Knowledge Organiser

Year 10

Cycle One

Cranbrook Education Campus

Grow • Thrive • Achieve

Personal details

Name:	
Tutor Group:	Tutor:
Head of Year:	House Group:

Key log in information

My school email:	@cranbrook.education
My school password:	
Classcharts code:	

Sparx	sparxmaths.uk sparxscience.com
Username:	
Password	

Educake	educake.co.uk
Username:	
Password	

Bedrock - literacy	app.bedrock.learning.org
Username:	
Password	

MFL languagenut	languagenut.com
Username:	
Password	

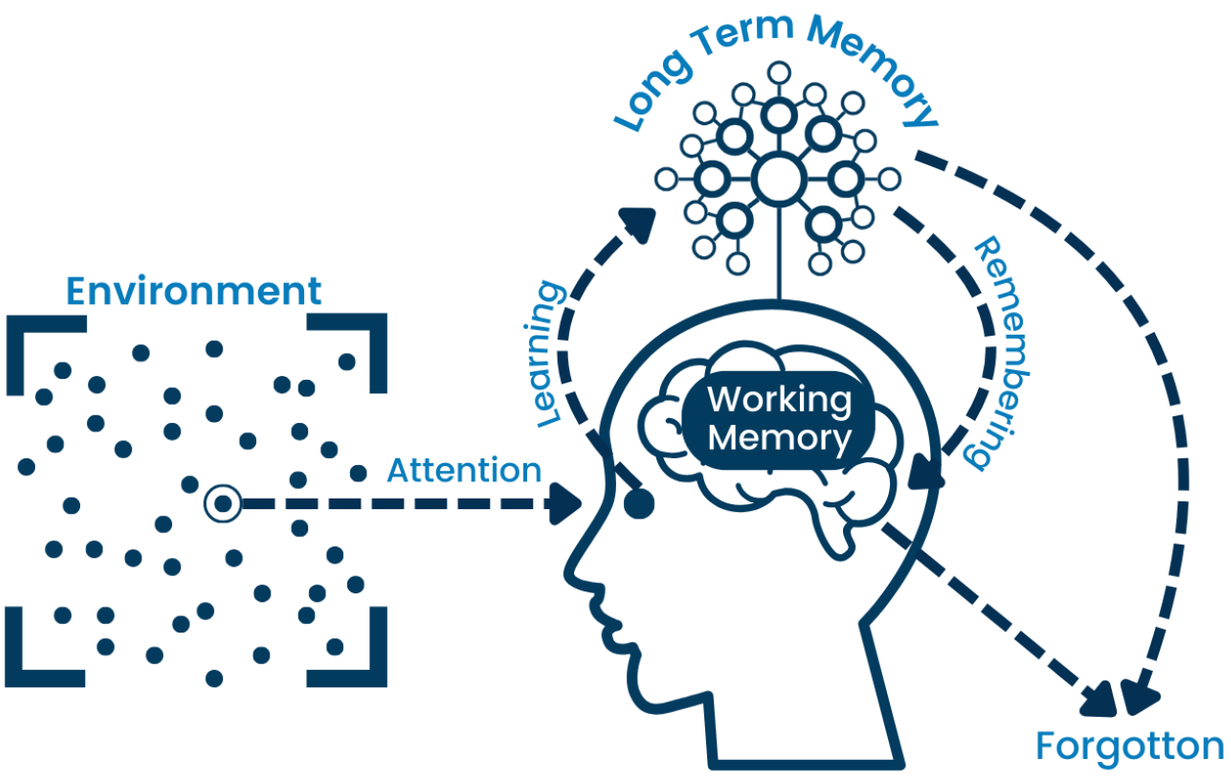
How do we learn?

In your lessons at CEC, teachers plan every minute to ensure the **teaching habits** and strategies they use create a productive learning **environment** and focus your **attention** on the most important content. The information you receive in class is held and dealt with by your **Working Memory** (sometimes called your **short term memory**). Your working memory capacity is limited, meaning you can only deal with a few pieces of new information at a time before you get overloaded - this is called your **Cognitive Load.**

Once in your working memory, new information can be dealt with and transferred to your **Long Term Memory** - this is what learning actually is. Once in your long term memory, the information is organised into schema - you organise new memories and link them to your previous experiences. The information in these **schema** can then be recalled to help you understand new information and importantly, this does not use up the limited slots in your working memory. If information is not effectively **learned** or **encoded** from your working to your long term memory, it will be forgotten.

Retrieval practice will help to make sure your schema are well developed and that you are able to link all the knowledge you will need for your lessons. Retrieval practice is exactly what the name suggests - practising retrieval, and then applying, all of that information stored in your long term memory. Again, if you don't regularly practise remembering this information, it can become **forgotten**.

The model below summarises this process showing how new information moves from your environment (what is in happening in your classroom), eventually forming new and valuable memories.



Your Knowledge Organiser

This booklet contains **knowledge organisers** (or **KOs**) for all your subjects. Each knowledge organiser has the key facts and most powerful information that needs to be **memorised** to help you master your subjects and be successful in lessons. Your teachers have carefully selected the information included to ensure you construct the most effective schema, meaning you can recall the information you need in class to master your subjects.

Each week as part of your independent study, you'll be asked to use your knowledge organiser to review this key content, ready for it to be used in class.

How can I use my Knowledge Organiser?

Your knowledge organiser is a great resource for use at any time at home or in school. Being able to **recall** the information it contains from your long term memory will help you have a really **high success rate** in lessons. One of the most effective ways of forming strong long term memories is by quizzing yourself. In fact, research shows that pupils remember 50% more when they test themselves after learning something new. Simply reading through your knowledge organiser is helpful, but there are also far more effective ways to memorise the important content.

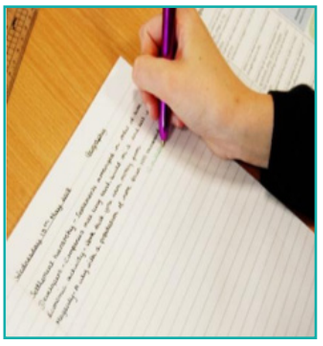
How can I self-quiz?

» **Cover-Write-Check:** Your teacher may direct you to read a specific section or week of your KO. Once you've read the information, **cover** it up and **write** out as much as you can from memory. Next, **check** the KO to see if you're right, then **correct** any mistakes in your purple pen. Repeat this process two more times - even if you got 100% correct.

Cover

Write

Check & Correct

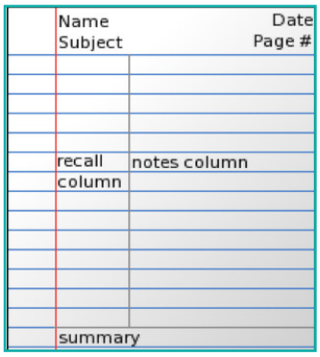


» **Self-quizzing questions:** Use the content in your KO to write a series of questions (vary the command words you use - *state, describe, explain, compare* and so on) and then quiz yourself to ensure you can answer them. Save the questions and use them for some spaced practice, or quiz a friend with them.

» **Create flashcards:** These could be double-sided with a question on one side and the answer on the other. Alternatively, try a keyword on one side and a definition or diagram on the reverse. These can then be used for self-quizzing. The best way to use flashcards is called the Leitner System - find out more about it here: **tinyurl.com/34e5p6f6**

» **Draw a mind-map:** jot down everything that you remember from the KO and make links between the ideas. Check for accuracy and repeat.

- **Make up mnemonics:** (eg. MRS GREN) to help you remember key facts. Write these out from memory.
- **Make Cornell notes:** This system of note taking makes revision and retrieval practice really easy due to the layout of the notes. Set up a page with the four sections shown in the diagram:
  - **Subject** - write the title of your topic;
  - **Recall** - this could be questions or keywords;
  - **Notes** - write descriptions, explanations and examples from the content you studies here; and
  - **Summary** - in one sentence, give an overview of everything in the notes.



Once your notes page is complete, you could cover the notes and recall section and see how much of the content you can write down - then check and correct. Alternatively, cover up the notes section and try to answer the questions you wrote in the recall section. Find out more about how to prepare and use Cornell notes here **tinyurl.com/5xyt5ryc.**

What are the independent study expectations?

During your independent learning, you may be asked to show you've used your Knowledge Organiser in various ways. For some subjects, such as Science, Geography and History, you may be asked to review your KO and then complete an online quiz. In other subjects, such as Art and Drama, you may be asked to complete Cover-write-check or Cornell notes. No matter how you are asked to use it, the aim is the same - to build strong long term memories that you then recall and use in class.

When completing any written work from your KO, you should complete it in your green **Knowledge Organiser workbook.** You must:

- Check your schedule to see which subject you should be working on each day
- Write the date and subject heading for each piece of work
- Complete one full page for each subject on the schedule in your workbook
- Make sure you always use your knowledge organiser after you have finished to mark, evaluate and correct your own work in your purple pen.

For online Sparx tasks, assignments must be completed to 100% in both Maths and Science.

Independent study schedule

The schedule below shows you what independent study you should be completing each day. This includes your online work such as Sparx Maths and Science; subjects such as History and Geography where you will use your knowledge organiser and educake; and subjects where you should use some of the self-quizzing techniques detailed above in your **Knowledge Organiser workbook.**

In years 10 and 11, you will notice an increased focus on preparing you for your GCSE exams. This means teachers will start to use exam materials and other independent study tasks in addition to your KO and online platforms. You will also be provided with a **Countdown booklet** in the run up to any PPEs or exams to really focus your revision.

The schedule also shows how long you should spend on each task, the day you are allocated time to complete the task and also the day the task needs to be handed in. Work in your KO workbook will be checked in class by your subject teachers. If you have not completed any of your independent study tasks, you will be required to attend a 2 hour non-completion detention after school on the following Monday to catch up and get ahead with your homework.

<table>
<tr><th colspan="7">Year 9, 10 and 11</th></tr>
<tr><th></th><th colspan="2">15 min</th><th>15 min</th><th>15 min</th><th>Specialist support</th><th>Non-completion detention</th></tr>
<tr><td>Monday</td><td colspan="4">Maths</td><td>MFL Languagenut & Comprehension</td><td rowspan="6">Monday afterschool 3 - 5 pm

You will not need to attend the detention if all homework is completed by 3 pm on Monday</td></tr>
<tr><td>Tuesday</td><td colspan="4">English</td><td>Maths</td></tr>
<tr><td>Wednesday</td><td colspan="4">Science</td><td>English</td></tr>
<tr><td>Thursday</td><td colspan="2">Geography/History</td><td>Options subject: Drama/Art/Music/ Sports Science/ Computer Science</td><td></td><td>Science</td></tr>
<tr><td>Friday</td><td colspan="2">MFL languagenut</td><td colspan="2">Comprehension</td><td>Geography/ History and Option subject</td></tr>
</table>

Who can help with my independent study?

There are lots of people who can help with your independent study. **Independent Study club** runs everyday in the library from **3:00 - 4:00.** There is a quiet space to work, computers to use for online tasks and members of staff available to help. It's a great place to complete all your tasks for the day, leaving your evening free to enjoy your other interests.

If you need help with a particular task, your **subject teachers** will be available at break and lunchtime to help with any issues - just make sure **you** see them before the hand-in day and they will be happy to help.

By using the schedule above, we hope you can plan to complete your independent study as well as still enjoying all your other interests, family and friends each day. If you do have any issues, please tell your **tutor or head of year** straight away.

Other useful information

How should I present my work?

At CEC, we are **PROUD** our work and this shows in the presentation of work in books and booklets.

- Book work and booklet tasks are completed in **blue** or **black** pen only.
- Work in books is set out in the same way using **DUMTUMS** (Date, Underline, Miss a line, Title or Learning intention, Underline, Miss a line, Start).
- Work is underlined with a ruler.
- All tasks are completed neatly and to the highest of standard.
- There is no doodling, tearing or scribbling in books or booklets – any defacing will be sanctioned.
- Any mistakes are neatly crossed through with a single line.
- There are no unintended empty spaces left in books.
- Response to feedback and self assessment is completed in a **purple** pen.
- Any incomplete tasks should have a written reason (such as "absent, on school trip").
- The full date should be written at the top left hand side of the page.
- In Mathematics and Science the date should be written in figures.
- Each calculation must be clearly numbered with a number or letter to distinguish it from working figures.

What are Talk Tactics?

Oracy - the ability to express yourself fluently in speech - is an important skill for all your subjects. Use the Talk Tactics below in class discussions and to help you formulate your verbal responses to questions.

Instigate:
Present an idea or open up a new line of inquiry

" I would like to start by saying _
" I think ____
" We haven't yet talked about __

Probe:
Dig deeper, ask for evidence or justification of ideas

" Why do you think ___?
" What evidence do you have to support X idea?
" Could you provide an example?

Challenge:
Disagree or present an alternative argument

" I disagree because ____
" To challenge you X, I think ____
" I understand your point of view, but have you thought about _____?

Clarify:
Asking questions to make things clearer and check your understanding

" So are you saying ____?
" Does that mean ____?
" Can you clarify what you mean by ____?

Summarise:
Identify and recap the main ideas

" So far we have talked about ___
" The main points raised today were_____
" Our discussion focused on _____

Build:
Develop, add to or elaborate on an idea

" Building on X's idea ____
" I agree and would like to add ____
" X's idea made me think _____

Stop

'They're not bullying you because of you, they're bullying you because of how they are'
Jessie J

Bullying affects lots of people and can happen anywhere: at school, travelling to and from school, in sporting teams, in friendship or family groups.

Bullying can take many forms including:

- emotional abuse
- social bullying
- social media
- threatening behaviour
- name calling
- cyberbullying
- sexting

Bullying includes REPEATEDLY:

- people calling you names
- making things up to get you into trouble
- hitting, pinching, biting, pushing and shoving
- taking things away from you
- damaging your belongings
- stealing your money
- taking your friends away from you or leaving you out
- posting insulting messages or rumours, in person online
- threats and intimidation
- making silent or abusive phone calls
- sending you offensive texts or messages

Speak

'Blowing out someone else's candles doesn't make yours shine any brighter'
Drake

Speak to someone.

No one has a magic wand, but we always do our best and we do really care.

Telling someone shares the problem. It helps you feel supported.

It is really important to tell someone, particularly if the bullying has been going on for a while or the strategies you've tried haven't worked.

You're **not** alone

Don't be afraid to tell an adult. **Telling isn't snitching!**

Support

'You always have to remember that bullies want to bring you down because u have something that they admire'
Zak Efron

What we do at Cranbrook to deal with bullying:

Whatever your worry, it's better out than in

- **Mentoring** is having a named person you can go to for support at school. Tutor/HOY/Refocus/Other
- **Restorative justice** brings all children involved together so everyone affected plays a part in repairing the harm and finding a positive way forward.

Any form of bullying **will not be accepted at Cranbrook.**

ChildLine
0800 1111

NSPCC
HELPLINE
0808 800 5000
help@nspcc.org.uk

YOUNGMiNDS
fighting for young people's mental health

Year 10 - Art- Cycle 3	Week 1	Week 3
Key vocabulary/content/ideas **Key Vocabulary:** Develop, refine, record, present, analyse, explore, exhibit, exhibition, evaluate **Content:** Understanding how your work, and areas of study relate to the four Assessment Objectives (AO's). You will need to evidence each AO throughout your sketchbook. Some AO's are evidenced by the same piece of work. **Ideas:** What are the AO's? What is a realised intention? What is a final piece? What is an exhibition?	**AO1: Develop ideas through investigations, demonstrating critical understanding of sources.** **Understand this:** An exceptional ability to effectively develop ideas through creative and purposeful investigations. An exceptional ability to engage with and demonstrate critical understanding of sources. **Apply this:** Have you thought, really thought about your theme? Made a mind map and recorded your ideas? Do you have photographs that you have taken, images you have found, visited galleries? Have evidence of you looking at other artist's work that have inspired you? This assessment objective relates to how much you have really considered what the brief means to you. Think of at least 10 ideas and discuss them with family and friends to get their feedback.	**A02: Refine work by exploring ideas, selecting and experimenting witppropriate media, materials, techniques and processes.** **Understand this:** An exceptional ability to thoughtfully refine ideas with discrimination. An exceptional ability to effectively select and purposefully experiment with appropriate media, materials, techniques and processes. **Apply this**: Have you…. Developed on your initial ideas. I like to think of an art portfolio as a good book. The book and the visuals develop and the characters become more refined. Can we clearly see that you are developing on your previous work. Have you changed what media you have used to get the best result which suits the theme? how many different types of media have you used?
Week 5	**Week 7**	**Week 9**
AO3: Record ideas, observations and insights relevant to intentions as work progresses. **Understand this:** An exceptional ability to skilfully and rigorously record ideas, observations and insights through drawing and annotation, and any other appropriate means relevant to intentions, as work progresses. **Apply this:** Have you enjoyed making a lot of artwork which shows a really good understanding of different techniques. It's about technical precision and making sure the work looks like it should. Points for this AO can be achieved by making refined paintings, drawings, photography or other experimentation where you have some finished final versions of your ideas. Make sure there is a connection to an artists work.	**AO4: Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.** **Understand this:** A highly developed ability to competently present an imaginative, personal, informed and meaningful response when realizing intentions. A highly developed ability to demonstrate critical understanding and where appropriate, make perceptive and discriminating connections between visual, written, oral or other elements.	**AO4 continued:** **Apply this:** Does it look like your work? This objective is all about presenting your personal visual journey and how you have responded to the theme. To achieve high marks your final pieces of art should link with all your ideas. When your teacher discuses your project with you, you should be able show clear connections with the initial ideas, artist research, refinement and development of ideas into the final pieces. This is where you showcase your passion.

Year 10 Combined Science - Cycle 1

Key vocabulary

- **Anion:** negatively charged ion, one that has gained electron/s.
- **Asexual:** producing new organisms with one parent only. These organisms are genetically identical to their parent
- **Cation:** positively charged ion, one that has lost electron/s.
- **Diploid:** a cell or nucleus that has 2 sets of chromosomes
- **Malleable:** able to be hammered or rolled into shape.
- **Meiosis:** a form of cell division where one parent produces 4 haploid cells
- **Neurone:** Cells of the nervous system.

Week 1 - Mitosis

- **Mitosis** is a form of cell division the produces two **genetically identical,** diploid daughter cells.
- The cells are **diploid** and the process is **asexual**.
- Produces body cells for growth and repair
- Interphase: **DNA** is replicated, happens first.
- Phases of Mitosis:
  - **prophase:** nucleus starts to break down, spindle fibres appear.
  - **metaphase:** chromosomes line up at the centre of cell.
  - **anaphase:** spindle fibres contract and chromosomes separate.
  - **telophase:** a membrane forms around each set of chromosomes to form nuclei.
- Finally, **cytokinesis** occurs - cell surface membrane forms (cell wall forms in plant cells).

Week 2 - Stem cells and the nervous system

- **Stem cells** are cells that divide repeatedly and can then differentiate. They can be:
  - **embryonic:** early embryo cells that can produce any cell type
  - **adult:** can only produce one type of cell, allow tissues to grow and replace damaged cells
- **Reflex arc:** a neurone pathway consisting of a **sensory neurone** passing **impulses** to a **motor neurone** often via a **relay neurone**.
- **Relay neurone:** a short type of neurone found in the spinal cord and brain.
- **Sensory neurone:** a neurone that sends impulses from receptor cells to the central nervous system.
- **Motor neurone:** a neurone that sends impulses to **effectors** (muscles or glands).

Week 3 - Meiosis and DNA

- **Chromosomes** are found in the **nucleus** of all cells.
- Human somatic cells contain **23 pairs** (46 individual) chromosomes.
- They are made out of tightly coiled **DNA** and are divided into sections called genes.
- **Genes** code for the **production of proteins** in the body. An entire set of genes is called a **genome**.
- DNA is made up of 4 individual **bases** - **A, T, C** and **G**. The order of these bases determines the protein that is produced.
- **Meiosis:** a form of cell division in which produces gametes (sex cells - sperm and egg).
- **One parent** cell produces Four **non-identical haploid** daughter cells. These cells contain **23 individual** chromosomes.
- Chromosomes in daughter cells contain different versions of same gene, resulting in **genetic variation** of offspring.

Week 4 - Ionic bonding

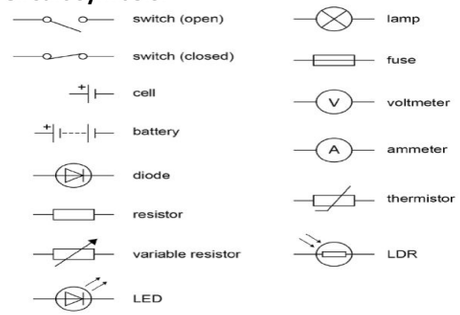
- The **transfer** of electrons to gain a full outer shell forming **oppositely charged ions** that attract due to **electrostatic forces of attraction**
- Occurs between a **metal** and a **nonmetal**
- Forms substances with have **high melting** and **boiling points.**
- When ionic substances are molten or dissolved in solution they conduct electricity as the free electrons can carry a current.
- For a substance to conduct electricity:
  - It must contain **charged particles**;
  - These particles must be free to move.
- Ionic substances will not conduct electricity in their solid form because their ions are not free to carry the current.
- Transfer or sharing of electrons can be shown with a **dot and cross diagram**.
- Strong ionic bonds join many atoms together to form regular, repeating **lattice structures**.

Week 5 - Covalent bonding

- **Covalent bonding** takes place to form atoms with a full outer shell.
- It occurs between a **nonmetal** and a **nonmetal** when a pair of electrons is **shared** between two atoms.
- The structure and bonding of substances results in different properties such as melting point and boiling point.
- Covalent substances typically have:
  - **low melting points;**
  - **low boiling points;**
  - **poor conductivity of electricity.**
- Examples of simple covalent structures include: hydrogen, water, methane, oxygen and carbon dioxide.
- **Monomers** are small, simple molecules that can be joined together in a chain to form **polymers**.
- **Carbon atoms** can form up to 4 **covalent bonds**, forming long polymer chains.

Key vocabulary

- **Current, I:** the rate of flow of electrical charge, measured in Amperes (A).
- **Potential difference (pd), V:** amount of energy transferred per unit of charge, measured in Volts (V).
- **Resistance, R:** The opposition to the flow of electric charge, measured in Ohms (Ω).
- **Circuit symbols:**



Week 6 - Metallic bonding and Allotropes

- Atoms in metal pack closely together to form a **giant lattice structure**.
- **Outer electrons** are lost from metal atoms, forming a giant lattice of **positive ions** surrounded by **delocalised electrons**.
- **Strong electrostatic attraction** between the ions and electrons, resulting in metals having high melting and boiling points.
- Carbon atoms can form 4 covalent bonds and join in different structural ways. These are known as **Allotropes** of carbon. Examples are:
- **Fullerenes:** C bonded to 3 other C atoms. Often form nanotubes or "bucky balls". Weak intermolecular forces mean low melting points.
- **Graphene:** Thin layer of C atoms. Very light but very strong due to intramolecular forces.
- **Graphite and diamond:** giant mol. structure, very strong intramolecular forces, high melting point.

Week 7 - Circuit components

- Rubbing two **insulating** materials together will build up of a **static electric charge** as negatively charged electrons are transferred.
- **Components** in an electric circuit can be represented using **circuit symbols**.
- Electrons carry the electric charge in an **electric current**. For a current to flow, the circuit must be complete.
- Current is always **conserved** in a circuit – the current leaving the positive terminal and arriving at the negative terminal is the same.
- **Series circuits:** Current is the same through all components. Pd across the individual components in the circuit adds up to the total pd across the power supply.
- **Parallel circuits:** Current through the main circuit is divided across the separate branches. Pd across each branch isequal to the pd across the supply

Week 8 - Current electricity

- **Potential difference (pd)** is the difference in energy carried by electrons before and after they flow through a component.
- **Resistance** occurs when charges collide with the particles which make up the wire. Electrical resistance causes wires to become hot.
- **Current/Potential difference (I/V) graphs** show the characteristic relationship between current and pd values for different components:
  - **Fixed resistor**: ***I*** is directly proportional to ***V*** - straight line **through** the origin.
  - **Filament lamp:** resistance increases as the bulb gets **hotter**.
  - **Diode:** Very low **resistance** if current flows in one direction, very high resistance if current flows in opposite direction.

Week 9 - Investigating resistance

- Connect up a circuit of a power supply, an ammeter and a fixed resistor with a voltmeter connected in parallel across the resistor.
- Connect a voltmeter across the resistor.
- Switch on the circuit and record the readings of **current** and **potential difference.**
- Repeat for a range of **pd settings** between 1 V and 6 V.
- Replace the resistor with 2 filament lamps and repeat steps 1-4.
- **Calculate** the **resistance** of the resistor and lamps using:

$$\text{Resistance (}\Omega\text{)} = \frac{\text{potential difference (V)}}{\text{current (A)}}$$

- **Ohm's Law:** The current through a resistor is **directly proportional** to the pd across the resistor at a constant temperature.

Week 10 - Power and electrical safety

- Energy, *E*, transferred by a component can be calculated as:

Energy (J) = current (A) x pd (V) x time (s)

- The higher the **power** of an appliance, the more quickly it can transfer energy.
- Power, P, is calculated in the following ways:

$$\text{Power (W)} = \frac{\text{Energy transferred (J)}}{\text{time (s)}}$$

Power (W) = current (A) x pd (V)

Power (W) = current^2 (A) x Resistance (Ω)

- Mains electricity in the UK is **an alternating current** with a frequency of **50 Hz** and a peak voltage of **230 V**.
- Electrical devices use **fuses**, **circuit breakers** and the **earth wire** as safety features.
  - Fuses **melt/blow** when the current through them is too high.

Year 10 - Computing - Cycle 1	Week 1 - Binary and Data Units	Week 2 - Denary and Binary Numbers
Key vocabulary/content/ideas • **Operations:** The various actions and processes that a computer can perform, such as arithmetic operations (e.g., addition, subtraction), logical operations (e.g., AND, OR), and data manipulation. The most significant bits can be used to control these operations and store results. • **Data Representation:** The process of converting information into a format suitable for storage or transmission in a computer. The most significant bits are crucial in determining the structure and interpretation of data, including the type and encoding.	• **Transistor:** The electronic switches within a computer that enable it to carry out arithmetic and logical operations • **Machine Code:** A system of 1s and 0s used to represent the on / off states of each transistor used within an operation. • **Bit:** The term used to identify a single 1 or 0. • **Byte:** A unit of data, comprised of 8 Bits e.g. 11001010 • **Nibble:** A unit of data; comprised of 4 bits (half a byte) • **Kilobyte:** A unit of data; approximately 1000 bytes (1024 bytes to be exact). • Megabyte: A unit of data; approximately 1000 kilobytes (1024 kilobytes to be exact). • **Gigabyte:** 1024 megabytes	• **Denary:** Denary is the base-10 number system, which is commonly used in everyday life. In the denary system, numbers are represented using ten digits: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. • **Binary:** The base-2 number system used in computing. In binary, numbers are represented using only two digits, 0 and 1. It is the fundamental language of computers and is used to store and process data. • **Place Value:** The columns used when representing a binary or denary number.

128	64	32	16	8	4	2	1
0	1	1	0	0	1	0	0

Week 3 - Signed and Unsigned Integers	Week 4 - Binary Additions	Week 5 - Overflow and Hexadecimal
• **Most Significant Bit (MSB):** The most significant bit (MSB) is the leftmost or highest-order bit in a binary representation. • **Signed Integer:** A signed integer is a data type used in programming and computer science that can represent both positive and negative whole numbers. It includes a most significant bit (MSB) that indicates the sign, with 0 typically representing positive and 1 representing negative. • **Unsigned Integer:** An unsigned integer is a data type in programming that represents only non-negative whole numbers. It doesn't include a sign bit, making the most significant bit (MSB) represent a place value in the actual number itself.	• **Two's Complement:** Method for representing signed integers in binary form. In this representation, the most significant bit (MSB) is used to indicate the sign of the number, with 0 for positive and 1 for negative. The remaining bits represent the magnitude of the integer. • **Binary Addition:** Arithmetic operation in which two binary numbers are combined using a set of rules. The most significant bits of the two numbers are added first. • **Binary Shifts:** Operations in which the bits of a binary number are moved left or right in order to carry out divisions or multiplications. Left shifts increase the value, and right shifts decrease the value.	• **Overflow Error:** When a binary arithmetic operation generates a result that cannot be represented using the available number of bits. The most significant bit (MSB) plays a significant role in detecting and understanding overflow. • **Hexadecimal:** Hexadecimal is a base-16 numbering system that uses the digits 0-9 and the letters A-F to represent values. Each digit in a hexadecimal number corresponds to a 4-bit binary nibble. • **The Rules of Hexadecimal:** The most significant rule is that each digit represents a 4-bit binary value. Additionally 0-9 are the same; however A stands for 10, B for 11, C for 12, D for 13, E for 14, and F for 15.

Key vocabulary/content/ideas	Week 6 - Character Sets	Week 7 - Image Representation
• **Data Representation:** The methods and formats used to express information in a way that a computer or electronic system can understand. It involves encoding data using various schemes, such as binary or hexadecimal. • **Digital:** The representation of data in discrete, distinct values, often using binary digits (0 and 1). Digital data is precise, can be easily processed by computers, and is less susceptible to degradation during transmission. • **Analogue:** Analogue refers to the representation of data using continuous, varying signals, typically in the form of electrical voltages.	• **String:** Data containing characters or symbols. Each character in a string is represented using binary encoding, and the most significant bit of each character can affect the character's value and interpretation. • **Character Set:** A character set is a defined collection of characters, symbols, and their binary representations used for communication and data storage. • **Standard ASCII:** A widely used character encoding standard that represents text and control characters using 8-bit binary code. The most significant bit in ASCII is used for parity checking in some applications (this means checking data is intact).	• **Bitmap:** Digital image or graphic that is composed of a grid of individual pixels, where each pixel stores information about color. • **Pixel:** The smallest unit of a digital image or display. It is a tiny square or dot that contains information about color and brightness. • **Colour Depth:** (also known as bit depth) refers to the number of bits used to represent the color of each pixel in a bitmap image. A higher colour depth allows for a greater range of colors. • **Resolution:** It is typically expressed as the number of pixels in the width and height of an image.
Week 8 - Sound Capture	**Week 9 - Data Compression**	**Week 10 - Stored Program Concept**
• **Sound Sample:** A small, discrete segment of an audio recording. It represents the amplitude (loudness) of sound at a particular point in time and is usually stored as a 16 bit binary number. • **Bit Depth:** The number of bits used to represent the amplitude of a sound sample. A higher bit depth allows for more precise and detailed representation of sound, resulting in higher audio quality. • **Sample Rate:** The number of sound samples captured or played per second in an audio recording. It is typically measured in hertz (Hz). A higher sample rate provides greater fidelity and captures more audio detail.	• **Compression:** A process of reducing the size of digital files, such as images, audio, or video, to save storage space or speed up transmission. It involves encoding the data in a more efficient way. • **Lossy Compression:** Reduces file size by removing some data, often less essential details, from the original. This reduction in data can lead to a loss in quality, particularly noticeable in images and audio. Once compressed, original data is lost for good. • **Lossless Compression:** Reduces file size without losing any data or quality. It preserves all the original information, allowing for perfect reconstruction of the uncompressed data. This is done by encoding the data.	• **Single-Purpose Computer:** Also known as a dedicated or specialised computer, is designed for a specific, limited set of tasks or functions. It is optimized for a particular application, such as controlling industrial machinery or scientific instruments. • **General-Purpose Computer:** A device capable of performing a wide range of tasks and running various applications. Examples include personal computers and servers, which can be adapted to different needs. • **Stored Program Concept:** A model where both data and instructions are stored in the memory of a general purpose computer. It allows a computer to process instructions in a program, enabling flexibility and programmability in general-purpose computers.

Year 10 – Drama - Cycle 1	Week 1 – Vocal skills	Week 2 – Physical skills
Key vocabulary/content/ideas **Component 1** • **Assignment brief -** each component has a brief set by the exam board with an accompanying theme. This sets our the work and evidence required to submit. • **Learning aim** – the focus of your work. There will be multiple learning aims for each assignment • Creative intentions and purpose • **Themes –** You will look at the underlying themes of each play you study. You will be required to reflect on where you see the themes in each play. • **Roles –** the types of activities/jobs they do. • **Responsibilities –** what they have to complete**/look after.** • **Skills –** interpersonal and professional skills linked to the job role.	**Breath Control** - the ability to control use of breath in speaking. **Projection** - the art of ensuring your voice is heard by an audience. This does not mean simply speaking louder. **Clarity and articulation** - the clear and precise pronunciation on of words, opening each vowel and touching each consonant. **Pitch**: the auditory property of a note that is conditioned by its frequency relative to other notes: *high pitch ; low pitch.* **Tone** - links to type of voice – e.g. nasally for geek, open and strong for upper class. **Use of Pause** - length of pause to create a particular effect or atmosphere. **Pace** - speed of speaking. **Remembering Lines** – The sooner you do the sooner you can focus on your performance.	**Movement memory** – the ability to repeatedly recreate exact movements from a piece. **Spatial awareness** - helps an actor to move efficiently and effectively on stage knowing the whereabouts of other actors, sets and props are. **Focus and control** – the ability to fully concentrate on the drama and not be distracted in any way (Focus can also refer to the use of eye contact). **Pace, Energy dynamics** - these are the ways we move. Speed, weight, distance, direction. The physical motion. **Gesture** – small movements by the actor that tends to involve the hands, feet, arms and legs. **Facial Expression** – these are the ways an actor uses their face to convey emotions, develop the story and communicate feelings and thoughts. **Body language** – The ways we use our bodies to show emotion.
Week 3 – Interpretative skills	**Week 4 – Page to stage process**	**Week 5 – Pilot Theatre**
• **Presentation of the drama –**performing the piece/ character in such a way that it communicates the intention • **Awareness of the performance** space and audience – consciously using in a way to add to the hammer the point home • **Interaction with and response to other actors – a**s with above • **Semiotics –** The actor as a sign or symbol. The subtle ways we communicate with the audience (lighting, costume, proxemics, eye contact) • **Stage presence –** how you own the stage area and make the audience want to watch you • **Energy and commitment –** the amount of effort you put in • **Intention –** What you want the audience to understand about the performance.	Each theatre company will have a different process of creating a play. Generally speaking though, they will all include the following: **Initial read through** – first read of the script. **Blocking** – working out who moves where. **Rehearsals** – rehearsing scenes using the script. **Workshops** – exploring off text improvisation and character development. **Tech rehearsal** – production elements are plotted on stage and with the tech team. **Dress rehearsal** – final run through before opening night with tech and costumes. **Opening night** – first performance to an audience.	**Artistic Director & Joint Chief Executive - Esther Richardson** • Pilot Theatre are an international touring theatre company based in York. • We work outside of traditional theatre buildings, where our projects pursue a relationship with our audience that is often playful, interactive and participatory. • Across all our projects we seek to create a cultural space where young adults can encounter, express, and interrogate big ideas that are relevant to our lives right now. • Pilot use digital media as much as possible and are a leading practitioner in this field. They create theatre for young audiences in a digital age.

Year 10 – Drama - Cycle 1	Week 6 – Noughts and Crosses	Week 7 – Frantic Assembly

Key vocabulary/content/ideas
 	
Component 2
• **Skills development –** you will focus on your physical, vocal and interpretative skills in order to develop your performance ability.
• **Skills workshops** – these will cover aspects of performance skills such as warming up, safe practice, risk assessments, vocal training, physical training, use of space and interaction with others.
• **Stylistic qualities:**
  • treatment of theme/issue
  • production elements
  • form/structure/narrative
  • response to stimulus
  • style/genre
  • contextual influences
  • Collaboration/influence of other practitioners
	Key information
	Title – Noughts and Crosses
	Stimulus – Novel
	Purpose - To raise awareness of racism
	Target audience – teenagers and young adults
	Themes - Racism, division, tragedy, privilege, love, friendship, innocence, growing up, family.
	
	Key people
	Original author – Malorie Blackman
	Playwright – Sabrina Mahfouz
	Theatre Company – Pilot Theatre
	Theatre – Northcott Theatre Exeter
	Staging – Proscenium Arch
	Director –Esther Richardson
	Set designer –Simon Kenny
		Artistic Director and co-founder - Scott Graham.
		
		• Frantic Assembly has developed into one of the UK's most successful and best loved theatre companies.
		• Our ambition is that we continue to learn and remain committed to making brave and bold theatre. At times it is physically dynamic and brutal. At others it's proudly tender and fragile.
		• It is about the ethos of collaboration, of empowerment, of that constant desire to improve. It is about telling stories in a voice we don't always hear and about finding talent in places we don't always look.

Week 8 – Curious Incident	**Week 9 – Workshops (monologues)**	**Week 10 – Rehearsals (monologues)**
Key information **Title –** Curious Incident of the Dog in the Night-time **Stimulus** – Novel **Purpose -** To raise awareness of disabilities **Target audience –** Young people **Themes –** family, honesty, trust, braving the unknown, prejudice, coping and loss, logic, independence, **Key people** **Original author** – Mark Haddon **Playwright –** Simon Stephens **Theatre Company –** Frantic Assembly **Theatre** – Digital performance **Staging –** In the round **Director –** Marianne Elliott **Set designer –** Bunnie Christie	When rehearsing a monologue, you will need to take part in workshops to help develop your piece. These workshops will include opportunities for **character development**. • **Off text improvisation** - exploring your character away from the text itself. Hypothetical situations. • **Magic if-** questioning how your character might react to potential scenarios and reactions of your character e.g. what if I won the lottery? • **Subtext** – hidden meaning, what is implied and not said. • **Given circumstance** – context of the scene/play • **Circles of attention** – awareness of who is around you during a performance. • **Tempo-rhythm** – speed and intensity of a response.	• **Skills audit** – at the start of the learning aim, you will be asked to complete a skills audit based on your opinion on your strengths and weaknesses. • **Target setting** – You will choose 3 skills you feel you need to improve on and review these during the performance process with milestones • **Milestone review** - at specific points during the rehearsal process you will review your performance progress and draw on what skills you have improved on and still need to work on. • **Refining** – going over the same piece again and again and making small changes to ensure you are performing to the highest quality.

Year 10 - English- Cycle 1	Week 1 - Context and Genre	Week 2 - Gothic Setting and Tragic Heroes
Key vocabulary/content/ideas **Pathetic Fallacy** - human attributes are given to the natural world **Eponymous** - Giving their name to something (e.g. Macbeth is the eponymous character of the play of the same name). **Hamartia** - a fatal flaw **Tragedy** - explores the human condition with the main character's downfall caused by hamartia **Valour** - great courage in the face of danger **Soliloquy** - a character on their own expressing their thoughts aloud **Patriarchy** - a society ruled by men **Malevolent** - a desire to cause harm to others **Emasculate** - to deprive a man of his male role/identity **Hubris**: Excessive pride **Equivocate**: use ambiguous language so as to conceal the truth or avoid committing oneself **Usurp:** take (a position oÿ power or importance) illegally or by force **Abhorrent**: inspiring disgust and loathing **Regicide:** the action oÿ killing a king	**Key ideas/Premise** Reflecting the surge of interest in the classical philosophies and fascination with the human condition of the times, Shakespeare, explores the very essence of human conflicts: ambition, power and free will. **Key Context:** • At the time of Shakespeare, the belief in witches and the supernatural was extremely strong. There is no doubt, therefore, that some of the ideas in the play would have been taken very seriously, such as the witches prophecies, Macbeth being seemingly 'possessed' and his vivid hallucinations. • Divine Right of Kings asserts that monarchs were appointed from God above, and that any attempt to question them was to question God himself. • The Great Chain of Being - a social order of belonging for everything in the universe decided by God	**Key ideas/Premise:** Shakespeare's initial presentation of Macbeth is used to establish him as a conventional tragic hero: he is a noble, well-respected character and the very definition of a Jacobean masculine ideal. **Key Context:** • Tragedy is a **genre** of play in which a hero is brought down by his/her own flaws, usually by ordinary human flaws – flaws like greed, over-ambition, or even an excess of love, honor, or loyalty. In any tragedy, we start with the tragic hero, usually in his noble, respected and in his prime. **Key Quotations:** First Witch "When shall we three meet again/In thunder, lightning, or in rain?" Second Witch "When the hurlyburly's done/When the battle's lost and won." "For brave Macbeth--well he deserves that name--/Disdaining fortune, with his brandish'd steel/Which smoked with bloody execution/Like valour's minion carved out his passage"
Week 3 - Powerful Women and Ambition	**Week 4 - Hamartia, Hubris and Hallucinations**	**Week 5 - Disruption of the Great Chain of Being**
Key Ideas/Premise Transgressing the Jacobean gender norms, Shakespeare presents the audience with a subversion of the ideal woman: subservience is replaced with ambition, maternal nurture with masculine aggression. Thus, the Great Chain of Being is disrupted, hinting at the chaos to come. **Key Context** • The gender roles during the Jacobean era were fairly similar to the Elizabethan ones. Men still assumed a dominant position continuing the **patriarchal** society. • Jacobean women continued to live a life that was sub-ordinate to men. They were supposed to obey what was told to them. The main responsibility of married women was to take care of the household matters and raise children. **Key Quotations** "unsex me here/And fill me from the crown to the toe top-full/Of direst cruelty!" "When you durst do it, then you were a man;"	**Key Ideas/Premise** Influenced by the Renaissance and a renewed interest in classical writers such as Ovid, Shakespeare establishes this play as a tragedy through the use of Macbeth as a tragic hero. His hubristic nature is his harmartia and, ultimately leads to his downfall. **Key Context** • Hubris, or fatal pride, was the downfall of many Greek heroes in ancient myth. In classical mythology, hubris was considered a very dangerous shortcoming; it was an act of arrogance, usually where the hero attempted to assume godlike status. The ancient Greeks considered hubris a fatal flaw that brought tragedy upon heroes… and commonly led to their death. The punishment for hubris was often a shocking reminder of human limitations and mortality. **Key Quotations** "Is this a dagger which I see before me, The handle toward my hand? …" "Stars, hide your fires;/Let not light see my black and deep desires" (M. 1.4)	**Key Ideas/Premise** Drawing on his audience's knowledge and associations of the natural world, Shakespeare skillfully employs animal imagery as a means to symbolise the inner conflict of Macbeth. **Key Context** • In Genesis, the serpent is portrayed as a deceptive creature who promotes as good what God had forbidden and shows particular cunning in its deception. • In the biblical story of the Fall, the serpent is the creature which undermines God and goes against his wishes. The serpent persuades and tempts Eve to eat the forbidden fruit, and thus Eve goes against God.As a result of the temptation, this concept of free will now exists in world. **Key Quotations** O, full of scorpions is my mind, dear wife! 'Look like th' innocent flower, But be the serpent under 't' (Lady Macbeth, I.5)

Key vocabulary	Week 6 - Ghosts, Witches and Prophecies	Week 7 - Betrayal and Exploitation
Zoomorphism: to portray the act of humans or objects with animalistic behavior or features **Serpent**: a symbol of evil power and chaos from the underworld as well as biblical associations of temptation. **Caesura**: A stop or pause in a line, of text. **Mercurial**: subject to sudden and unpredictable change of mind or mood **Protofeminism**: anticipates modern feminist ideas before the concept of feminism was born. **Contemporary**: 1. living or occurring at the same time 2. belonging to or occurring in the present **Blank Verse**: is poetry written with regular metrical but unrhymed lines, almost always in iambic pentameter. **Prose:** written or spoken language in its ordinary form, without metrical structure. **Tyrant:** a cruel and oppressive ruler	**Key Ideas/Premise** At this pivotal point in the play, Shakespeare continues to utilise the superstitions of the Jacobean audience to juxtapose the mental turmoil Macbeth feels after the bloody murders of his king and brother in arms with the superficial confidence he derives from the witches' prophecies. **Key Context** • It is a known fact that King James I was very interested in supernatural, witches and witchcraft. • After he became the King, he brought into effect an Act which made witchcraft an offence. Those who were found guilty of practicing witchcraft were either awarded death or their property was seized. **Key Quotations** "Be bloody, bold, and resolute; laugh to scorn/The power of man, for none of woman born/Shall harm Macbeth." "Be lion-mettled, proud; and take no care/Who chafes, who frets, or where conspirers are:/Macbeth shall never vanquish'd be until Great Birnam wood to high Dunsinane hill/Shall come against him."	**Key Ideas/Premise** Defying contemporary gender stereotypes, Shakespeare offers a paradoxical portrayal of power and gender. On the one hand, the women in the play are strong and powerful, but often associated with the supernatural and manipulation. Furthermore, it could be argued that, in bringing about the downfall of a great man, powerful women are a danger to the natural order of things. **Key Context** • By the end of the play, Lady Macbeth lapses back into the feminine helplessness she had earlier rejected. Her loss of control is most theatrically manifested in her guilt-ridden sleep-walking scene.Madness, curiously, forces her back into the stereotypical femininity that her transgressive yearning for imperial power had repudiated. **Key Quotations** "'Out, damned spot! out, I say!" 'What, will these hands ne'er be clean?'
Week 8 - Betrayal and Exploitation	**Week 9 - Themes**	**Week 10 - Themes**
Key Ideas/Premise In documenting the inevitable downfall of traitorous king slayers, Shakespeare may have been vying for favour from James I, a patron of the arts. However, in the death Of Lady Macbeth and Macbeth's subsequent soliloquy, perhaps Shakespeare is acknowledging the fragility and futility of human life: the power and ambition that drove them to their duplicitous actions are futile in the grand scheme of things. **Key Context** Nihilism is the belief that all values are baseless and that nothing can be known or communicated. It is often associated with extreme pessimism and a radical skepticism that condemns existence. A true nihilist would believe in nothing, have no loyalties, and no purpose other than, perhaps, an impulse to destroy **Key Quotations** "Out, out, brief candle!/Life's but a walking shadow, a poor player/That struts and frets his hour upon the stage/ And then is heard no more: it is a tale/Told by an idiot, full of sound and fury,/Signifying nothing"	**Unchecked Ambition –** The tale of Macbeth ruthlessly exposes the dangers of ambition when it is not held by moral constraints. Ambition turns Macbeth from a brave and loyal Scottish General into a murderous tyrant. Lady Macbeth is another example of this theme, as she is unable to deal with the acts that she and Macbeth have committed to fuel their ambition, and so commits suicide. **Fate vs Free Will –** Throughout the play, the audience is frequently forced to question the notion of fate vs free will – does the story pan out the way that it does because it was pre-ordained, or because of the actions that Macbeth chose to take? Macbeth fervently attempts to fight the negative aspects of his fate, and yet it is these very actions (his free will) that cause the predetermined downfall (fate	**Gender, Masculinity and Femininity –** Lady Macbeth manipulates her husband by questioning his masculinity, as he originally declines to murder King Duncan for the throne. She states that she wishes she could be 'unsexed' so as to give her bravery to commit the deed. Masculinity is frequently associated with raw aggression, and femininity with weakness and kindness. **Inversion oÿ the Natural Order** – Wherever the natural order is disturbed in Macbeth (the three supernatural witches, the murder of a king) disorder and chaos soon follow. There is only peace when the natural order is restored (Malcolm is seated on the throne). In line with the beliefs of King James, through Macbeth Shakespeare expresses that the inversion of the natural order is dangerous and destructive.

Year 10 - French- Cycle 1

Classroom interaction language

- **Ça va? –** How are you? (How is it going?)
- **Ça va bien –** I am well (it is going well)
- **Ca ne va pas –** I am not well (it's not going well)
- **Merci –** Thank you
- **Et toi? –** And you?
- **Comment dit-on…en français? –** How do you say…in French?
- **un stylo violet –** a purple pen
- **un stylo noir –** a black pen
- **J'ai gagné** – I (have) won
- **Tu as perdu** – You (have) lost
- **On a fini** – We have finished
- **Est-ce que je peux avoir…?–** Can I have…?
- **Est-ce que je peux faire les points? –** Can I do the points?

Week 1 – key vocabulary and content

ennuyeux+	boring
neuf/neuve	new
embêtant	annoying
inquiet inquiète	worried, anxious
inquiétant	worrying, disturbing
bavard	talkative
sérieux	serious
paresseux	lazy
fier/fière	proud
seul	alone
joli	pretty, attractive
ressembler à, se ressemble	to look like, to look alike
se disputer	to argue
surtout	especially
la colère	anger

Week 2 - key vocabulary and content

célibataire	single
cher	expensive
queer/gay	queer/gay
non-binaire	non binary
hétéro	heterosexual
bi(sexuel)	bisexual
transgenre	trans
l'indépendance	indépendance
essayer	to try
l'autre	other
le PACS	civil partnership
l'autre	other
aider (à)	to help (to)
garder	to keep
se marier	to get married
aucun(e)	not a/at all
le passe-temps	hobby

Week 3 - key vocabulary and content

adopté	adopted
séparé	separated
handicapé	disabled
né	born
la tante	aunt
la belle-mère	stepmother
la cousine	cousin (f)
l'émission	TV/radio programme
l'oncle	uncle
le beau-père	stepfather
le couple	couple
le mari	husband
le membre	member
remplir	to fill
rire	to laugh
grandir	to grow up
réunir, se réunir	to gather, to meet

Week 4 - key vocabulary and content

discuter (de)	to talk about
inviter	to invite
rencontrer	to meet
encourager (à)	to encourage (+inf)
chatter	to chat
s'entendre	to get on
il manque	we miss
il vaut mieux	It's best to + inf
il vaut la peine de	it is worth + inf
plus…que	more…than
moins…que	less…than
aussi…que	as…as
pas encore	not yet

Week 5 - key vocabulary and content

Revise the key sentences and all vocabulary from this cycle ready for your mid-cycle assessment next week.

Classroom interaction language

- **car je suis non seulement…mais aussi…** - because I am not only… but also…
- **C'est vrai –** it is true
- **C'est faux –** it is false
- **A mon avis** – In my opinion
- **Je pense que** – I think that
- **Selon moi** – according to me
- **Je dirais que** – I would say that
- **D'une part…** - on the one hand…
- **d'autre part … -** on the other hand
- **Je suis d'accord (avec toi)** – I agree with you
- **Je ne suis pas d'accord (avec toi)** – I don't agree (with you)
- **soit… soit …** - either… or….
- **Quand j'étais plus jeune** – when I was younger

Week 6 - key vocabulary and content

progresser	to progress
proposer	to offer/suggest
le pauvre	the poor
situer	to locate
partager	to share
la communication	communication
l'organisation	organisation
intéresser	to interest
s'intéresser à	to be interested in
l'émotion	emotion
l'organisation caritative	charity
Bien sûr	Of course!

Week 7 - key vocabulary and content

scolaire	school
le/la/les meilleur(e)(s)	the best
le/la/les pire(s)	the worse
le gymnase	gymmasium
la cantine	canteen
la salle informatique	IT room
interdire (à)	to (someone) forbid, ban
retourner	to return
tellement	so much
plein de	full/plenty of
le règlement	rule/regulation
plus tard	later

Week 8 - key vocabulary and content

quelques	some
le quartier	neighbourhood
le roman	novel
l'auteur	author
le métier	profession
la carrière	career
la soirée	evening
l'autrice	author
poster	to post

Week 9 - key vocabulary and content

froid	cold
la grève	strike
la réunion	meeting
expliquer	to explain
construire	to build
le parlement	parliament
la feuille	leaf/sheet
l'enquête	survey
être en train de	to be in the middle of doing

Week 10 - key vocabulary and content

Revise the key sentences and all vocabulary from this cycle ready for your assessment next week.

Year 10 - Geography- Cycle 1

Key vocabulary

Natural Hazard: Natural hazards are extreme natural events that can cause loss of life, extreme damage to property and disrupt human activities.

Volcano: An opening in the Earth's crust through which lava, ash, and gases erupt. The term also includes the cone-shaped landform built by repeated eruptions over time.

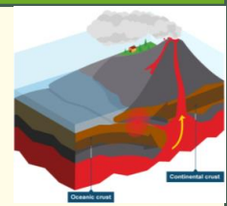
Responses: how countries react to a natural hazard. They can be categorised as: Short-term or immediate.

Frequency: the rate at which something occurs over a particular period of time

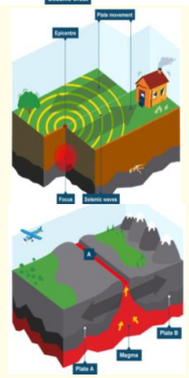
Distribution: the way something is spread out or arranged over a geographic area.

Week 1 – Plate Boundaries

Plate boundaries



Destructive- When the denser plate subducts beneath the other, friction causes it to **melt and become molten magma**. The magma forces its ways up to the surface to form a volcano. This margin is also responsible for **devastating earthquakes**.



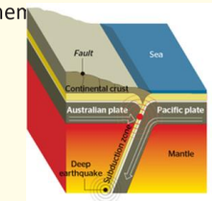
Constructive - Here two plates are moving apart causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the Mid Atlantic Ridge.

Conservative - occurs where plates slide past each other in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the San Andreas Fault, USA.

Week 2 – New Zealand Earthquake (HIC)

New Zealand Earthquake
GNI per Capita: US$ 42,710

- 6.3 on Richter Scale
- 22nd February 2011
- 10km west of Christchurch
- Killed 185 people. 3,129 injured
- Shallow Focus 5km deep
- Cost $40bn in damages
- 100,000 building damaged and 10,000 needed demolishing
- Around $6-7 min of international aid provided
- 30,000 residents provided with chen
- Temporary houses provided by the government



Week 3 – Haiti Earthquake (LIC)

New Zealand Earthquake
Haiti GNI per Capita: US$ 1,360

- 7 on Richter Scale
- 12th January 2010
- Epicentre 26km from Port-au-Prince
- Killed 250,00 people. 300,000 injured
- Shallow Focus 10km deep
- Cost $8.5bn in damages
- 300,000 homes damaged/destroyed
- 2 million people left without food and water
- Many dead bodies left in rubble – disease spread.
- Collapsed government buildings
- Help didn't reach many places for days or weeks
- $100 million provided in Aid by the world bank
- After 1 year there was still 1,300 temporary camps

Week 4 – Hazard Management & Risk

Hazard Management

Prediction: involves using seismometers to monitor earth tremors. Experts know where earthquakes are likely to happen. However, it is very difficult to predict when they will happen. Even looking at the timescale between earthquakes doesn't seem to work.

Protection: involves constructing buildings so that they are safe to live in and will not collapse.

Preparation: In earthquake-prone countries, hospitals, emergency services and residents practise for an earthquake. They have drills in all public buildings so that people know what to do in the event of an earthquake. This helps to reduce the impact and increases their chance of survival.

Week 5 – Formation of Tropical Storms

Formation of Tropical Storms

A tropical storm occurs when tropical warm air rises to create an area of intense low pressure. As the warm, moist air reaches high altitudes, powerful winds spiral around the calm central point, creating the 'eye of the storm', and the warm air cools and condenses into heavy rainfall,

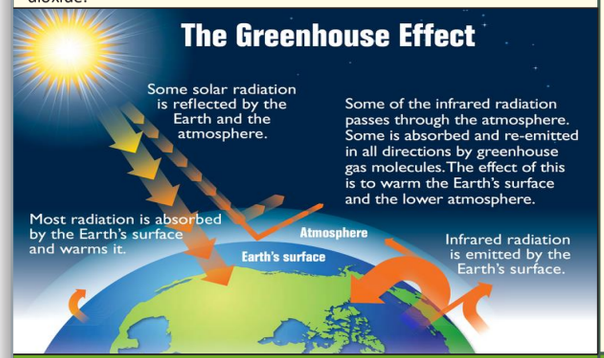
CONDITIONS WHICH CAUSE TROPICAL STORMS	WHY DOES THIS CONTRIBUTE TO THEIR FORMATION?
Low latitude Between 5-30 degrees north and south of the Equator	Temperatures are higher here than at the Poles so the sea and air are heated more quickly, to higher temperatures. Air pressure is low, and air rises.
Originate in oceans with temperatures above 26.5°C to a depth of 60-70m	Provides heat and moisture so warm air rises rapidly.
Between summer and autumn	Typically the warmest seasons to encourage warmer air to rise rapidly, on account of low pressure.
Low wind shear	Wind is constant and doesn't vary so clouds rise to high altitudes without being torn apart.

Climate Change

Climate change: a long-term change in the Earth's climate, especially a change due to an increase in the average atmospheric temperature.

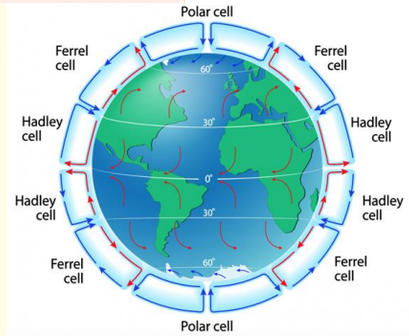
Scientists believe that climate change is having an impact on the frequency and strength of tropical storms. This may be due to an increase in ocean temperatures.

Greenhouse Effect: Natural warming of the atmosphere as heat given off from the Earth is absorbed by liquids and gases, such as carbon dioxide.



Week 6 – Global patterns of Air Circulation

Hadley cell	Largest cell which extends from the **Equator** to between **30° to 40° north & south.**
Ferrel cell	Middle cell where air flows **poleward** between **60° & 70°** latitude.
Polar cell	**Smallest & weakness** cell that occurs from the poles to the Ferrel cell.



Week 7 –Typhoon Haiyan (LIC)

Typhoon Haiyan- Philippines: Population: 108 million, GDP per Capita: $3,500 (LIC) 27% of Population live in poverty.

Primary effects:
- 50% of houses destroyed
- Damage cost $12 billion
- 1.1 million tonnes of crops were destroyed

Secondary effects
- Eight deaths in a stampede as survivors fought for rice supplies.
- Fishing industry was disrupted as the leaked oil from the grounded barge contaminated fishing water.
- Ten hectares of mangroves (saltwater-adapted trees or shrubs) were contaminated by the oil barge leak.

Immediate Responses
- Authorities evacuated 800 000 people. Many went to Tacloban Indoor Stadium, which had a reinforced roof to withstand typhoon winds, however, it flooded.

Long-term Responses
- Thirty-three countries and international organisations pledged help. More than $1.5billion US dollars was pledged in foreign aid.

Week 8 – Somerset Level Floods (UK)

Somerset Level Floods 2013/14

The **Somerset Levels** are an area of **low-lying** coastal plains and wetlands located in the **south-west of the UK** in the county of Somerset. Several rivers flow through the Somerset Levels and drain into the Bristol channel, notably the **River Tone and River Parrett**. The low-lying nature of the area makes it prone to flooding. **Causes:**

Rain – January 2014 wettest on record with 350mm rain.

High tides - Hightides and storm surges prevented freshwater from draining.

Dredging - rivers full of sediment, not dredged for 20 years.

Social	Economic	Environmental
• Over **600 homes** flooded.  *A home in Muchelney.* (Source: Matt Cardy/Getty Images) • Residents were **evacuated** into **temporary accommodation**, for **months** in some cases. • **16 farms** had to be **evacuated.**	• **Cost of damage** estimated to be **over £10 million** according to Somerset County Council.  *A damaged home in Thorney.* (Source: Matt Cardy/Getty) • Agricultural land flooded - over **14,000 ha of agricultural land** was underwater for **3-4 weeks.**	• **Sewage, chemicals** like pesticides and **oil contaminated the floodwater**, which spread to other areas.  *A crane foraging during floods.* (Source: ITV West Country) • Flooding **destroyed ecosystems** and **limited food supplies** for animals

Week 9 – Causes of Climate Change

Natural causes of climate change

Milankovitch cycles: Sometimes the Earth's orbit is more elliptical than circular, the Earth's tilt on its axis changes or the Earth wobbles on its axis, all influencing its global temperature.

Sunspots: The sun's output is not constant. Temperatures are greatest when there are more sunspots radiating more heat.

Volcanic eruptions: Eruptions produce ash and sulphur dioxide which can enter the upper atmosphere. Sunlight can be reflected off this blanket of ash and gas, cooling the planet.

Human Causes of Climate Change

Gases such as chlorofluorocarbons (CFCs) and hydrofluorocarbons (HFCs) are human-made. Human activity is increasing the natural levels of these gases and making the greenhouse 'blanket' thicker. As the world's **population has grown** and countries have developed, they need energy to fuel industry, transport and cities. Power stations, factories, homes and cars **burn fossil fuels** such as oil or gas. These have to be extracted, or mined, from the ground, releasing carbon dioxide into our atmosphere. The world's forests naturally absorb greenhouse gases, but people are **cutting down forests** and often burning them, which releases further C02.

Week 10 – Responses to Climate Change

Climate Change responses

Mitigation: Reducing emissions of and stabilising the levels of heat-trapping greenhouse gases in the atmosphere.

Adaptation: Adapting to the climate change already in the pipeline; adjusting to actual or expected future climate.

International agreements: Paris agreement in 2015, first legally-binding agreement signed by 190 parties. Goal to keep an increase in global average temperature below 2°C. **Carbon capture:** removal of CO_2 from power stations and storing it underground. **Water supply:** water transfer schemes could be used to take water from an area of surplus to an area of shortage. **Reducing risk from sea level rise:** areas at risk may need sea defences to protect valuable land from increased coastal erosion. **Renewable Energy:** Using sustainable resources and reducing reliance on fossil fuels.

Year 10 - History - Cycle 1	Week 1 – Medieval Medicine	Week 2 – Medieval Medicine Case Study
Key Terminology • **Four Humours**: This was an ancient idea, first put forward by **Hippocrates** (a Greek physician and philosopher). • The universe is made up of four elements; and the body is made up of four humours (liquids) If these humours are in balance the body will be healthy, when they are unbalanced you become ill. **Galen** (Roman physician) developed the idea with **theory of Opposites**. • **Miasma**: Bad smelling air thought to be harmful – so corpses, rotting matter, swamps thought to cause disease. In Renaissance Period – fines for not "cleaning" air outside your house.	• **Causes - Supernatural ideas**: The Church was hugely powerful: Belief in heaven / hell. No education, so people learned from church. God punishes sinners. Disease is a punishment sent by God. Astrology Idea that the position of the stars affects our lives. • **Treatment and prevention:** Prayer; saying mass; fasting; going on pilgrimage – all advised as religious "treatments". Humoural • **Treatments:** Physician suggested a treatment for each symptom, including bleeding and purging; bathing (only available to rich); remedies (made from herbs and spices) • **Prevention**: PRAY! Practice basic hygiene (as recommended in the Regimen Sanitatis) Purifying bad air (eg carry a sweet-smelling "posy"; some measures were taken to keep towns clean.	• **The Black Death (1348)** • Killed **1/3 of British population 1348-50** • **Bubonic Plague**: spread by fleas on rats. • **Pneumonic Plague**: spread by coughing. • **Ideas about cause**: People did not understand real cause, they thought it was: • Punishment from God, Imbalance of four humours. • **How was it dealt with?** : Prayer / fasting / flagellation (whipping), Light fires / carry posies to ward off miasma, Local governments tried to control by: buildings new cemeteries - close Parliament in 1349 - enforcing street cleaning in cities, but this often didn't happen. • **Consequences**: Fewer workers, demand higher wages and had more freedoms. • **Roger Bacon**: Put in prison around 1270 for suggesting doctors should do their own research.
Week 3 – Renaissance Medicine	**Week 4 – Renaissance Case Study**	**Week 5 – Renaissance Key People**
• **Supernatural and religious explanations** of the cause of disease still maintained. • **Rational explanations**: the Theory of the Four Humours and the miasma theory. • **Approaches to prevention and treatment**: connection with ideas about disease and illness; religious actions, bloodletting and purging, purifying the air, and the use of remedies. • **New and traditional approaches** to hospital care in the 13th century: The role of the physician, apothecary and barber surgeon in treatment and care provided within the community and in hospitals. • **Cleanliness still important**; though less use of public baths since arrival of syphilis, moderation avoiding too much alcohol, cold, food.	• **Great Plague (1665)** • Disease continued to strike after 1348 (Black Death) – 1665 was a particularly bad year. • **More than 65,000 died** in London • **Prevention** = Measures recommended to help people avoid the Plague: - • **Prayer** - **Quarantine** (plague victim kept isolated from others to stop spread of disease) - "examiner" to check if anyone suffering in parish - "watchman" guard house of victims – • **Cross** marked on every affected house - **Pomander** (ball full of sweet smelling herbs) carried to keep away miasma. • **Plague doctors wore special costume**: - Bird design to "transfer" disease away from patient - Mask full of herbs - Public meeting, fairs, theatres cancelled to stop spread of disease.	• **Thomas Sydenham** - "English Hippocrates". He observed patients' symptoms. This enabled him identify the disease that needed to be treated. • **Vesalius** - Anatomist. Carried out dissections, found errors in Galen's ideas (eg lower jaw = one bone, not two. Published in "Fabric of the Human Body" in 1543. • **William Harvey** - discovered how blood circulated round the body =, published his findings in 1628. • **Johannes Guttenberg** – Created the Printing Press in 1440, allowed new ideas to be circulated during the Renaissance.

Week 6 – Industrial Cause and Treatment	Week 6 – Industrial Prevention	Week 7 – Industrial Case Study and Key People
• **Louis Pasteur** published Germ Theory 1861. • **Robert Koch** identified that different microbes caused different diseases. First discovered cholera 1883, scientists studied diseases, not symptoms. • **Florence Nightingale**: nurse in Crimean War 1854; hospitals appalling. Made changes to way wounded soldiers treated - **Sanitation** (clean hospital, bedding) - Nurses to provide care - Good meals provided Mortality rate (% of wounded dying) fell from 40% to 3%. • Nightingale returned to GB . Set up nursing college; designed hospitals with wards to stop disease spreading; wrote "Notes on Nursing". • **Edward Jenner** developed vaccination to protect against smallpox. 1796.	• Public Health: • **1848 Public Health act** - encouraged cities to provide clean water, but not compulsory. • **1852** government makes smallpox vaccinations compulsory. • **1875 Public Health Act**. Realisation government should intervene to improve living conditions in cities. • City authorities forced to: provide **clean water**, **dispose of sewage properly**, **public health officer** to **monitor outbreak** of disease, ensure **good new housing.**	• Case Study: **Cholera (1854)** particularly affected the poor – those living in slums and workhouses. • Three "epidemics" (major outbreaks, killing thousands). • Government tried to prevent by cleaning slums to reduce miasma – **did not work**. • 1854 outbreak studied by **John Snow**. Proved that cholera was spread by dirty water. • **Edwin Chadwick** wrote the initial report on improving British Public Health. • **James Simpson** discovered chloroform. • **Joseph Lister** develop use of carbolic acid to tackle infection in surgery. • **Joseph Bazalgette** – designed and created London's sewer system.
Week 8 – Modern Cause and Treatment	**Week 9 – Modern Prevention and Penicillin**	**Week 10 - Modern**
• **Scientific causes** replaced ideas of Four Humours, miasma. • Doctors use evidence based knowledge to diagnose patients. • **Technology developed to diagnose**: blood tests; x-rays; ultrasound scans; endoscopes (camera which can see inside the body). • **1900** a German scientist first came up with the theory of genetics, but microscopes were not powerful enough to prove the idea. • **1953 Watson and Crick** discovered the **shape of DNA.** • **Lifestyle**: During C20th we have better understood the impact of lifestyle choices on health. Smoking It is the biggest cause of preventable disease in the world now. • A poor diet with too much sugar or fat can cause **heart disease** and type **2 diabetes**.	• **Magic bullet**: attacks disease, not body. • **Salvarsan 606** – first developed to attack syphilis Penicillin (see below) • **Technology** has helped to identify and combat diseases. • **NHS 1911 National Insurance Act** only covered working men. • **1948** – to provide free healthcare for all from cradle to grave. Hospital, GP, dentist, ambulance, health visitor. • **1871 Joseph Lister** used penicillin to treat a patient, but left no record of his discovery. • **1928 Alexander Fleming** noticed that in his lab, some mould was killing bacteria. • **Florey and Chain** were studying antibiotics. They read Fleming's work, 1940 tested successfully on mice. But couldn't produce large quantities. • Mass produced thanks to **WWII 1941**.	• **Second most common cancer** in the UK. • **85% of cases are smokers / ex-smokers**. • In C19th only 1% of cancers were lung cancer; 1918 10%; 1927 14% (smoking became more popular – mainly due to tobacco company advertising). **Lung cancer hard to diagnose** accurately with X-ray, it can be diagnosed using **CT scan** (only recently) – which is more accurate. • When diagnosed treatment can be: - remove infected part of lung - transplant lung from healthy patient. • **Radiotherapy**: attacking the cancer with radiation - **Chemotherapy**: attacking the cancer with chemicals. Government realised smoking was a problem in 1950s, but made lots of money from tobacco tax. **Government action**: - Advertising ban - Ban on smoking in public - Anti-smoking campaigns - Raising taxes.

Year 10 - Music BTEC - Cycle 1	Week 1	Week 2
Key vocabulary/content/ideas 1. **Broken Chord** - A chord in which the notes are played successively. Similar to an arpeggio. 2. **Chord Progression** - The order of the chords used in a piece of music 3. **Conjunct** - Moving up or down by one note. Movi.ng in steps 4. **Disjunct** - Moving by leaps. 5. **Four on the floor** - A rhythm in 4/4 time in which the bass drum is played on every beat. 6. **Inversion**- Rearrangement of notes in a chord. 7. **Improvisation** - Music made up by a musician in mid performance. 8. **Melody** - A sequence of single notes. The 'tune'. 9. **Major chord** - In music theory, a major chord is a chord that has a root, major third, and perfect fifth. When a chord has these three notes alone, it is called a major triad. 10. **Minor chord** - In music theory, a minor chord is a chord that has a root, minor third, and perfect fifth. When a chord has these three notes alone, it is called a minor triad.	• Target Setting You have created three SMART targets. SMART is an acronym that stands for Specific, Measurable, Achievable, Realistic, and Timely. Therefore, a SMART goal incorporates all of these criteria to help focus your efforts and increase the chances of achieving that goal. • Practise Complete tasks which improve the techniques you have identified in your SMART targets.	• Music Theory The musical elements are the way that we analyse and understand music. The elements of music can be split into compositional features and sonic features. **Compositional features:** Melody Harmony Structure Tempo Rhythm Tonality **Sonic features:** Texture Timbre Production Instrumentation Can you put the keywords listed in your knowledge organiser into the different elements of music? • Practise Work on a solo piece of your choice to share with the class.
Week 3	**Week 4**	**Week 5**
• Listening 1. She Loves You **Beatles** 2. My Generation **The Who** • Features of British Invasion Simple chord progression Guitar, Vocals, Bass, Drum Kit Vocal Harmonies British Accents • Practise Work on a solo piece of your choice to share with the class.	• Listening 1. No Woman No Cry **Bob Marley** 2. Message to Rudy **The Specials** • Features of Reggae Off beat chords Simple chord progression Bubble organ sound Use of brass Drum introduction • Practise Work on a solo piece of your choice to share with the class.	• Listening 1. Park life **Blur** 2. Don't look Back in Anger **Oasis** • Features of Britpop Simple chord progression Guitar, Vocals, Bass, Drum Kit 'Raw' sound - unfinished Vocal Harmonies British Accents Lack of lead guitar • Performance

Key vocabulary/content/ideas	Week 6	Week 7
1. **Off beat** – Emphasis on the second and fourth beat. 2. **Pentatonic** - Five note scale that omits the 4th and 7th notes of the major scale. 3. **Riff** - Repeated short melodic or rhythmic figure. 4. **Root** - The root of the chord is always the note that is the basis for the **chord**, regardless of its inversion. 5. **Sequence**- Restatement of a motif or longer melodic (or harmonic) passage at a higher or lower pitch. This is a word used to describe melodies. 6. **Sequencing** - **Sequencing** is the programming (inputting) of notes and sounds to play in melodic. 7. **Syncopation** - Accents which are note on the beat, or rhythms that emphasise unusual parts of the beat. 8. **Triad –** Set of three notes that can be stacked vertically in thirds. 9. **Quantisation** - When the DAW makes timing adjustment automatically. Used to correct timing errors or to add groove.	• Listening 1. Alone **Marshmello** 2. Sandstorm **Darude** • Features of EDM Four on the floor drum beat Electronic instruments 4/4 time signature Use of build up and drop • Subgenres House Techno Trance Dubstep Drum and Bass	• Listening 1. Four Seasons **Vivaldi** 2. Danse macabre, Op.40 **CamilleSaint-Saëns** 3. Main Theme From Schindler's List **John Williams** 4. Adagio For Strings **Samuel Barber Orchestrated Arturo Toscanani** • Programme Music key features Music which tells a story Use of Orchestra • Film Music key terms Diegetic Non Diegetic Motifs Leitmotifs Thematic development • Practise Work on a group piece of your choice to share with the class.
Week 8	**Week 9**	**Week 10**
• Listening 1. So What **Miles Davis** 2. Inner State of Mind **Courtney Pine** • Features of Jazz Extended chords Improvisation The 'head (main melody) something that keeps coming back. • Subgenres Bepop Big band • Practise Work on a group piece of your choice to share with the class.	• Practise for your group performance. • Starting Component 1. You will need to choose 4 of the styles covered this Cycle. **Compositional features** **Sonic features**	• Hand in for Component 1. • Performances and sharing work.

Notes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