	The use of highly contrasting light and dark areas to create the illusion of 3D forms on a flat surface
			13	**Abstract**	Art that does not attempt to represent reality
			14	**Representational**	Something that looks realistically like what it is meant to be
			15	**Photorealism**	A style of art in which paintings and drawings are so painstakingly realistic that they look like a photograph

CARAVAGGIO

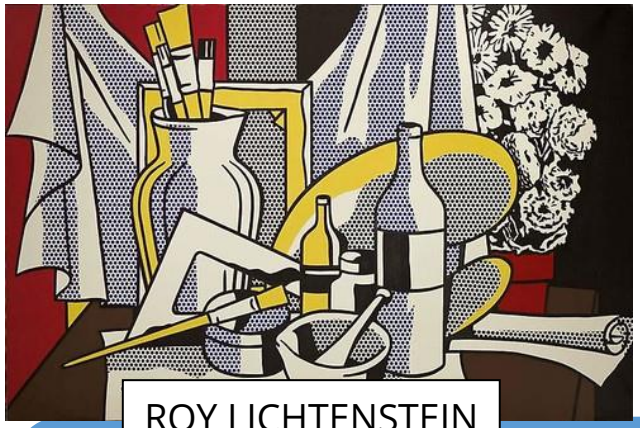
ANDY WARHOL

SARAH GRAHAM



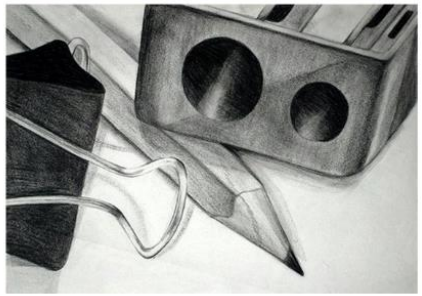
JANET FISH

MICHAEL CRAIG MARTIN

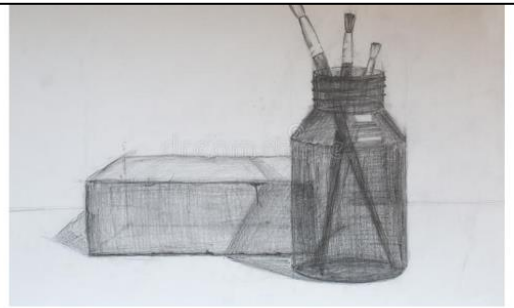


ROY LICHTENSTEIN

COMPOSITION IDEAS



CLOSE UP COMPOSITION



RULE OF THIRDS COMPOSITION

TRIANGULAR COMPOSITION

Explore the work of still life artists by visiting ex tes.

https://www.tate.org.uk/visit/tate-modern

https://www.nationalgallery.org.uk/

https://www.moma.org/

TIER 3 VOCABULARY

1. **Polyrhythm** – Many rhythms played at the same time
2. **Pentatonic** – A scale containing 5 musical notes
3. **Phase shift** – When two ideas begin together, then move out of time with one another
4. **Augmentation** – Lengthening the note values within a cell
5. **Diminution** – Shortening the note values within a cell

ACTIVE LISTENING (Challenge)

Each of the questions below should be used when completing listening homework.

1. Who composed this piece of music? When did they compose it?
2. Which instruments can you hear in this piece of music?
3. What is the tempo of this piece? You should use an Italian music term.
4. Describe the structure of this piece of music.
5. What is the time signature of this piece of music?
6. Describe the tonality of this piece of music.

How to actively listen

Sit down in a quiet space. Focus on the music.
Listen specifically for one musical element at a time.

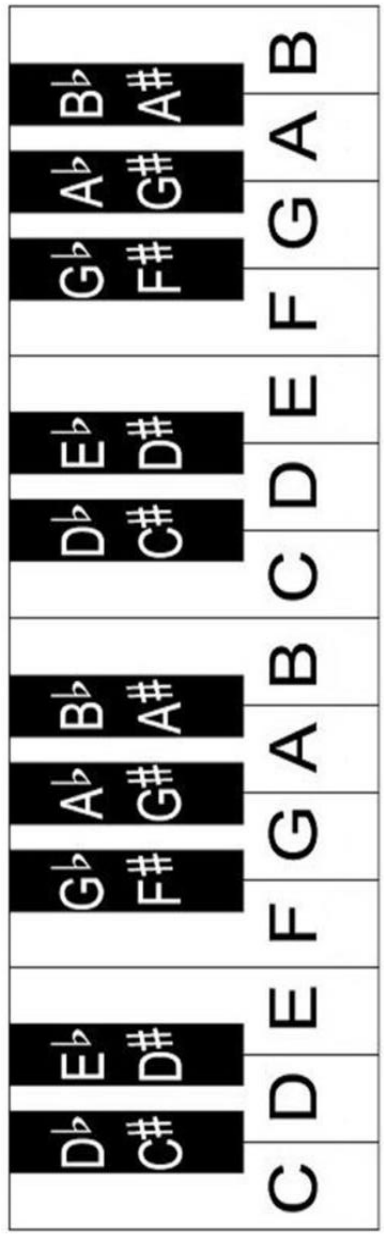
1960 Compositions

Look at the 1960 Compositions.
Then create 4 of your own to be performed.

Stay safe if working outdoors

DIG DEEPER

musictheory.net	Listening exercises to help with the theory of music
edu.bandlab.com	DAW to create music using a computer
noteflight.com flat.io	Two options for composing using musical notation
music-timeline.appspot.com	Music history, with listening examples



TIER 2 VOCABULARY

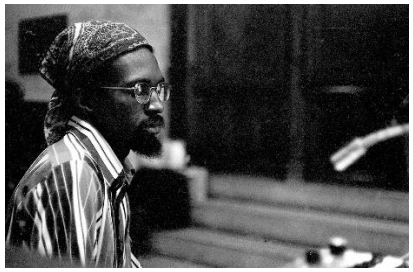
1. **Compose** – to write a new piece of music
2. **Perform** – to play a piece of music to an audience
3. **Rehearse** – to prepare for a future performance
4. **Appraise** – to listen to and assess how effective a piece of music is
5. **Cell** – A short musical idea used in minimalism
6. **Scale** – A series of musical notes placed in order of pitch
7. **Minimal** – The smallest amount of something
8. **Repetition** – A sound made or heard more than once
9. **Note addition** – The process of adding notes to a cell
10. **Note subtraction** – The process of removing notes from a cell

MUSICIANS IN FOCUS (Challenge)

LaMonte Young

Steve Reich

Julius Eastman



1) **Who** is the musician?
2) **What** are they most famous for?
3) **When** did they live?
4) **Where** were they born/where did they live?
5) **How or why** does this musician link to your learning?

MAD T-SHIRT (The Elements of Music)

MELODY	ARTICULATION	DYNAMICS
The main tune	How it's played	How loud or soft it is
TEXTURE	**STRUCTURE**	**HARMONY**
Layers of sound	The order of the sections	The chords that are used
INSTRUMENTATION	**RHYTHM**	**TEMPO**
Instruments used	Pattern of notes in time	The speed of the music

Tier 2 Vocabulary

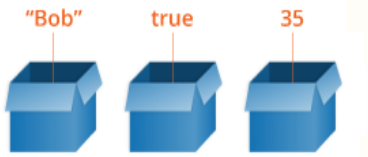
Tier 3 Vocabulary

Key: E – exam command word C = Challenge words CQ = specific challenge question associated. ***red text*** is hints to help avoid misconceptions and remember the knowledge.

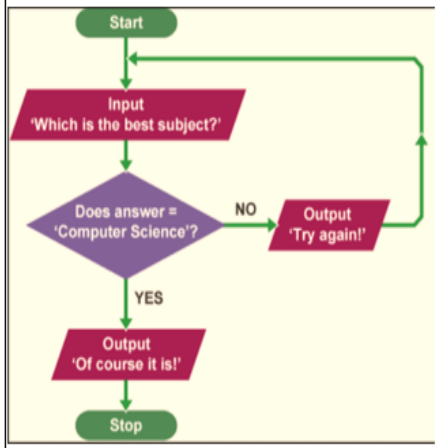
1	**Analyse *E***	Similar to evaluate, you examine [the code] and identify its strengths and problems.	1	**Algorithms**	A series of ordered instructions e.g. a recipe, dance routine; instructions are in **chronological order.** ***(cq4, 5,9)***
2	**Predict *E***	To guess/ make an estimation about a future event, which has not yet occurred.	2	**Flowchart symbols:** • **Decision** • **Input/Output** • **Data Flow** • **Process** • **Start/Stop**	**Decision** = ***a diamond*** = to make a choice. This will be a yes or no question. **Input/output** = ***a parallelogram*** = representing when data is entered or displayed **Data flow** = ***an arrow*** (not line!) = showing the direction of a data **Process** = ***a rectangle*** = an action/step e.g. a calculation **start/stop** = ***terminator oval*** = at the beginning and end of a flowchart ***(cq5)***
3	**Efficiency**	The shortest, quickest and most resourceful way to complete a task. ***(cq4).***			
4	**Syntax**	The arrangement of words and phrases; how something is written. ***(cq 7)***	3	**Computational Thinking:** **Abstraction** **Decomposition**	Skills required to successfully solve a problem. **Abstraction** involves taking away the irrelevant information and focusing only on what's necessary. **Decomposition** is the breaking down of a problem.
5	**Indentation** ***In code happens after :***	When the start of the line is moved in, further from the margin than the rest of the text.	4	**Variable**	A temporary storage location that stores one value, of one data type, which can change during the running of the code. Variable = varies= changes. ***(cq2, 3)***
6	**Robust**	Code that has is accurate and has minimum chance of errors. ***(cq 7)***	5	**Libraries *(c)***	A collection of functions and methods that allow you to perform actions without writing the code.
7	**Comments**	To describe what is happening. In python we use a # ***(cq 7)***	6	**Programming constructs *(c)*** • **Sequence** • **Selection** • **Iteration**	Constructs are like building blocks of your code. There's three for you to know. **Sequence**: instructions occurring one after the other; **selection**: an if statement, a user making a choice; **iteration:** making your code repeat – (think of *alliteration*). ***(cq5)***
8	***Test data:*** • ***Erroneous*** • ***Boundary*** • ***Normal***	To test a program works as expected. Erroneous data is data you'd expect it be rejected, normal data is data to be accepted and boundary data is data on either side of accepting and rejecting. ***(cq 3, 8)***	7	**Loops –** • **For** • **While** • **Nested *(c)***	Loops make your code repeat. A **For** loop runs for a **F**ixed amount of time; a **while** loop runs until a condition is no longer met, it runs while true and stops at false; a **nested** loop is a loop within a loop ***(cq5)***.
9	**Validation**	Setting restrictions so only data meeting certain criteria will be accepted, else its rejected. ***(cq 8)***	8	**Data types: *(cq8)*** • **Float, Integer, Boolean, String, character**	Date types: a particular kind of data item, defined by the values it accepts. **Float** = decimal/ real; Integer = whole number, positive or negative ; **Boolean** = a value that can have one of two (Boo, two!) possible values; **string** = combination of *characters* ; **character** = a single number, symbol, letter. ***(cq 3)***

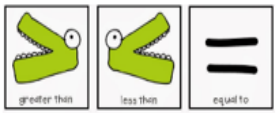
Key Diagrams

The QR code is a quiz to assess your knowledge **on programming constructs**. The link below will take you to the same place.
https://www.101computing.net/quiz/?q=Programming



Q5) relates to this flowchart.





Think b vs d

Test No	Test Data	Purpose	Expected Result	Actual Result
1	Enter a mark of '50' ; this is within the range	Test input mark function	Mark accepted	
2	Enter a mark of '0' ; this is on the limit of the range	Test input mark function	Mark accepted	
3	Enter a mark of '100' ;this is on the limit of the range	Test input mark function	Mark accepted	
4	Enter a mark of '101' ;this is out of the range	Test input mark function	Mark rejected	

Challenge Questions/ Tasks

1	**Abstraction, decomposition…** What do these mean? What other computational thinking methods can you find? (look at link 5)
2	A variable is like a box. Explain this **analogy**. What's the antonym to a **variable**? Provide examples.
3	A game developer has some code. She has **a variable** called score, a variable called name and a variable called age. Explain what is meant by variables. What are the **data types** of these variables? What other variables might exist?
4	Create an **algorithm** for crossing the road Show some teamwork and **modify** someone else's to increase **efficiency.** (look at link 2)
5	What is the **flowchart** showing? Can you create your own one? Or create one for your road crossing algorithm. Label **the symbols** and the **relevant programming constructs.**
6	Python is a **high-level language**. What does this mean? Compare this with low level.
7	Create a **python program** using all of the programming constructs. Use teamwork and have a friend help **debug** the code. Ensure its **robust** with **comments** and that its **efficient.**
8	The game developer is testing her code, so she needs to use test data. Can you research and create a test plan for her program (be **creative** and imagine the game scenario). Include the different **test data** types and explain its **validation.**
9	There are **different types of algorithms**- e.g. sorting and searching algorithms. Can you find out more information about these? (Look at link 1).
10.	How many links can you make with the words above? Can you complete a mind map to illustrate this?

(Be brave, dig deep and discover) People, places, events, emotions (website links, famous people, fun activities)

Be Brave Kind And Strong

1. https://www.youtube.com/watch?v=rL8X2mlNHPM- ***great videos on algorithms on YouTube- search Hungarian dancers.***
2. http://flowgorithm.org/documentation/tutorial/index.htm - ***fun software to construct your own algorithms***
3. http://the.computing.cafe/bee88e7a and https://www.bbc.co.uk/bitesize/topics/z7d634j - ***Lots of focus on algorithms here***
4. https://www.zdnet.com/article/ai-and-jobs-where-humans-are-better-than-algorithms-and-vise-versa/ - ***compare algorithms with humans.***
5. https://www.bbc.co.uk/bitesize/guides/zp92mp3/test***Revise and assess computational thinking here***
6. https://tools.withcode.uk/keywords/subject/ks3_computing - ***a great website where you can play games and revise***
7. www.computingpoetry.weebly.com –***Can you add some illustrations to go on the site? Can you work out the riddles?***
8. https://www.bitsofbytes.co/2---practical-problem-solving-and-programming1.html - ***Be BRAVE! GCSE style questions here.***

Explorative Strategies

An explorative strategy is something you can use to explore issues and characters to develop a better understanding of the drama you are creating. Below outlines how these techniques can help:

1. Narrating - This is useful in making a story more understandable for the audience.

2. Role play - Thinking, acting and even feeling differently to your ordinary self can help you empathise with that person and better understand an issue or theme.

3. Still image/ freeze frame - A picture paints a thousand words. Condensing emotions, events or relationships into an image is an excellent way of ensuring these are communicated in a detailed and effective way.

4. Hot-seating - This helps an actor become more familiar with their role.

5. Thought-tracking - In rehearsal it is an effective way of exploring characters and scenes in greater depth. Stopping the action and sharing thoughts enables the actor to fully understand how their character thinks or feels at any given moment. Sometimes the character might feel something different to the words they are speaking. This is called subtext and thought-tracking is a useful way of exploring it to realise the many layers within a scene.

6. Marking the moment - This is useful in rehearsal as it helps actors consider the most important moments communicated within a scene and ensures their impact is not lost upon the audience.

Dig Deeper – Further Reading

BBC BITESIZE– Explorative strategies
https://www.bbc.co.uk/bitesize/guides/zxpc2hv/revision/1

BBC BITESIZE – Responding to a stimulus
https://www.bbc.co.uk/bitesize/guides/zhpcy9q/revision/1

BBC BITESIZE – Developing an idea
https://www.bbc.co.uk/bitesize/guides/zkdp2sg/revision/1

Tier 2 Vocabulary

Research	To look into something closely.
Humanity	Human beings collectively ('crimes against humanity')
Disability	A physical or mental condition that limits a person's movement, speech, senses or activities.
Outsider	A person who does not belong, accepted by society or isolates themselves from society.
Society	People living together in an organised community.
Empathy	The ability to understand how someone else is feeling.
Articulation	Articulation is the act of expressing something verbally in a clear and coherent way.
Create	To put something together.
Develop	To add to something you have made.
Playwright	A person who writes plays.
Moral	A lesson that can be learned from a story or experience.
Collaborative	Working together.

Tier 3 Vocabulary

Joseph Merrick	At a young age he began to develop physical deformities that became so extreme that he was forced to become a resident of a workhouse at age 17. Seeking to escape the workhouse several years later, Merrick found his way into a human oddities show in which he was exhibited as "The Elephant Man."
Blocking	This relates to the process by which actors are told where to stand and where to move for the most dramatic effect
Holding scene	A holding scene is the most important scene in a play.
The fourth wall	The fourth wall refers to a performance convention in which actors imagine a wall which separates them from the audience.
Flashback	Showing an event that has happened in the past.
Transition	This relates to the change from one scene to the next or from one style to another.
Levels	Levels refers to the considered positioning of characters to show status.
Emotional memory	This requires an actor to recall emotional moments of their own past in order to find the right emotion for a character in a specific scene
Narration	The action of narrating a story.
Corpse	To corpse is to come out of character by laughing.
Energy	Energy refers to the amount of enthusiasm a performer brings to a role.
Slow motion	The action of showing something more slowly than it would happen in real life.

Writing a drama evaluation:

Start by introducing:

- What was the performance called?
- A brief summary of the plot
- How well DO you think the performance went?

Then use **PEEEL** to evaluate any of the areas below (unless specified otherwise)

- Physical or vocal skills (choose from your Knowledge Organiser)
- Use of staging/stage space/spatial awareness
- Use of props, lighting and sound
- The overall structure of the performance.

Conclude with: How successful the performance was overall and why.

P oint: What is the area you will be evaluating and what is the **point** of your paragraph?

E xample: Give a **specific** example of what acting skills were used – paint a picture of this moment using

E xplain: **Explain** the effect of this moment on the audience – why were these acting skills used?

E valuate: Now **evaluate** – was this moment effective? Why/why not?

L ink: **Link** it back to the original point and draw the paragraph to a conclusion – how **successful** was the moment?

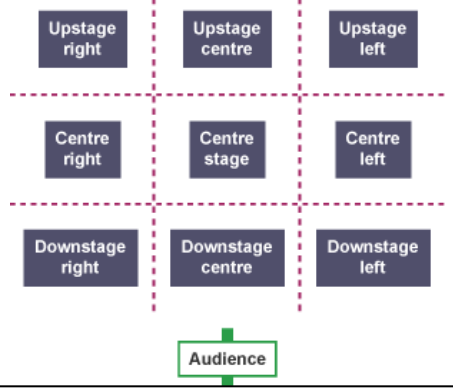
TOP TIPS FOR CREATING:

- ✓ **Be co-operative!** (take part and follow the instructions of your team members)
- ✓ Listen respectfully to others' ideas.
- ✓ Share your own ideas and make contributions.
- ✓ Stay in your working space!
- ✓ Plan your time effectively and structure your rehearsal.
- ✓ Think about where your audience will be and rehearse with this in mind.
- ✓ Make sure everyone knows what they are doing.
- ✓ Practice your transitions (the moments between a scene change.

TOP TIPS FOR PERFORMING:

- ✓ Perform with confidence – do not be embarrassed!
- ✓ Stay in role at ALL times, even if something goes a bit wrong!
- ✓ Make eye contact with the audience to engage them.
- ✓ Project your voice loudly and clearly
- ✓ Use a range of vocal and physical skills to show strong and convincing characterisation!
- ✓ Make sure you are facing the audience, so they can see your facial expressions.
- ✓ Don't shuffle about – move with purpose!

Areas of the Stage



Remember: The stage is always from the **actor's** point of view, as they are the ones standing on the stage. Demonstrate good **spatial awareness** by using all areas of the stage, where appropriate.

Challenge Questions

1. **Describe how one or more actors in a play that you have seen (or a film/ TV show you have watched) used their vocal and physical skills to interpret their role in the performance. Analyse and evaluate how successful they were in communicating their role to the audience.**

2. **Describe how a play that you went to see used lighting and/ or sound to create a mood or atmosphere. Analyse and evaluate how successful it was in creating mood or atmosphere for the audience.**

Tier 2 key vocabulary			Tier 3 key vocabulary Pink = The writer's techniques			Vocabulary for analytical writing		
1	rural 	Relating to the countryside, rather than the town.	1	Victorian society 	The period of British history when Queen Victoria ruled; 1837-1901. Jane often describes the oppressive social ideas of Victorian England.	1	suggests 	Explaining what you think a quote could mean and what you interpret from it.
2	antipathy 	A very strong dislike of something or someone	2	theme 	The central ideas of a novel/text.	2	highlights 	What does the writer draw attention to/what stands out in the quotation.
3	impudence 	The trait of being rude and impertinent.	3	Gothic literature 	Writing that uses elements of fear, horror, death, and gloom, as well as romantic elements and very high emotions.	3	reveals 	Interpreting what the writer is trying to expose or show the reader (in a quotation).
4	intimidation 	Having a frightening, overawing, or threatening effect.	4	theist 	The belief in one God as the creator and ruler of the universe, without rejection of revelation.	4	emphasises 	The particular importance or attention that is given to something.
5	formative 	Relating to the time when someone or something is starting to develop in character.	5	oppression 	Prolonged cruel or unjust treatment or exercise of authority.	5	metaphor 	A word or phrase used to compare two unlike objects, ideas, thoughts or feelings to provide a clearer description.
6	benevolence 	Kindness and generosity.	6	repentance 	The action of showing sincere regret or remorse.	6	tone 	The attitude or approach that the author takes toward the work's central theme or subject.
7	punitive 	Inflicting or intended as punishment.	7	Juxtaposition 	Two things being seen or placed close together with contrasting effect.	7	thesis 	The main idea that you want to discuss throughout an essay.

8	mortality 	The condition of one day have to die, being subject to death.
9	Endurance 	The power to withstand hardship or stress.
10	Infliction 	An act causing pain or damage.
11	morality 	Distinction between right and wrong or good and bad behaviour.
12	Dependent 	Someone who relies on another person to support them financially.
13	Humiliate 	To make someone feel stupid or ashamed. If something makes you feel stupid or ashamed.
14	Submissive 	Allowing yourself to be controlled by other people or animals.
	meek 	Quiet and unwilling to disagree or fight or to strongly support personal ideas and opinions.

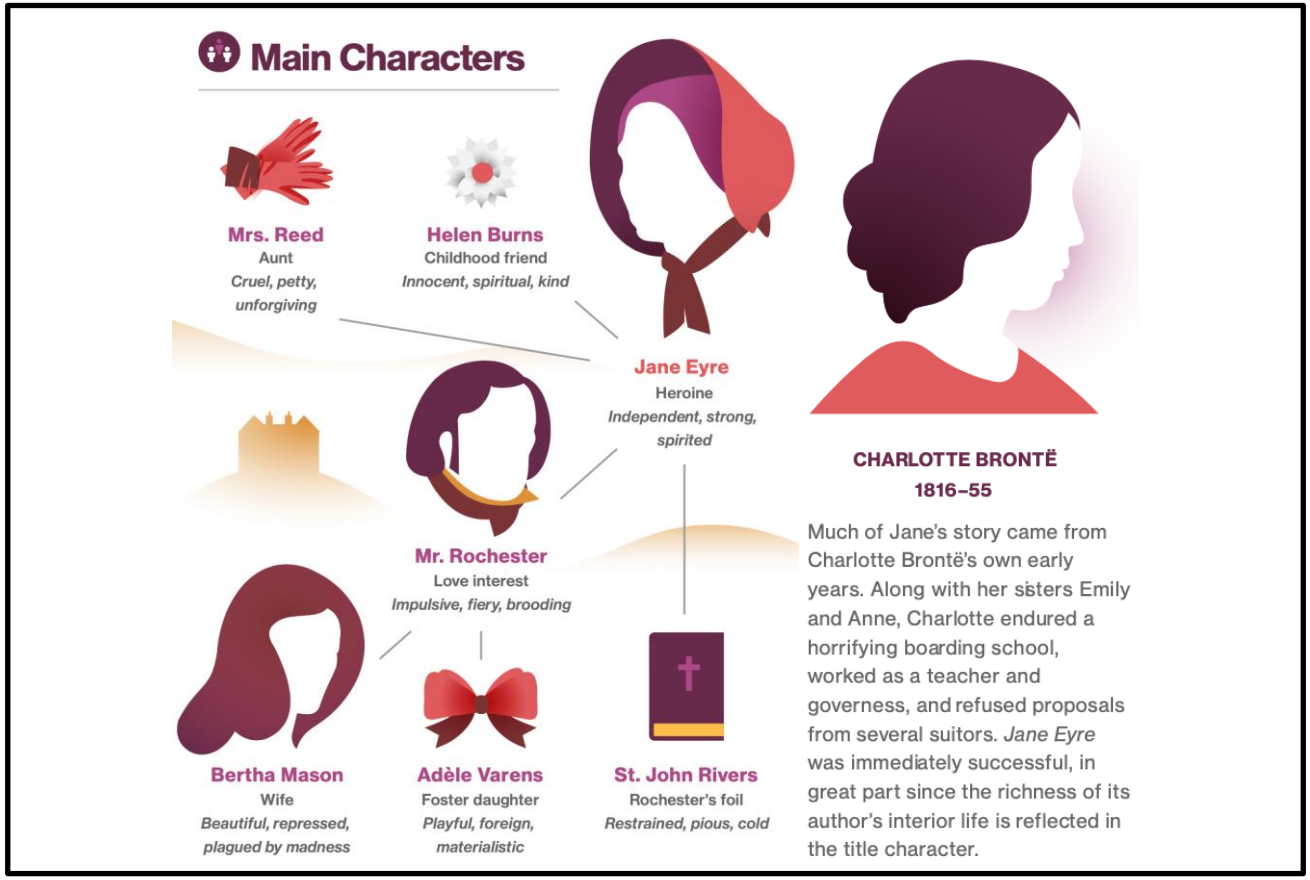
8	comparison 	The similarities or differences between two things or people.
9	symbolism 	The use of symbols throughout a text to represent ideas.
10	allusion 	A technique used to make an indirect reference to something that is intended to make you think of particular person or thing.
11	pathetic fallacy 	A technique used to give human emotions or qualities to nature or inanimate objects.
12	Hypocrite 	Someone who says one thing, but does the opposite at another time.
13	comeuppance 	When a villain receives some form of punishment for what they did.
14	Nurture 	Care that is given to someone while they are growing and developing.
15	Governess 	A woman who cares for and supervises a child especially in a private household.

CHALLENGE TASKS

1	Write a description of the Yorkshire landscape. Focus on the isolated and bleak moorland.
2	Write your own piece of creative writing about an incident of bullying.
3	Write your own description of the Red Room.
4	Compare Jane Eyre to another famous orphan (could be from a novel or film)
5	How did Victorians punish children for poor behaviour?
6	Write your own piece of creative writing about childhood fears.
7	Write Jane's diary as she thinks about going to school.
8	Were there different types of schools during the Victorian era? What were they like? What subjects did students study?
9	Write a description of Mr Brocklehurst. Is he a likeable character? Why? Why not?
10	Do you think that Mr Brocklehurst and Mrs Reed should be trying to change Jane's personality? Explain your answer using references to the novel.
11	What are Jane's opinions of the upper classes and the lower classes?
12	The narrator in the novel is an older Jane remembering her childhood. Find a few places where the voice of the older Jane intrudes on the narrative.

KEY DIAGRAMS AND QUOTES

"I will never call you aunt again as long as I live; I will never come to see you when I am grown up."
"Even for me life had its gleams of sunshine."
"I stood lonely enough; but to that feeling of isolation I was accustomed; it did not oppress me much."
"For it becomes my duty to warn you that this girl, who might be one of God's own lambs, is a little cast-away…"
"I desired liberty; for liberty I gasped; for liberty I uttered a prayer; it seemed scattered on the wind then faintly blowing."
(Who says these quotes? What do these quotes reveal? Can you analyse them?)



BE BRAVE, DIG DEEP AND DISCOVER

RESEARCH:
Research the Bronte sisters – why are they so famous as sisters and individually?
https://www.bronte.org.uk/the-brontes-and-haworth/haworth

WATCH:
Watch how they created The National Theatre production of Jane Eyre – how did they adapt it for the stage?

Watch these scenes from the 2011 film version. What do you notice about Jane and Rochester's relationship?

LISTEN:
Listen to this podcast: Jane Eyre – In Our Time. What key facts do you learn?

READ:
Read an article where famous female writers discuss Jane Eyre. Why is the novel so famous still today?

French **BE STRONG – Knowledge Organiser** **Cycle B Topic: 'Tu mènes une vie saine?' – Healthy Eating**

		French	Literal English	Standard English
1.		Salut! C'est moi, Hakim	*Hi! It's me, Hakim*	
2.		Aujourd'hui j'étais au club de foot après le collège.	*Today, I was at the club of football after the school*	
3.		J'adore jouer au foot, non seulement parce que c'est très actif et amusant,	*I love to play at football, not only because it is very active and fun*	
4.		mais aussi parce que c'est bon pour la santé.	*But also because it is good for the health*	
5.		Tu vois, je veux me sentir bien dans ma peau,	*You see, I want myself feel well in my skin*	
6.		donc, j'essaie de mener une vie saine en jouant au foot au moins trois fois par semaine.	*Therefore, I try to lead a life healthy by playing at football at least three times by week*	
7.		Qu'est-ce que tu fais pour garder la forme Aicha?	*What you do for to keep the shape Aisha*	
8.		Bof, pas grande chose. C'est-à-dire que,	*Oh, not big thing. It is at to say that*	
9.		je ne fais pas de l'exercice car je n'aime pas le sport.	*I not do of the exercise as I not like the sport*	
10.		Par contre, je mange sainement.	*By against, I eat healthy*	
11.		En fait, je dirais que je mène une vie saine.	*In fact, I would say that I lead a life healthy*	
12.		Bien que je ne fasse pas du sport,	*Well that I not do of sport*	

13.		selon moi, l'alimentation est plus importante pour le corps et donc, la santé.	*According me, the food is more important for the body and therefore, the health*	
14.		Pour être en forme, on doit manger trois fois par jour.	*For to be in shape, one must to eat three times by day*	
15.		De plus, il faut que ce soit un repas équilibré qui contient beaucoup de fruits et de légumes.	*Of more, it must that it be a meal balanced which contains a lot of fruits and of vegetables*	
16.		Il est aussi necessaire d'éviter de manger beaucoup de sucreries	*It is also necessary of to avoid of to eat a lot of sweets*	
17.		y compris du chocolat!	*There including of chocolate*	
18.		Autrefois, j'en mangais beaucoup - le chocolat, c'est ma faiblesse	*In the past, I them used to eat a lot – the chocolate it is my weakness*	
19.		ça va être très dur pour moi d'y arreter!	*It going to be very hard for me of it to stop*	
20.		Heureusement, je n'aime pas boire des boissons gazeuses,	*Luckily, I not like to drink some drinks fizzy,*	
21.		alors ça sera vraiment facile d'y eviter.	*So it will be really easy of it to avoid*	
22.		Finalement, je me couche tôt le soir pour être en forme le lendemain. Bonne nuit !	*Finally, I myself to sleep early the evening for to be in shape the next day. Good night!*	

French **BE STRONG – Knowledge Organiser** **Cycle B Topic: 'Tu mènes une vie saine?' – Healthy Eating**

	<u>Challenge Questions:</u> Translate the sentences into <u>French</u>
1	This year, **in order to be** in better shape, **I am going** to drink water regularly because **it is necessary** for the body.
2	My mother loves cakes and chocolate – **it is going** to be hard for her to **avoid them** but she is **going to** try.
3	It is important to sleep well to combat stress and lead a healthy lifestyle. According to me, one must sleep for at least eight hours.
	<u>(Be brave, dig deep and discover)</u> **<u>Recommended texts/websites/writers</u>**
	<u>French Vocabulary Learning:</u> ➔ **Senecalearning.com → French KS3 → French AQA (For Bilingual students and Challenge)** ➔ **Quizlet.co.uk** ➔ **<u>https://www.duolingo.com</u>** Select **French** as the language you want to learn → The app is also available ➔ **<u>https://www.memrise.com/courses/english/french/</u>** ***<u>French culture:</u>*** ➔ **<u>https://www.britishcouncil.org/sites/default/files/the_great_french_language_challenge.pdf</u>** ➔ **<u>https://lyricstraining.com/fr</u>** → The app is also available ➔ **<u>https://www.culturetheque.com/exploitation/GBR/accueil-portal.aspx</u>** → **LOTS AND LOTS** of **FREE** French magazines, comic, audio books, articles and film guides.

Tier 2 words			Tier 3 words		
1	Describe	Give details about what a map or diagram show ("say what you see" – speaking/writing like a geographer).	1	Erosion	The process in which rock is broken down and removed by water.
2	Explain	To give the reasons why or how something has happened.	2	Swash (also known as 'forewash')	Water that rushes up the beach (water moving towards the beach).
3	Evaluate	Bring forward the important points of or set out both sides of an argument/issue/ element of content, for and against.	3	Backwash	Water that flows back to the sea (water moving away from the beach).
4	Coast	The point where land and sea meet.	4	Fetch	The distance the wind blows across the water.
5	Destructive waves	*Destructive (from the words 'to destroy' = to break down).* These are waves that break down the beach by eroding (taking away) material, such as rock and sand.	5	Weathering	The process in which rock is removed in situ by physical, chemical, and biological factors.
6	Constructive waves	*Constructive (from the words 'to construct' = to build).* These are waves that build up the beach by depositing (dropping) material, such as sand.	6	Mechanical (physical) weathering	The breaking down of rocks due to physical processes e.g. freeze-thaw.
7	Physical Landform	A feature of the landscape that has been formed by erosion, transportation, and deposition.	7	Chemical Weathering	The disintegration of rocks due to chemical changes e.g. due to acid rain.
8	Process	A process is a series of actions or steps that cause something to take place. There are four erosional processes.	8	Biological Weathering	Plant roots grow in cracks and animals burrow causing the rocks to weaken and break down.
9	Features	Features are key factors of something, for example if associated with a meander it could be a bend in the river.	9	Hydraulic Power	Waves smash into rocks, forcing water air to get trapped in cracks. The force of the water breaks down material.
10	Management	In this unit, management refers to how to prepare and look after a coastal area prone to erosion.	10	Deposition	When the sea loses energy, it drops the sand, rock particles and pebbles it has been carrying, this is called deposition.
Graph and map types			11	Soft engineering	Where the natural environment is used to help reduce coastal erosion.
1	Bar Graph	To show Discrete Data (numbers), allows for easy comparisons. 	12	Hard engineering	Involves the construction of man-made physical structures to protect coasts from erosion.
2	Line Graph	To show correlation (relationships) between data sets. For example: change over time. 	13	Transportation	The movement of material in the sea and along the coast by waves. The movement of material along the coast is called longshore drift.
3	GIS	.A geographic information system (**GIS**) is a framework for gathering, managing, and analysing data.	14	Longshore drift	Sediment is moved along the coastline in a process known as longshore drift.

Challenge questions

1	Describe the differences between constructive and destructive waves. Use a diagram to support your answer. [4 marks]
2	If erosion outweighs weathering on a cliff face, what will the cliff face look like? Draw a sketch to show this. [2 marks]
3	Identify and describe THREE processes of erosion. [6 marks]
4	Describe TWO types of weathering. [4 marks]
5	What is longshore drift? Use a diagram to support your answer. [3 marks]
6	Describe two ways eroded material may be transported along a beach [4 marks]

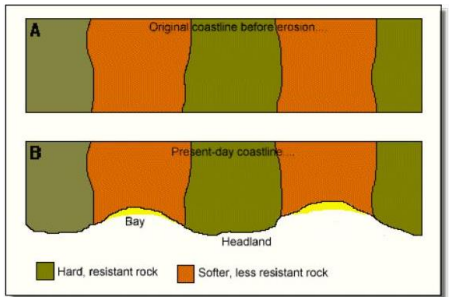
Digging deeper

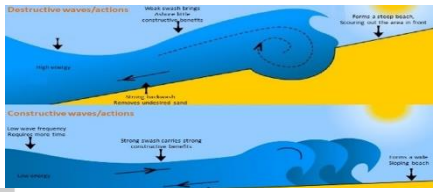
Sites which are useful for revision:
https://www.internetgeography.net/topics/coasts/
https://www.bbc.co.uk/bitesize/topics/z6bd7ty
Seneca: https://app.senecalearning.com/courses/login

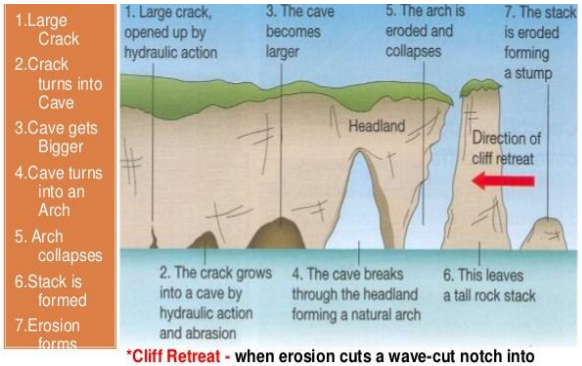
Sites for added challenge:
https://www.bbc.co.uk/bitesize/topics/zs3ptyc
https://www.s-cool.co.uk/gcse/geography/coasts/revise-it/coastal-transportation-and-deposition

Videos:
https://www.bbc.co.uk/bitesize/guides/zct8bk7/video
https://www.bbc.co.uk/iplayer/search?q=coasts
http://www.bbc.co.uk/learningzone/clips/living-with-coastal-erosion-in-happisburgh-east-anglia-pt-1-2/7361.html

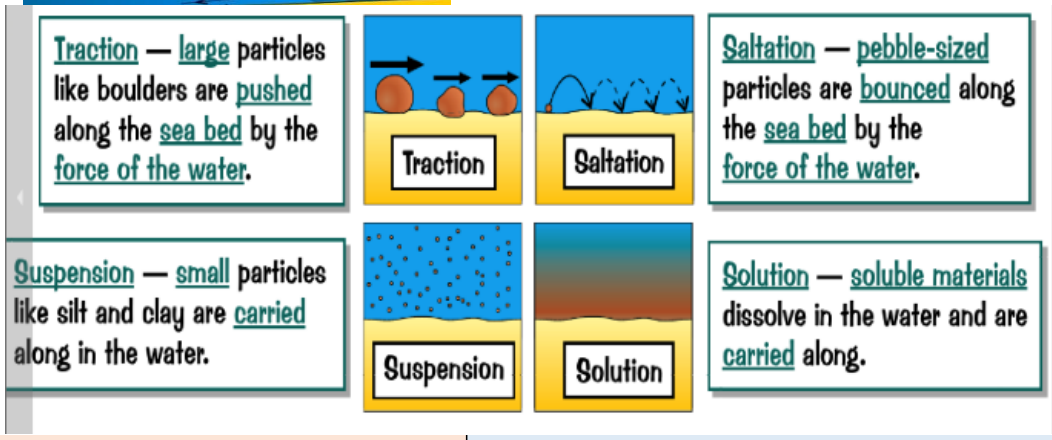
Key concepts







*Cliff Retreat - when erosion cuts a wave-cut notch into the base of a steep cliff



Hard Engineering: Using artificial structures to control natural processes e.g.
- Sea wall-concrete or rock barrier
- Gabions- wire cages filled with rocks
- Groynes-Wooden or rock structures built out to sea from the coast
- Rock armour- Piles of large boulders

Soft Engineering: More environmentally friendly methods that work with natural processes to protect the coast e.g.
- Beach nourishment-adding sand to the beach,
- Reprofiling-making the beach steeper,
- Dune regeneration-Marram grass being replanted to help stabilise sand dunes,
- Managed retreat-Allowing the sea to flood over low-lying land

TIER 3 VOCABULARY

1. **Capitalism** – trade and industry are controlled by private companies, rather than by the state.
2. **Socialism** – the state should control all trade, wealth and manufacturing.
3. **Communism** – the people control all and have an equal share according to their needs.
4. **Autocracy** – one person controls all government decisions.
5. **Dictatorship** – where one person (or group) rule without challenge.
   Authoritarian -
6. **Bolshevik** – a Russian Communist who advocates the violent overthrow of Capitalism.
   Fascism – ultra-right wing ideology that
   Hyperinflation -
7. **Proportional representation** – a system of voting where parties win the same percentage of seats that they gain in a vote.
8. **Nazism** – extreme racism or authoritarian views.
9. **Tsar** – the emperor of Russia before 1917
10. **Fuhrer** – the ruler of Nazi Germany
11. **Constitutional Monarch** – a King or Queen who rules with help of parliament.
12.

Key Leaders 1919-1939

Georges Clemenceau, France 1917-1920

David Lloyd George, Great Britain 1916-1922

Woodrow Wilson, USA 1913-1921

Gustav Stresemann, Germany (Chancellor) 1923

Vladimir Lenin, USSR 1917-1924

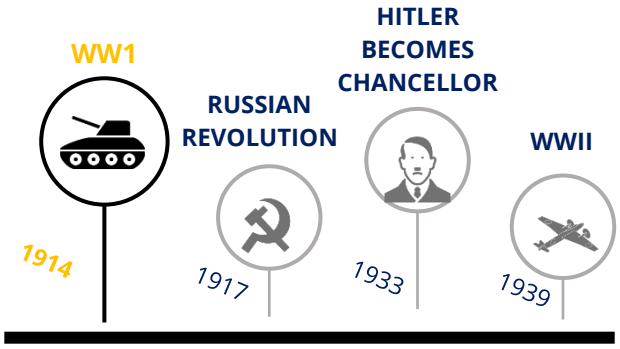
Friedrich Ebert, Germany (President) 1919-1925

Adolf Hitler, Germany 1933-1945

Neville Chamberlain, Great Britain 1937-1940

Josef Stalin, USSR 1924-1953

CHRONOLOGY



Inter-War period events

- **Russian Revolution** – 1917
- **Treaty of Brest-Litovsk (March)** – 1918
- **Tsar Nicholas and his family are executed (July)** – 1918
- **End of WWI (November)** – 1918
- **Treaty of Versailles** – 1919
- **The Bolsheviks win the Russian civil war** – 1922
- **Hyperinflation Crisis in Germany** – 1923
- **Wall Street Crash** – 1929
- **Hitler becomes chancellor (January)** – 1933
- **Enabling Act (March)** – 1933
- **Nuremburg Laws** – 1935
- **German expansion** – 1938
- **Outbreak of WWII** – 1939

TIER 2 VOCABULARY

1. **Abdicate** – where a monarch leaves their position as King or Queen.
2. **Republic –** a country ruled without a monarch.
3. **Election –** a formal vote for political office.
4. **Ideology –** ideas that make up political theory and policies.
5. **Guilty –** to blame for something.
6. **Treaty** – an agreement between countries
7. **Monarchy** – a country where a King or Queen is head of state.
8. **Industrialisation** – development industry in a country.
9. **Reparations** – compensation to those who have been wronged
10. **Oppression –** prolonged cruel treatment by authority.
11. **Terror** – the use of extreme dear to intimidate people.
12. **Chancellor –** a senior figure in government.

CHALLENGE

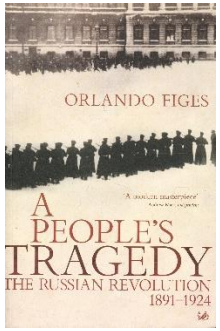
1. How significant was the Russian Revolution?
2. Was the Treaty of Versailles justified?
3. How far did the failure of the Munich Putsch help Hitler?
4. What was the most important factor for Hitler gaining power in Germany?
5. How far did the Treaty of Versailles caused World War Two?

KEY HISTORICAL WORKS

To Hell and Back - Ian Kershaw:

"The result would be Hitler's takeover of power in Germany on 30th January 1933, a date that would prove a disastrous turning point in European history. Of all the ways the Wall Street Crash and Great Depression reshaped Europe, what happened in Germany would prove the most fateful – not just for the people of Germany, but for the entire continent of Europe and, eventually much of the world. "

You will read extracts from this book in Cycle A lessons.



Want to challenge yourself further?

Why not read what another historian has said about Europe After World War One!

To supplement your reading during your prep, collect another hand out, from your teacher, of an article on the Russian Revolution by Orlando Figes! He wrote a *People's Tragedy: The Russian Revolution 1881-1924*.

DIG DEEPER

Research - Follow the links to discover what was happening around the world!

The fall of the Ottoman Empire
https://drive.google.com/file/d/1qNBDtvbvlk3oz9weCjBjDQgim2yglxxz/view
The Australian Emu War
https://drive.google.com/file/d/12ZDVdBbrqCScoqufWnETOmxgGqvIeHcv/view
The Spanish Civil War
https://drive.google.com/file/d/1nQP5HPbKTbFlvHDPWrZ6jUul3hjSzWX7/view
The British Union of Fascists
https://drive.google.com/file/d/1X1WEq-SfeW3fvVT90bGoiVW1p8pW8uzL/view

Listen – Listen to the following History Extra podcasts on Europe after WWI!

Lenin and the Russian Revolutions 6/10/2016
Dictators Explain 4/3/2020
The Rise of Hitler 17/2/2020
Appeasement and the road to WWII 24/6/2019

Watch – scan the following QR codes to watch documentaries on Europe after WWI!

Year 9: Autumn/ Spring Term

Coordinates, Linear Graphs, Direct and Inverse proportion, Scales and Standard Sequences, Expanding and Factorising, Changing the subject

Constructions, congruence and similarity, equations and inequalities, graphs and graphical solutions, introduction to Pythagoras

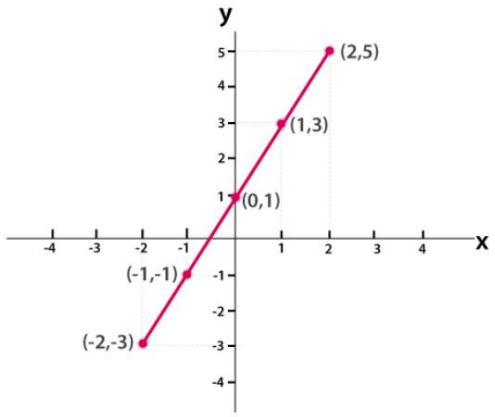
TIER 2 VOCABULARY

1	Identify	recognize or distinguish
2	Prove	To demonstrate the truth of something using evidence or an argument
3	Variable	A quantity able to assume different numerical variables
4	Equivalent	Equal in value, amount, function or meaning
5	Generate	produce a sequence of numbers by performing specified mathematical on an initial set.
6	Link	a relationship between two things
7	Investigate	carry out a systematic or formal inquiry to discover and examine the facts
8	Contrast	Things that are strikingly different to each other
9	Intercept	Where a line cuts a point
10	Interpret	explain the meaning of
11	Estimate	roughly calculate or judge the value, number or quantity
12	Justify	Show or prove to be right or reasonable
13	Construct	draw a geometrical figure accurately to given conditions.
14	similarity	
15	ratio	the quantitative relation between two or more amounts
16	generalise	make a general or broad statement by inferring from specific cases.

TIER 3 VOCABULARY

1	Sum	the total amount resulting from the addition of two or more numbers, amounts, or items.
2	Coordinate	each of a group of numbers used to indicate the position of a point
3	Expression	a collection of symbols that jointly express a quantity.
4	Product	The answer obtained when multiplying values together
5	Factorise	resolve or be resolvable into factors
6	Line Segment	a part of a line
7	Quadratic	involving the second and no higher power of an unknown quantity or variable.
8	Quadrilateral	a four-sided figure.
9	Inverse	a reciprocal quantity
10	Gradient	the degree of steepness of a graph at any point.
11	Parallel	side by side and having the same distance continuously between them.
12	Perpendicular	at an angle of 90° to another line
13	Centre of enlargement	The point from which the enlargement takes place
14	Congruence	identical in form
15	geometric	relating to geometry, or according to its methods.
16	veracity	conformity to facts; accuracy

USEFUL DIAGRAMS



Sequence:

3, 5, 7, 9, ...

1st term, 2nd term, 3rd term, 4th term

three dots means goes on forever (infinite)

("term", "element" or "member" mean the same thing)

Expand & Simplify...

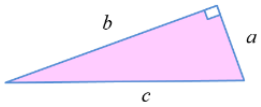
$5(x+3)+6(x-4)$

$5x+15+6x-24$

$11x-9$

Pythagoras' theorem

$a^2 + b^2 = c^2$



If $a^2 + b^2 = c^2$ → The triangle is right-angled.

$a^2 + b^2 = c^2$ ← If the triangle is right-angled...

A triangle with sides 5 cm and 6 cm and angle between them 70°.	SAS
A triangle with sides 6 cm, 7 cm and 8 cm.	SSS
A triangle with angles 50° and 70° and side between them 5 cm.	ASA
A right angle triangle with a hypotenuse of 8 cm and another side of 4 cm.	RHS

ETYMOLOGY

Number	Greek Prefix	Latin Prefix	Examples
0, zero		Nul-	Null, nil
1, one	Mono-	Uni-	Monotone, unicycle, uniform
2, two	Di-	Bi-, du-	Bicycle, bisect, bilingual, dioxide, duo, double,
3, three	Tri-	Tri-	Tricycle, triangle, triathlon, tripod
4, four	Tetra-	Quad- Qua-	Quadrilateral, tetrahedron
5, five	Penta-	Quin-	Pentagon, quintuplet
6, six	Hexa-	Sext-	Hexagon, sextuplet
7, seven	Hepta-	Sept-	Heptagon, septuagenarian
8, eight	Octo-	Oct-	Octagon, octopus
9, nine	Ennea-	Nona- Novem-	Novena, nonagon
10, ten	Deca-	Deci – Decem-	Decade, decimal, decagon
100, one hundred	Hecto-	Cent-	Century, centurion, cent
1000, one thousand	Kilo-	Milli- Mille-	Kilogram, Kilometre, millennium
½ Half	Hemi-	Semi-	Hemisphere, semicircle
¼ Quarter		Quart-	Quarter, Quartile
Many	Poly-	Multi-	Polygon, multiplication

Did you know?

During Roman times the year had 10 months with the first month as March. Some of the months were named after Gods or important people while others were just numbered. Can you use the prefixes in the table to work out which months were numbered?

Understanding Units of Measurement

Prefix Name	Prefix Symbol	Base 10	Decimal	English word
Tera-	T	10^{12}	1 000 000 000 000	trillion
Giga-	G	10^{9}	1 000 000 000	billion
Mega-	M	10^{6}	1 000 000	million
Kilo-	k	10^{3}	1 000	thousand
Hecto-	h	10^{2}	100	hundred
Deca-	da	10^{1}	10	ten
		10^{0}	1	one
Deci-	d	10^{-1}	0.1	tenth
Centi-	c	10^{-2}	0.01	hundredth
Milli-	m	10^{-3}	0.001	thousandth
Micro-	μ	10^{-6}	0.000001	millionth
Nano-	n	10^{-9}	0.000000001	billionth

Examples

A centimetre cm is one hundredth of a metre 1cm = 0.01m
A millilitre is one thousandth of a litre 1ml = 0.001l
A kilogram is one thousand times larger than a gram 1kg = 1000g

Did you know?

The word for one thousand comes from Italian "mille – thousand" "-oné – big" . A millioné was a 'big thousand' or a thousand thousand.

DIG DEEPER

Read The Everything Kids: Maths Puzzle Book by Meg Clements – puzzles, games and trivia.

Listen to the podcast on mathematics, logic and puzzles with Chaim Goodman-Strauss and Kyle Kellmas series – The Math Factor
https://mathfactor.uark.edu

Watch the documentary: The Story of 1 – history of numbers presented by Terry Jones, directed by Nick Murphy

Challenge – Maths

I= Eedi

Think of a number, then subtract 5, next divide by 8, next add 4, and finally multiply by 7.

Jo says you can write this as:
$7(\frac{(n-5)}{8}+4)$

Paul says you can write this as:
$7((n-5)\div 8)+4$

Who is correct?

A Only Jo
B Only Paul
C Both Jo and Paul
D Neither is correct

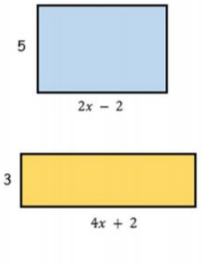
I= Eedi

Expand and simplify:
$3(2x+1)-(3x-8)$

A $3x-5$
B $3x+11$
C $9x-5$
D $9x+11$

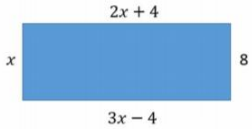
I= Eedi

The area of these shapes area equal. Which of these is correct?



A $10+4x-4=6+8x+4$
B $5+2x-2=3+4x+2$
C $10x-10=12x+6$
D $10x-2=12x+2$

I= Eedi

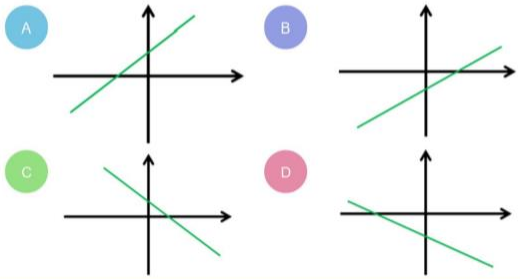


Which of the following statements is incorrect?

A $Area=3x^2-4$
B $Perimeter=6x+8$
C $2x+4=3x-4$
D $x=8$

I= Eedi

Which of the following diagrams could represent $y=2-3x$?



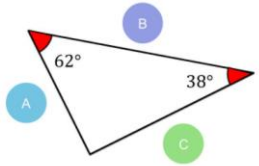
I= Eedi

A line has a gradient of 4 and passes through the point (1, 7). What is its equation?

A $y=7x+4$
B $y=4x+7$
C $y=4x+6$
D $y=4x+3$

I= Eedi

Which side is the hypotenuse?



D There is no hypotenuse on this triangle

I= Eedi

The shape below has a perimeter of p. If the length of all the sides are trebled, what is the perimeter of the enlarged shape?

A $9p$
B $p+3$
C $3p$
D Not enough information

I= Eedi

$8w < \cdots$

Using the diagram, which of the following correctly completes the inequality above?

A $2p$
B $3r$
C $4r$
D $3g$

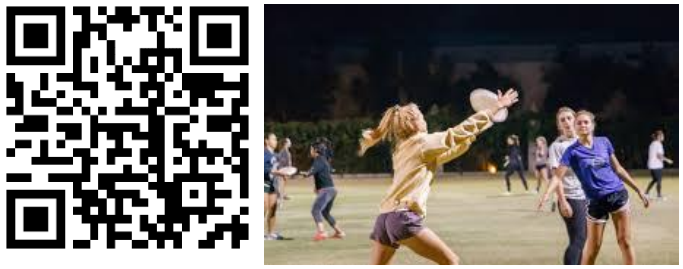
Tier 2 Vocabulary

1	**identify**	To recognise and name something or somebody
2	**describe**	Account of something without reasons
3	**explain**	Requires an example of a point. The answer must contain some linked reasoning
4	**analyse**	Break something down in to its component parts
5	**calculate**	Requires computation in relation to match data
6	**discuss**	Required to explore the issue/situation/problem that is being assessed in the question context
7	**evaluate**	Review/analyse information, bringing it together to form a conclusion/judgement
8	**strength**	A good or beneficial quality or attribute
9	**weakness**	A disadvantage or fault
10	**justify**	Give reasons for answers. This could range from a single response to extended writing answers, depending on question context.

Tier 3 Vocabulary

1	**attack**	The players in a team who are in the position of trying to score a goal or win points
2	**defence**	The action or role of defending one's goal, basket, wicket against the opposition
3	**outwit**	To defeat or get the better of (someone) by being clever or cunning
4	**tactics**	An action or strategy carefully planned to achieve a specific end
5	**technique**	A skill or ability in a particular field
6	**spatial awareness**	To be or becoming aware of ones surroundings, especially in competitive situations to support your team in the best possible way
7	**cardiovascular fitness**	The ability to exercise the whole body for long periods of time
8	**foul**	The action of breaking the terms of the laws within the game
9	**teamwork**	The combined action of a group, especially when effective and efficient
10	**co-operation**	The action or process of working together to the same end
11	**communication**	The successful conveying or sharing of ideas and feelings
12	**sportsmanship**	Fair and generous behaviour or treatment of others, especially in sporting contest.

Physical Education: PE **BE STRONG – Knowledge Organiser** **B Topic: Ultimate Frisbee**

Key Diagram	Challenge questions	
Task 1. Draw and label a diagram of an ultimate Frisbee pitch.	1.	Where is the local club closest to school for ultimate Frisbee?
	2.	How many players are on a team?
	3.	How do you score in ultimate Frisbee?
	4.	Explain why ultimate Frisbee is an invasion game?
	5.	Create a 10 minute game which supports spatial awareness, ensure this is written out in prep book. Diagrams will be required.
	6.	Identify three additional rules which are not mentioned above?
	7.	Design an 8 station circuit which will improve a players fitness in ultimate frisbee

Be brave, dig deep and discover	The National Governing body for Frisbee in the UK (see QR code above) https://www.ukultimate.com What type of diet should an elite ultimate frisbee player follow and can you explain why?	

Physical Education: PE **BE STRONG – Knowledge Organiser** **B Topic: Ultimate Frisbee**

Science Command Words

Tier 2 Word	Meaning
Calculate	Use numbers given in the question to work out the answer.
Conclude	Look at both sides of an idea and come to a decision.
Define	Say the meaning of something.
Describe	Recall some facts or processes in a scientific way.
Evaluate	Make points for and against an idea and come to a conclusion.
Explain	Say the reasons for something happening.
Label	Point out the correct names on a diagram.
Measure	Find the amount, size or degree of something.
Predict	Give a likely outcome.
Plan	Write a method.

Units

Quantity being measured	Unit in words and symbols		Quantity being measured	Unit in words and symbols	
Length	metre	m	**Temperature**	degrees Celsius	°C
Mass	gram	g	**Speed**	metres per second	m/s
Time	second	s	**Area**	square metres	m^2
Force	Newton	N	**Volume**	cubic metres	m^3

Length Units		How to convert
10 mm	cm	Divide by 10
100 cm	m	Divide by 100
1 000 m	km	Divide by 1000
km	0.62 mile	Multiply by 0.62
Area Units		
100 mm^2	cm^2	Divide by 100
10 000 cm^2	m^2	Divide by 10 000
1 000 000 m^2	km^2	Divide by 1 000 000
Volume Units		
1 000 cm^3	dm^3	Divide by 1000
1 000 dm^3	m^3	Divide by 1000

Experimental Words

Tier 3 Word	Meaning
Accurate	Close to the true value.
Reliable	The original experimenter repeats the investigation using same method and equipment and obtains the same results. Also known as **repeatable**.
Precise	Values are close together and close to the from the mean.
Variables	These are physical, chemical or biological quantities.
Control Variable	Control variable are the parts of the practical that have to be kept constant or monitored.
Dependent Variable	Dependent variable is the part of the practical that is measured.
Independent Variable	Independent variable is the part of the practical that is changed on purpose.
Prediction	A prediction suggests what will happen in the future.
A Fair Test	A fair test is occurs when only the independent variable affects the dependent variable.
Anomalies	These are values in a set of results which are judged not to be part of the variation caused by random uncertainty (an odd one out)

Labelled Diagram – Standard Form

Positive Powers of 10

$$10^1 = 10$$

$$10^2 = 100$$

$$10^3 = 1{,}000$$

$$10^4 = 10{,}000$$

Negative Powers of 10

$$10^{-1} = \frac{1}{10} = 0.1$$

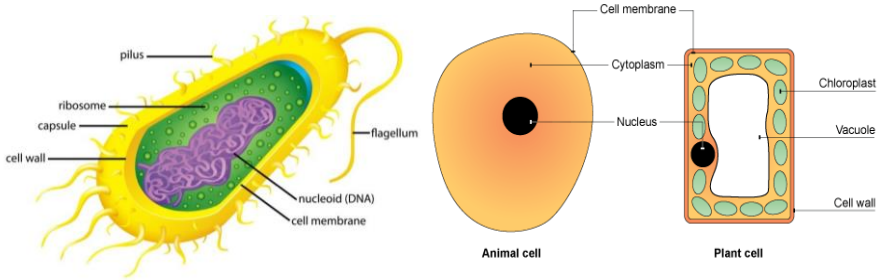
$$10^{-2} = \frac{1}{100} = 0.01$$

$$10^{-3} = \frac{1}{1{,}000} = 0.001$$

$$10^{-4} = \frac{1}{10{,}000} = 0.0001$$

Cells

Parts of a cell	Job (Function)
Nucleus	Controls the Cell
Cell Membrane	Controls what goes in and out of the cell
Cytoplasm	Where chemical reactions take place
Chloroplast	Where photosynthesis takes place (makes food for the plant)
Cell Wall	Protects and Supports the cell
Vacuole	Contains substances like Cell Sap
Mitochondria	The site of aerobic respiration.
Ribosome	The site of protein synthesis



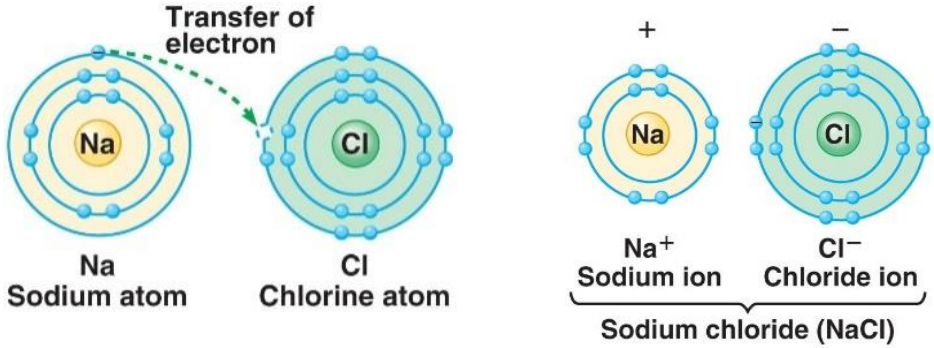
Eukaryote
- DNA is kept in a nucleus. - Has membrane bound organelles.
Prokaryote
- DNA is free to move around cell as a single DNA loop. - There is no nucleus.

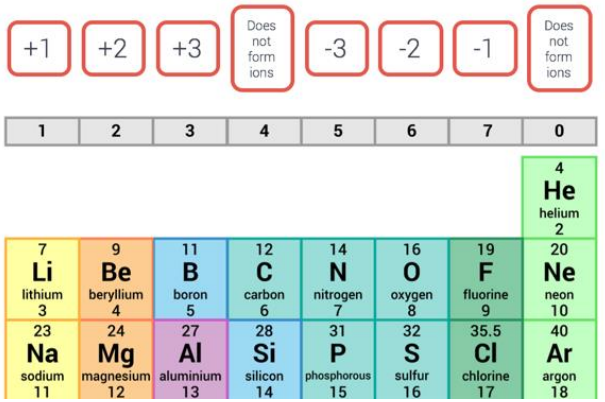
Electron Microscope	Light Microscope
Very high magnification	Low magnification.
Very high resolution	Low resolution.
Can study cells in more detail.	Can use on live specimens.
Increased understanding of organelles.	

Key Word	Definition
Magnification	How much larger the image size is compared to the actual size
Resolution	The ability to distinguish between 2 separate points.

Ionic Bonding

Tier 3 word	Meaning
Ion	A charged particle, can be positive or negative.
Ionic Lattice	A regular arrangement of positive and negative ions
Electrostatic attraction	Force of attraction between oppositely charged ions.
Stable	When an atom has a full outer shell of electrons.





Properties
High melting point due to strong forces of electrostatic attraction.
High boiling points due to strong forces of electrostatic attraction.
Conduct electricity when dissolved in water as ions are free to move.
Conduct electricity when molten as ions are free to move

Energy

Energy Stores	Description
Chemical	The energy stored within elements.
Elastic Potential	The energy stored within a stretched object or material.
Electrostatic	Energy stored by repelling and attracted forces.
Gravitational Potential	Energy held when an object is held at height.
Thermal Energy	Energy stored within objects that can release energy as heat.
Kinetic	Energy stored within a moving object.
Magnetic	Energy stored by repelling poles or attracting poles.
Nuclear	Energy stored within the nucleus of an atom.

Power is the rate at which energy is transferred or the rate at which work is done.

$$P = \frac{W}{t}$$

$$P = \frac{\Delta E}{t}$$

P = power (Watt)
W = work done (J)
ΔE = energy transferred (J)
t = time (s)

work done = force applied × distance moved in the direction of the force

$W = F \times d$

work, *W* is measured in **joules (J)**
force, *F* is measured in **newtons (N)**
distance, *d* is measured in **metres (m)**

The energy efficiency for any energy transfer can be calculated using the equation:

$$efficiency = \frac{useful\ output\ energy\ transfer}{total\ input\ energy\ transfer}$$

Efficiency may also be calculated using the equation:

$$efficiency = \frac{useful\ power\ output}{total\ power\ input}$$

Reducing unwanted energy transfers
Lubrication – reduces unwanted energy loss via friction.
Thermal insulation – reduces unwanted energy loss via heat dissipation to surroundings.

Deep Dive

Here are some websites and links to support you with extra challenge:

Useful websites
https://www.dogonews.com/category/science
https://www.sciencenewsforstudents.org/
https://sciencejournalforkids.org/
https://edu.rsc.org/eic/section/the-mole?adredir=1
https://cellfiemagazine.wixsite.com/blog
https://informationisbeautiful.net/beautifulnews/
https://www.positive.news/environment/renewal-why-clean-energy-should-power-the-new-normal/
https://www.tweentribune.com/
https://www.nationalgeographic.com/

Useful podcasts
https://www.bbcearth.com/podcast/
https://www.rebelgirls.com/pages/podcast

PhET™ INTERACTIVE SIMULATIONS

Other fun websites
https://scaleofuniverse.com/
https://phet.colorado.edu/
https://www.biointeractive.org/classroom-resources/how-animals-use-sound-communicate

Spanish **BE STRONG – Knowledge Organiser** **Cycle B Topic: El mundo del trabajo**

GRID 1

Mi padre My father **Mi hermano** My brother **Mi tío** My uncle	**es** Is **trabaja como** works as a	**actor** actor **abogado** lawyer **amo de casa** house-husband **cocinero** chef **contable** accountant **enfermero** nurse **granjero** farmer **hombre de negocios** business man **ingeniero** engineer **mecánico** mechanic **médico** doctor **peluquero** hairdresser **profesor** teacher	**Le gusta porque es** He/she likes it because it is **No le gusta porque es** He/she doesn't like it because it is **Le encanta porque es** He/she loves it because it is **Lo odia porque es** He/she hates loves it because it is	**aburrido** boring **active** active **difícil** difficult **divertido** funny **estimulante** stimulating **estresante** stressful **fácil** easy **gratificante** rewarding **interesante** interesting	**Trabaja en...** He/she works in... **el campo** the countryside **casa** at home **la ciudad** the city **un colegio** a school **un garaje** a garage **una empresa** a company **una granja** a farm **un hotel** a hotel **una oficina** an office **un restaurante** a restaurant **un taller** a workshop **un teatro** a theatre
Mi madre My mother **Mi hermana mayor** My oldersister **Mi tía** My aunt	**es** Is **trabaja como** works as	**actriz** actor **abogada** lawyer **ama de casa** house wife **cocinera** chef **contable** accountant **enfermera** nurse **granjera** farmer **mujer de negocios** business woman **ingeniera** engineer **mecánica** mechanic **médica** doctor **peluquera** hairdresser **profesora** teacher			

GRID 2

Trabajar to work

Yo	**trabajo** I work	**como** as	**abogado/a** lawyer **amo/a de casa** house-husband/wife **cocinero/a** chef **contable** accountant **dependiente** shop assistant **enfermero/a** nurse **esteticista** beautician **fontanero/a** plumber **granjero/a** farmer **ingeniero/a** engineer **mecánico/a** mechanic **médico/a** doctor **peluquero/a** hairdresser **profesor(a)** teacher **recepcionista** receptionist
Tú	**trabajas** you work		
Él/Ella **Mi padre** **Mi hermana** **Mi madre**	**trabaja** he/she works		
Nosotros **Mi padre y yo**	**trabajamos** we work		
Vosotros	**trabajáis** you guys work		
Ellos/ellas **Mis hermanos** **Mis hermanas**	**trabajan** they work		

¡Frases picantes! Spicy phrases!

Lo bueno de este trabajo es que es...
The good thing about this job is that it is...

Lo mejor de este trabajo es que es...
The best thing about this job is that it is...

Lo malo de este trabajo es que es...
The bad thing about this job is that it is...

Lo peor de este trabajo es que es...
The best thing about this job is that it is...

Dig Deeper

1. Download the Duolingo app and earn lots of points practising new Spanish words
2. Do a Spanish song challenge on LyricsTraining
3. Learn a Spanish tongue-twister and try to say it as fast as you can https://www.fluentu.com/blog/spanish/spanish-tongue-twisters-pronunciation/
4. Research options for work and study in Spanish-speaking countries
5. Find out more about Spain's economy https://kids.britannica.com/students/article/Spain/277157#208457-toc

duolingo

Spanish | **BE STRONG – Knowledge Organiser** | **Cycle B Topic: El mundo del trabajo**

GRID 3

Present tense of 'Ser' (to be)		**Singular (masc/fem)**
Yo	**soy** I am	**abogado/a** lawyer
Tú	**eres** you are	**amo/a de casa** house-husband/wife
Él/Ella **Mi padre** **Mi hermana** **Mi madre**	**es** he/she is	**cocinero/a** chef **dependiente/a** shop assistant **enfermero/a** nurse **fontanero/a** plumber
Nosotros **Mi padre y yo**	**somos** we are	**granjero/a** farmer **ingeniero/a** engineer **mecánico/a** mechanic
Vosotros **Vosotras**	**sois** you (men) are **sois** you (women) are	**médico/a** doctor **peluquero/a** hairdresser
Ellos/ellas **Mis hermanos**	**son** they are	**profesor(a)** teacher **contable** accountant **recepcionista** receptionist

Most nouns (including jobs) add an 's' if plural e.g. Mis padres son dependientes.

GRID 4

Él/Ella he/she **Mi abuelo/a** my grandfather/ grandmother **Mi amiga Ana** my friend Ana **Mi amigo Paco** my friend Paco **Mi mejor amigo/a** my best friend **Mi gato** my cat **Mi hijo/a** my son/daughter **Mi madre** my mother **Mi padre** my father **Mi perro** my dog **Mi tortuga** my tortoise **Mi primo/a** my (m/f) cousin **Mi novio/a** my boyfriend/girlfriend	**es** are	**más** more +	**aburrido/a** boring **alto/a** tall **amable** kind **antipático/a** unfriendly/mean **bajo/a** short **cariñoso/a** caring **débil** weak **delgado/a** slim **deportista** sporty **divertido/a** fun **feo/a** ugly **fuerte** strong **generoso/a** generous **gordo/a** fat **guapo/a** good-looking **hablador(a)** talkative **inteligente** clever **joven** young **perezoso/a** lazy **ruidoso/a** noisy **serio/a** serious **simpático/a** nice/friendly **terco/a** stubborn **tonto/a** silly **trabajador(a)** hard-working **tranquilo/a** relaxed **valiente** brave **viejo/a** old	**que** as	**él/ella** he/she **mi abuelo/a** my grandfather/ grandmother **mi amiga Ana** my friend Ana **mi amigo Paco** my friend Paco **mi mejor amigo/a** my best friend **mi gato** my cat **mi hijo/a** my son/daughter **mi perro** my dog **mi tortuga** my tortoise **mi primo/a** my (m/f) cousin **mi novio/a** my boyfriend/girlfriend **mis hermanas** my sisters **mis hermanos** my brothers/siblings **mis padres** my parents **mis tíos** my uncles/my uncle and aunt **yo** I
Mis abuelos my grandparents **Mis hermanas** my sisters **Mis hermanos** my brothers/siblings **Mis padres** my parents **Mis tíos** my uncles/my uncle and aunt	**son** are	**menos** less −		**como** as	
		tan as =			

ADD AN 'S' AT THE END OF YOUR ADJECTIVES FOR PLURALS (WHEN DESCRIBING MORE THAN ONE PERSON) e.g. Mis abuelos son más TRANQUILOS que mis padres.

Challenge Tasks	
1	Use the vocabulary from **GRID 1** to create a careers poster featuring several people descrbing what job they do and why they like it.
2	Record an mp3 or a video of 'vox pops' of people talking about the job they do and the positives and negatives. You can get your friends to act out the parts, or put on a different voice for each job yourself!
3	Imagine you are an employer writing a review of your employees' performance. Use the comparatives in **GRID 4** to compare them.
4	Write a text about your dream job in the future, starting "En el futuro me gustaría ser ____" porque...
5	List ten jobs that would benefit from having fluent Spanish or another modern language.